2025–2026 GRADUATE AND UNDERGRADUATE

UNIVERSITY **CATALOG**



Massachusetts College *of* Pharmacy *and* Health Sciences

This catalog is intended to provide working guidelines and descriptions of the general and academic policies of the University applicable to students. It is not intended and cannot be construed as a contract or guaranty of any kind, express or implied, and the University may change, delete, or add to these guidelines unilaterally in its sole discretion and without notice. The University also reserves the right to determine the applicability of any policy to a particular situation or set of circumstances and to depart from the guidelines contained herein in a given case. This catalog supersedes any previous catalog, policies, or practices relating to students. It is the responsibility of students to know and understand the University's policies. The University may, from time to time, acquire or develop new programs, or expand its offerings in other locations, including distance learning programs, and the guidelines in this catalog shall apply to all such programs and locations. The University may, from time to time, elect to phase out programs to reflect changes in the healthcare education marketplace. Should this happen, the University will provide academic plans for students then currently enrolled in affected programs to enable them to complete the program requirements. Students are expected to know the contents of this catalog relating to their program of study, and should consult the University's website for any changes made to the catalog since the latest printing. Additional guidelines and policies are contained in the individual course syllabi. Students are expected to know the contents of the course syllabi relating to their program of study. This catalog is thoroughly updated and reflects the most recent information and complies with the state and federal laws and regulations as of the last revision date.

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Protection from Discrimination and Harassment

Massachusetts College of Pharmacy and Health Sciences ("MCPHS" or the "University") does not discriminate in admission, treatment, or access to its programs or activities or in employment in its programs or activities on the basis of race, color, national origin, sex, pregnancy, age, physical or mental disability, creed, religion, sexual orientation, gender identity, gender expression, ancestry, genetic information, military service, marital status, familial status, or veteran status and actively complies with the requirements of Federal Executive Orders 11246 and 11375 as amended; the Civil Rights Act of 1964 as amended; Title IX of the Education Amendments of 1972 as amended; Sections 503 and 504 of the Rehabilitation Act of 1973; Section 402, Vietnam Era Veterans Readjustment Assistance Act of 1974; the Age Discrimination Act of 1975; the Americans with Disabilities Act of 1990 (as amended by the ADA Amendments Act of 2008); and all other applicable federal, state, and local laws, regulations, and executive directives.

The University will not tolerate acts of discrimination or harassment based upon Protected Classes, or related retaliation against any individual for complaining of or participating in an investigation or proceeding relating to a complaint of discrimination or harassment based upon a Protected Class. For purposes of this policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, physical or mental disability, creed, religion, ethnicity, natural or protective hairstyle, sexual orientation, gender, gender identity, gender expression, ancestry, genetic information, military service, marital status, familial status, veteran status and any other characteristic protected by law.

Protection from Sexual Harassment (Title IX) Policy

MCPHS prohibits Sexual Harassment in accordance with the MCPHS Protection from Sexual Harassment (Title IX) Policy. On January 9, 2025, the United States District Court for the Eastern District of Kentucky issued a ruling in Tennessee vs. Cardona (Case: 2:24-cv-00072-DCR-CJS Doc #: 143 Filed: 01/09/25) vacating the Title IX 2024 regulations. Therefore, effective January 9, 2025, all concerns related to sexual harassment will be reviewed following the MCPHS Protection from Sexual Harassment (Title IX) Policy that was in effect prior to August 1. 2024. Any member of the MCPHS community who has a complaint or concern about sex discrimination and sex-based harassment, or would like more information about the University's policies regarding sex discrimination and sex-based harassment, should contact Rachel Andoscia, Title IX Coordinator, 179 Longwood Avenue, Boston, MA 02115; 617.733.8145; TitleIX@mcphs.edu.

Occupational Health and Safety Master Plan

MCPHS strives to provide a learning, teaching, working, and research environment free from recognized health and safety hazards. Pursuant to the requirements of the U.S. Occupational Safety and Health Administration, the City of Boston, the Federal Emergency Management Agency, and the Nuclear Regulatory Commission, MCPHS has established protocols and procedures to protect its students and employees from potential occupational, health, safety, and radiation hazards. For further information, please contact the Director of Environmental Health and Safety at 617.732.2861.

COVID-19 Notice

The federal government ended the COVID-19 public health emergency on May 11, 2023. Guidance and updates can be found on the MCPHS COVID-19 Information Center webpage: https://www.mcphs.edu/about/covid (the "COVID-19 Guidance"), which MCPHS students, faculty, and staff are expected to consult regularly and comply with as applicable. In the event the COVID-19 Guidance conflicts with anything contained in this Catalog, the COVID-19 Guidance shall govern.

Annual Notification of Student Rights under FERPA

The Family Educational Rights and Privacy Act (FERPA) of 1974, as amended, affords students certain rights with respect to their own education records. These rights include the following:

1. The right to inspect and review student education records within 45 days of the day the University receives a request for access. Students should submit to the Office of the Registrar written requests that identify the record(s) they wish to inspect. The registrar will make arrangements for access within 45 days from the date of such request, and will notify the students of the time and place where the records may be inspected. The University reserves the right to deny a copy of a student education record (including, without limitation, a transcript) for which a financial hold exists (a hold is imposed if the student fails to pay bills, fees, or fines owed to the University). A hold will not interfere with the right to visually examine student education records. Questions about the University's policies and practices relating to the Act should be addressed to the Office of the Registrar.

2. The right to request an amendment of student education records that students believe are inaccurate or misleading. Students should write the University registrar, clearly identify the part of the records they want changed, and specify why the records are inaccurate or misleading. If the University decides not to amend the records as requested, it will notify the students of the decision and advise the students of their right to a hearing. Additional information regarding the hearing procedures will be provided to the students when they are notified of the right to a hearing.

3. The right to consent to disclosures of personally identifiable information contained in student education records, except to the extent that FERPA authorizes disclosure without consent. One exception that permits disclosure without consent is disclosure to appropriate parties in connection with a health or safety emergency. Another exception that permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review a student education record in order to fulfill his or her professional responsibility. Upon request, the University may disclose student education records without consent to officials of another school in which a student seeks or intends to enroll if the disclosure is for purposes related to the student's enrollment or transfer. Education records may be compelled and disclosed without consent by, or notice to, the student pursuant to a valid subpoena issued under the USA Patriot Act. Finally, personally identifiable "directory information" may be released freely unless the student files the appropriate form requesting that such information not be released. This form is available at the Office of the Registrar and on the MCPHS website. Directory information includes the following:

- Name
- Student ID
- Local address
- Permanent address
- University email address
- Major and minor field(s) of study, including the school or program in which a student is enrolled
- Classification as a freshman, sophomore, junior, senior, or graduate, or by number referring to such classes
- Course load—full-time or part-time
- Participation in officially recognized activities
- Dates of attendance and graduation, and degrees received
- Most recent previous educational institution attended
- Honors and awards received, including selection to a dean's list or an honorary organization
- New England School of Acupuncture Clinical Internship Schedule

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. The office that administers FERPA is:

U.S. Department of Education
Student Privacy Policy Office
400 Maryland Avenue, SW
Washington, DC 20202-5920

Clinical Rotations and Background Screenings

For some MCPHS programs, placement in clinical rotations at healthcare providers is a required part of the MCPHS curriculum. Some healthcare providers require background screenings, and a conviction for a criminal offense might present an issue. It is possible that certain types of criminal convictions, whether prior to being a student at MCPHS or while attending MCPHS, could preclude a student from being able to complete a required clinical rotation. For additional information, please contact the MCPHS Office of Legal Affairs.

MCPHS Compliance Hotline

Massachusetts College of Pharmacy and Health Sciences is committed to conducting business ethically and in compliance with applicable laws, regulations and University policies. The MCPHS Compliance Hotline, with the support of the MCPHS community, is an effective way to help the University address potential noncompliance with laws, regulations and University policies.

Examples of compliance issues that may be reported using the Compliance Hotline include financial impropriety, misuse of MCPHS resources, conflicts of interest, discrimination, harassment, health and safety issues, information security violations, etc. You do not need to know the exact law, regulation, or policy, or be certain a violation has occurred or will occur. If you are uncertain, the better course of action is to report. It is important that you provide enough information to allow your concerns to be adequately investigated and addressed.

The Compliance Hotline is an anonymous, toll-free, 24-hours-a-day, 7 days-a-week resource to report concerns if you do not feel comfortable going through the normal administrative channels. A detailed report will be forwarded to the MCPHS Office of Compliance. The Compliance Hotline is staffed and managed by a respected company, Lighthouse Services, Inc., that is not affiliated with MCPHS and provides this service under contract. No call tracing or recording devices are ever used on phone calls and the complainant contact information will be removed from reports made via email or fax before being transmitted to MCPHS.

Inquiries and reports can be made without fear of retribution. MCPHS policy prohibits any retaliation against individuals who report compliance issues in good faith. Violation of this policy may result in disciplinary action. To use the Compliance Hotline, you may report suspected non-compliance by telephone, email, or fax as follows:

- **Compliance Hotline: 877.472.2110**
- Email: reports@lighthouse-services.com (Indicate that your report concerns MCPHS)
- Fax: 215.689.3885 (Indicate that your report concerns MCPHS)
- If you are faced with an emergency or are concerned for the immediate safety of yourself or others, dial 911.

Student Complaints

For in-person students, contact information for filing complaints with the relevant state official or agency is as follows:

- Massachusetts students may file a complaint with the Massachusetts Attorney General's Office.
- New Hampshire students may submit a complaint with the Division of Educator Support and Higher Education of the New Hampshire Department of Education.

For online students, complaint information is set forth in the State Authorization Reciprocity Agreement (SARA) section of this document.

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WELCOME FROM PRESIDENT RICHARD J. LESSARD

Fall 2025

Dear Students,

Welcome to the 2025-2026 academic year. At Massachusetts College of Pharmacy and Health Sciences, you are part of an incredibly vibrant Community that is committed to a nurturing and supportive environment. I invite you to engage with our faculty and staff as well as your peers to shape an exciting and rewarding educational journey.

This is a remarkable moment to be at MCPHS. We have entered the next chapter of our proud University, building on our rich history and moving into a future that is filled with tremendous opportunities. Our Strategic Plan guides us on this path and outlines our commitment to fostering a Community of healthcare and life science visionaries.

As you plan your year, I encourage you to explore the full range of opportunities available at MCPHS. Our dedicated faculty members look forward to working with you through your academic experience. In addition, I challenge you to think beyond your conventional degree requirements.

Our Centers for Excellence, each distinct in their mission and focus, promote innovation and collaboration across the University and beyond. Learn with students and faculty from other disciplines at events, activities, and initiatives sponsored by the Centers. Our campuses are brimming with passionate individuals pursuing various paths to promote health and wellbeing. Taking advantage of this unique, interprofessional environment will position you well to become a valuable member and contributor to any healthcare team.

Experiential learning is also central to your education. Our partnerships and collaborations with renowned institutions provide additional opportunities for you to interact with patients, providers, and other healthcare and life science professionals.

Remember that faculty and staff are always here for you. Connect with your faculty to gain experience in one of our cutting-edge life sciences labs. Many students also pursue research projects while at MCPHS, which requires close collaboration with faculty mentors. Lean on your faculty advisors, academic coaches, and counselors to expand your horizons. Whatever your goals, we have an unwavering commitment to support you as you achieve your success.

We are so grateful to our students who come from more than 50 states and 90 countries for making MCPHS a vibrant place to learn and grow. We need innovative thinkers to address the pressing challenges in healthcare and the life sciences and will continue to work together as we create a healthier more equitable world.

Sincerely,

Richard J. Lessard, President

INTRODUCTION TO THE UNIVERSITY

Our Purpose
Leading with vision. Educating with passion. Serving with care.

Our Mission
Advancing health science education, scholarship, and practice grounded in collaboration and engagement.

Our Vision
Empowering our Community to create a healthier, more equitable world.

Our Core Values

Integrity: We act in a manner that demonstrates honesty, respect, transparency, morality, and justice in everything we do.

Community: We uphold a culture that embraces engagement and encourages empathy, providing a safe and healthy atmosphere for everyone.

Engagement: We welcome all individuals to learn and work in an environment where they feel respected and empowered to fully participate.

Collaboration: We create connections that encourage interprofessional dialogue and cooperation to amplify the impact of our Community members on the University and the world.

Support: We prioritize student success and enrichment, providing faculty and staff with the resources, technology, and infrastructure to create an extraordinary experience for everyone who is enrolled.

Innovation: We embrace change and challenge the status quo to evolve and optimize teaching models that develop the potential of our students and faculty as they learn and pursue new knowledge.

ACCREDITATION

New England Commission of Higher Education
MCPHS is accredited by the New England Commission of Higher Education (formerly the Commission on Institutions of Higher Education of the New England Association of Schools and Colleges, Inc.). Accreditation of an institution of higher education by the commission indicates that the institution meets or exceeds criteria for the assessment of quality periodically applied through a peer-review process. An accredited college or university is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation. Accreditation by the Commission is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the accreditation status by the Commission should be directed to the Office of the Provost at 617.732.2854.

Individuals may also contact: New England Commission of Higher Education, 301 Edgewater Place, Suite 210, Wakefield, MA 01880; tel: 781.425.7785; email: info@neche.org.

Commonwealth of Massachusetts
MCPHS is approved by the Commonwealth of Massachusetts to grant the degrees and certificates awarded by programs on the Boston and Worcester campuses.

State of New Hampshire
MCPHS is approved by the New Hampshire Department of Education, Division of Higher Education – Higher Education Commission to award the Master of Science in Occupational Therapy, Master of Physician Assistant Studies, Doctor of Pharmacy, Bachelor of Science and Master of Science in Nursing degrees on the Manchester campus, contingent upon continuing accreditation by ACOTE, ARC-PA, ACPE, and CCNE, respectively.

Accreditation Commission for Acupuncture and Herbal Medicine (ACAHM)
The following programs offered by MCPHS– New England School of Acupuncture are accredited by the Accreditation Commission for Acupuncture and Herbal Medicine (ACAHM):

(1) Master of Acupuncture
(2) Master of Acupuncture and Chinese herbal medicine
(3) Doctor of Acupuncture (including a Doctor of Acupuncture degree completion track)
(4) Certificate in Chinese herbal medicine [currently named Certificate in Advanced Graduate Study in Chinese Herbal Medicine]

Accreditation status and notes may be viewed on the ACAHM Directory (https://acaom.org/directory-menu/directory/pg/2/).

ACAHM is recognized by the United States Department of Education as the specialized accreditation agency for institutions/programs preparing acupuncture and herbal medicine practitioners. ACAHM does not accredit any programs at the undergraduate/bachelor level. ACAHM is located at 500 Lake Street, Suite 204, Excelsior, MN 55331; phone 952.212.2434; fax 952.657.7068; www.acahm.org

Accreditation Council for Occupational Therapy Education
The entry-level occupational therapy master's degree programs are accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 7501 Wisconsin Avenue, Suite 510E, Bethesda, MD 20814. ACOTE's telephone number c/o AOTA is (301) 652-6611, its Web address is www.acoteonline.org and email address is accred@aota.org.

Accreditation Council on Optometric Education
The Doctor of Optometry (OD) program on the Worcester campus has been granted the classification of Accredited by the Accreditation Council on Optometric Education (243 N. Lindbergh Blvd., St. Louis, MO 63141; phone: 800.365.2219).

Accreditation Council for Pharmacy Education
The School of Pharmacy–Boston Doctor of Pharmacy program and the School of Pharmacy–Worcester/Manchester Doctor of Pharmacy program are separately accredited by the Accreditation Council for Pharmacy Education (ACPE), 190 S. LaSalle Street, Suite 3000, Chicago, IL 60603-3446; tel.: 312.664.3575; fax: 866.228.2631; website: www.acpe-accredit.org.

Accreditation Review Commission on Education for the Physician Assistant, Inc.
The Master of Physician Assistant Studies program on the Boston campus and the Master of Physician Assistant Studies program

on the Manchester/Worcester campuses are separately accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), 3325 Paddocks Parkway, Suite 345 Suwanee, GA 30024 ; tel.: 770.476.1224; fax: 470.253.8271; website: www.arc-pa.org.

American Dental Association's Commission on Dental Accreditation
The Forsyth School of Dental Hygiene is accredited by the American Dental Association's Commission on Dental Accreditation (CODA) and has been granted the accreditation status of Approval Without Reporting Requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. Individuals may contact the Commission on Dental Accreditation at 211 East Chicago Avenue, Chicago, IL 60611; tel.: 312.440.4653; fax: 312.440.2915; website: www.ada.org.

American Registry of Radiologic Technologists
For MRI programs based in postsecondary degree–granting institutions, a current accreditation mechanism acceptable to the American Registry of Radiologic Technologists (ARRT) is accreditation by a regional institutional accrediting agency. MCPHS has been recognized by ARRT as meeting this requirement, and thus graduates of its MRI program are eligible to participate in the ARRT MRI examination. Individuals may contact ARRT at 1255 Northland Drive, St. Paul, MN 55120; tel.: 651.687.0048; website: www.arrt.org.

Commission on Accreditation in Physical Therapy Education
The School of Physical Therapy program at MCPHS is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Ave., Suite 100, Alexandria, Virginia 22305-3085; telephone: 703-706-3245; email: accreditation@apta.org; website: http://www.capteonline.org.

Commission on Accreditation of Allied Health Education Programs
The *General DMS program* is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of *Joint Review Committee on Education in Diagnostic Medical Sonography.* Mailing address: Commission on Accreditation of Allied Health Education Programs, 9355-113th St. N, #7709 Seminole FL 33775; www.caahep.org.

Commission on Accreditation of Allied Health Education Programs
The Diagnostic Medical Sonography, Echocardiography Programs are accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org), upon the recommendation of the Joint Review Committee on Education in Cardiovascular Technology and Diagnostic Medical Sonography. Mailing address: Commission on Accreditation of Allied Health Education Programs, 9355-113th St. N, #7709 Seminole FL 33775; www.caahep.org.

Commission on Collegiate Nursing Education
The Bachelor of Science in Nursing degree program at Massachusetts College of Pharmacy and Health Sciences (MCPHS) is accredited by the Commission on Collegiate Nursing Education: (http://www.ccneaccreditation.org.)

The Master of Science in Nursing degree program at Massachusetts College of Pharmacy and Health Sciences (MCPHS) is accredited by the Commission on Collegiate Nursing Education: (http://www.ccneaccreditation.org.

The Doctor of Nursing Practice degree program at Massachusetts College of Pharmacy and Health Sciences (MCPHS) is accredited by the Commission on Collegiate Nursing Education: (http://www.ccneaccreditation.org.)

Council on Education for Public Health
The Master of Public Health program is accredited by the Council on Education for Public Health (CEPH), an independent agency recognized by the U.S. Department of Education to accredit schools of public health, and public health programs outside schools of public health, 1010 Wayne Avenue, Suite 220, Silver Spring, MD 20910; tel: 202.789.1050; website: https://ceph.org/.

Joint Review Committee on Educational Programs in Nuclear Medicine Technology
The Nuclear Medicine Technology program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology, 820 W Danforth Rd, #B1 Edmond, OK 73003 Phone: (405) 285-0546 Fax: (405) 285-0579 email: mail@jrcnmt.org; website: www.jrcnmt.org.

Joint Review Committee on Education in Radiologic Technology
The Radiation Therapy program and the Radiography program are accredited programmatically by the Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182; tel.: 312.704.5300; fax: 312.704.5304; website: www.jrcert.org.

Massachusetts Board of Registration in Nursing
The Bachelor of Science in Nursing (BSN) program offered on the Worcester campus has full approval from MBORN, 239

Causeway Street, Suite 200, 2nd Floor, Boston, MA 02114, tel: 800.414.0168 or 617.973.0900, fax: 617.973.0984. All current and future students are eligible for the NCLEX-RN licensure examination at the conclusion of the program.

The Bachelor of Science in Nursing (BSN) program offered on the Boston campus has full approval from MBORN, 239 Causeway Street, Suite 200, 2nd Floor, Boston, MA 02114, tel: 800.414.0168 or 617.973.0900, fax: 617.973.0984. All current and future students are eligible for the NCLEX-RN licensure examination at the conclusion of the program.

New Hampshire Board of Nursing
The Bachelor of Science in Nursing (BSN) program offered on the Manchester campus has a full 10-year approval (2021-2031) from the New Hampshire Board of Nursing, located at 21 South Fruit Street, Suite 16, Concord, NH 03301-2431; tel.: 603.271.2323, fax: 603.271.6605.

CAMPUSES, FACILITIES, AND CENTERS

Campuses

Boston

Founded in 1823, MCPHS is the oldest institution of higher education in the city of Boston, and its pharmacy program is the second oldest in the United States. The main campus is located in Boston's Longwood Medical and Academic Area, and the University enjoys working affiliations with some of the world's finest health institutions, including Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Boston Children's Hospital, Boston Medical Center, Tufts Medical Center, and Massachusetts General Hospital. Among its neighbors are Emmanuel College; Massachusetts College of Art and Design; Simmons University; Wentworth Institute of Technology; and Harvard University's medical school, dental school, and school of public health. In this invigorating and stimulating environment, students have access to unsurpassed educational resources.

Undergraduate degree programs offered at the Boston campus include biology, chemistry, dental hygiene, health psychology, premedical health studies, pharmaceutical sciences, public health, healthcare management, medical imaging, and radiologic sciences. First professional degrees are offered in pharmacy, physician assistant studies, and nursing. Each of these programs combines the basic sciences with liberal arts and provides an education for lifelong enrichment. Graduate programs are offered in chemistry, regulatory affairs, pharmaceutics, pharmacology, clinical research, pharmaceutical economics and policy, nursing, healthcare management, clinical management, healthcare administration, and dental hygiene.

Worcester

The Worcester campus opened in 2000 and is home to an accelerated 33-month PharmD program for students who have already completed their preprofessional requirements; a Fast Track Bachelor of Science in Dental Hygiene program for individuals with a prior baccalaureate degree in another field or that have completed pre-requisite coursework; a Fast Track Bachelor of Science degree program in Diagnostic Medical Sonography (General or Echo); a postbaccalaureate Bachelor of Science in Nursing program for individuals with a prior baccalaureate degree in another field; a 24-month Master of Physician Assistant Studies program; a three-year Doctor of Physical Therapy degree program; and a four-year Doctor of Optometry (OD) program. The New England School of Acupuncture (NESA) joined MCPHS in fall 2016, providing two 3-year master's programs in Acupuncture or Acupuncture and Chinese Herbal Medicine. NESA also offers a 4-year Doctor of Acupuncture. The Chinese herbal medicine curriculum is also offered as a Certificate of Advanced Graduate Study designed for those currently enrolled in or who have completed an ACAHM-accredited/pre-accredited entry level program (master's level or professional doctoral) in acupuncture.

Worcester is the second largest city in New England and is well known for its premier educational and healthcare institutions. The Worcester campus is located adjacent to Saint Vincent Hospital and in close proximity to the University of Massachusetts Memorial Medical Center, and the medical school of the University of Massachusetts.

Manchester

MCPHS–Manchester became an entity of the University in May 2002 when MCPHS assumed responsibility for the Physician Assistant (PA) Studies program and its faculty and staff from Notre Dame College upon its closing. The campus building at 1260 Elm Street was purchased in November 2002, and the first class of PA students, faculty, and staff occupied the building in January 2003. A second building at 22 Fir Street, was purchased in fall 2009 and houses study space, several large classrooms, laboratories, a microcart that offers fresh grab and go style food options and drinks, and the "Hub," commonly known as the student lounge. In conjunction with the School of Pharmacy–Worcester, the accelerated Doctor of Pharmacy (PharmD) degree program admitted its first class in Manchester in the fall of 2004. A postbaccalaureate 16-month Bachelor of Science in Nursing degree program for individuals with a prior baccalaureate in another field admitted its first cohort in September 2007. A 24-month Master of Science in Occupational Therapy for individuals with a bachelor degree in another field admitted its first cohort in September 2016.

Manchester is New Hampshire's largest city and is the center of the state's diversified technology and service economy, which developed in response to the decline of the mill dynasty in the 1930s. The University is situated parallel to the historic Amoskeag Mills, which house educational institutions, businesses, and global technology companies.

Facilities

Boston, MA Campus Facility Information

Ronald A. Matricaria Academic and Student Center
To accommodate the growing number of students as well as the growth in program offerings, MCPHS added the 93,000-square-foot Ronald A. Matricaria Academic and Student Center on the Longwood campus in 2004. The Center preserves the signature façade and columns of the George Robert White building within a dramatic glass atrium while enhancing the University's capacity for teaching, scholarly research, and student development. The building features:

- laboratory space for chemistry, professional pharmacy practice, and pharmaceutics;
- a library, making possible state-of-the-art learning and information resources;
- two floors of apartment-style student residence space;
- two office suites;
- twelve large, modern classrooms; and
- extensive quiet study areas and several group study rooms.

George Robert White Building
Constructed through the generosity of Boston philanthropist George Robert White, the building bearing his name houses administrative and faculty offices, classrooms, laboratories, lecture halls, White Hall, and the Forsyth Dental Hygiene Clinic. The state-of-the-art dental hygiene clinic and teaching laboratory opened in 2005 and, occupying a large portion of the first floor, is named for benefactor and Forsyth alumna Esther M. Wilkins DH '39, DMD.

In addition to the dental hygiene clinic, the White Building houses several teaching and research laboratories, multiple classrooms, and faculty and administrative office suites. In 2009, the Center for Academic Success and Enrichment was created to house an array of academic support services in a renovated suite on the first floor of this historic building. In 2011, a state-of-the-art diagnostic medical imaging suite was completed to support the University's Diagnostic Medical Sonography program—the first in Massachusetts to offer a bachelor's degree in this discipline.

John Richard Fennell Building and Theodore L. Iorio Research Center
This building is an eight-story, mixed-use facility of approximately 230,000 square feet, completed in 1996. The John Richard Fennell Building occupies the east end; the west end is the Theodore L. Iorio Research Center. This structure offers classrooms, conference rooms, the Cardinal lounge, faculty offices, a residence hall, a coffee shop, and underground parking for faculty and staff. The Rombult Atrium adjoining the White Building is used for group study and social events.

Several research and teaching laboratories also are housed in the building, including laboratories for anatomy and physiology, biology and microbiology, cell culture, biology research, physiology research, pharmacology research, behavioral and neuropharmacology, chemistry, physics, and nuclear medicine. The Channing Laboratory division of Brigham and Women's Hospital occupies the building's west end through a long-term lease arrangement.

Henrietta DeBenedictis Library, Boston
The library occupies the second floor of the Matricaria Academic and Student Center and provides open and comfortable seating areas to accommodate various styles of student study, including group study rooms.

The Henrietta DeBenedictis Library maintains research-level collections in pharmacy, pharmacy education, and drug information, as well as core collections in clinical medicine, nursing, and the allied health sciences. Most of the collections have been converted into an electronic format, enabling users to access material remotely and from all three campuses. More than 49,000 journals are made available through a combination of owned subscriptions and titles made accessible through the library's full-text databases. In addition to the electronic journal collections, the library has access to more than 202,000 e-books and 188 databases. Holdings are further extended through membership in the Fenway Library Organization (FLO), a group of 10 full-member libraries and 27 affiliate members that share resources and allows the MCPHS community to directly borrow material. In addition, FLO supports an online public catalog of more than one million volumes held by member institutions. Taking advantage of Boston's extensive research universities and colleges, the MCPHS libraries offer an interlibrary loan service that provides timely delivery of journal articles and books, usually at no cost to our students, faculty, and staff. Professional librarians offer on-campus and virtual reference and information literacy instruction.

Richard E. Griffin Academic Center
In 2009, the University opened the Richard E. Griffin Academic Center, at 670 Huntington Avenue. The center contains 50,000

square feet of classrooms, faculty and staff offices, teaching laboratories, a 250-seat auditorium, and a multifunction room. Students from all degree programs on the Boston campus attend classes in this facility. The upper floors of the six-story building house the University's Nursing, Physician Assistant Studies, and Medical Imaging and Therapeutics programs, as well as offices for Alumni, Advancement, Continuing Education, Community Relations, and the Center for Professional Career Development.

Brant House
The Brant House was created in 2002 by joining two adjacent historic three-story brownstone buildings into one building. The first and second floors, which are public floors, are used for receptions, meetings, and other events.

Cardinal Lounge
The Cardinal Lounge is a hub of student life on the MCPHS–Boston campus. Members of the MCPHS community use the Cardinal Lounge as a place to meet, study, and relax in a welcoming, supportive environment.

Dining Facilities
The University's main dining facility for the Boston campus is located a short walk across Palace Road and is situated above the MCPHS bookstore. The dining hall is shared with Massachusetts College of Art and Design and Wentworth Institute of Technology, and is housed in MassArt's Kennedy Building. A wide range of hot and cold entrées, salad bar offerings, and specialty foods are available for breakfast, lunch, and dinner. The facility is generally open year-round, with some reduction in hours during summer and holiday breaks. A Peet's Coffee & Tea is also housed in these premises.

Bookstore
The MCPHS Campus Store is located on Palace Road, across the street from the main campus, and serves both MCPHS and neighboring Massachusetts College of Art and Design. Renovated and expanded in 2009 and located in the lower level of MassArt's Kennedy Building, the bookstore stocks new and used MCPHS textbooks, reference books, insignia clothing, and other college-related items. mcphs.getugear.com

Computer Facilities
Beginning in the fall of 2021, students are required to have laptops by all academic programs. A limited number of computer kiosks are available to students across each of the campuses. The University also maintains a virtual technology center (VTC). Accessing the VTC from the Internet provides students with access to all the applications and resources available in the libraries and physical computer labs. All campuses have complete wireless coverage for convenient access to the Internet and email.

Public Transportation and Parking
Students may purchase monthly Massachusetts Bay Transportation Authority (MBTA) passes from the University at a discount. For more information, contact the Center for Campus Life at 617.732.2876.

There is no student parking on the Boston campus. For off-campus parking information, contact Public Safety at 617.732.2900.

Residence Halls
Fennell Hall adjoins the George Robert White building. It provides traditional corridor-style living arrangements with double, triple, and quad rooms. Each room is furnished with beds, dressers, wardrobes, desks, and desk chairs, and is equipped with wireless Internet. Students residing in Fennell have a mandatory full meal plan during the fall and spring semesters. Fennell is supervised by an Area Coordinator, who is a full-time professional staff member who lives on-campus, as well as five student resident assistants (one on each floor). The building has 24-hour security and houses first-year students.

Matricaria Residence Hall provides apartment-style living in two- to five-person apartments. Each unit has a common room with living area, a kitchen, a bathroom, and double and/or single bedrooms. The bedrooms are equipped with beds, dressers, wardrobes, desks, and desk chairs, as well as wireless Internet. The common room has a loveseat, chairs, occasional tables, dining table and chairs, and a kitchen with storage space. Students living in this apartment residence hall are required to purchase a partial meal plan but have the option to purchase a full meal plan. This building is supervised by an Area Coordinator, who is a live-in, full-time professional staff member as well as six student resident assistants (two on each floor). The building has 24-hour security.

University-sponsored housing also is provided in local Colleges of the Fenway (COF) residence halls. The Treehouse residence hall at Massachusetts College of Art and Design houses approximately 250 MCPHS residents. Students live in a suite-style layout with single, double, and triple bedrooms with a shared suite bathroom. The layout of the building lends itself to a creative and community-focused learning environment. Public areas include common space on most floors, a game room, group study rooms, laundry facilities, a fitness room, a vending area, and a lobby with 24-hour security. Treehouse is supervised by an Area Coordinator, who is a full-time professional staff member who lives on campus, as well as nine student resident assistants (one on each floor).

In a long-term partnership with Emmanuel College, a new residence hall containing beds for approximately 250 MCPHS students, opened in the fall of 2018. This 18-story tower features contemporary apartment-style living spaces. Two-bedroom apartments will house four people each with two bedrooms and two bathrooms, a full kitchen, a living room and in-unit washer and dryer. The

vibrant ground floor will serve as a common area for the whole community, with a café, convenience store, dance and fitness center, and study/gathering spaces.

All residence halls and University-sponsored housing house students and an area designated as a wellness-themed living-learning community. All residents have access to laundry facilities and each resident is assigned an individual mailbox. Students taking courses during the summer may apply for summer housing.

The Office of Residence Life assists students in identifying off-campus housing resources; see www.mcphs.edu/mcphs-life/boston/housing/off-campus. All questions regarding housing should be directed to the Office of Residence Life at 617.732.2866 or residencelife@mcphs.edu. For a description of the Boston residence halls, as well as additional information regarding residence life in Boston, refer to the website at www.mcphs.edu/mcphs-life/boston/housing.

Worcester, MA Campus Facility Information

Henrietta DeBenedictis Building
The Worcester campus opened in 2000 in a state-of-the-art facility located at 19 Foster Street, named after alumna and benefactor Henrietta DeBenedictis, which includes two auditoriums equipped for videoconferencing, classrooms, laboratories, the Blais Family Library, a student lounge, a help desk and study space, the Brant student services area, and faculty and staff offices.

Thomas Henry Borysek Living and Learning Center
The Thomas Henry Borysek Living and Learning Center, located at 25 Foster Street, contains administrative and faculty offices, a conference room, classrooms, a technology center, patient assessment and clinical simulation laboratories, and six floors of suite-style student housing (all with private bedrooms). The basement provides comfortable group study/ social (lounge) space for students. The first floor houses a 24-hour micromart that offers fresh grab and go style food options and drinks café/study space and wellness center. The wellness center has cardio and weight machines along with fitness on demand for access to yoga, spin, and a variety of other on demand classes. A portion of the ninth floor also houses the Fuller Conference Room, a spacious area designed for conferences, board meetings, receptions, and other University gatherings.

Lincoln Square Academic and Student Center
The Lincoln Square Academic and Student Center, located at 10 Lincoln Square, is a state-of-the-art facility that contains administrative and faculty offices, conference rooms, classrooms, clinical labs, an optometry clinic, an optical store, a dental hygiene clinic, the Physical Therapy Balance, Movement and Wellness center, a 24-hour café that offers fresh grab and go style food options and drinks, a quiet study space, a spacious event space, and seven floors of student housing. The center provides facilities for academic programs in physical therapy, physician assistant studies, occupational therapy, optometry, dental hygiene, and medical imaging.

Maher Academic Center
The Maher Academic Center at 40 Foster Street houses 30,000 square feet of academic and student space. Two 250-seat auditoriums and three “smart” classrooms feature the latest instructional technology and interactive videoconferencing capability. The street-level multipurpose laboratory includes a model pharmacy that simulates community and institutional practice environments. A student lounge, student meeting rooms, quiet study areas, and faculty and administrative offices complete the facility.

Academic Affairs – Academic Innovation & Academic Technology/Instructional Support
This building houses the staff members charged with new program development and academic technology/instructional support. Both units are divisions within Academic Affairs. There are also members of the School of Healthcare Business and the School of Professional Studies housed here. There is a small conference room on the first floor for staff groups at the Worcester campus.

19 Norwich Street
This building opened in Fall 2016 for the New England School of Acupuncture and houses classrooms, practice labs, student lounge, study space, and faculty and administrative offices. The Acupuncture Treatment Center occupies the first floor, where student interns offer acupuncture and herbal services to the public, closely supervised by senior faculty. A small store and herbal dispensary support students and providers.

Blais Family Library, Worcester
A branch of the Henrietta DeBenedictis Library, which is located on the Boston campus, the Blais Family Library contains a core collection of pharmacy, clinical medicine, optometry, acupuncture, occupational and physical therapy, dental hygiene, and nursing print material. Professional librarians provide reference and library instruction. Interlibrary loan and document delivery are available from Boston’s collections as well as from the collections of many New England medical and academic libraries.

The Blais Family Library is a member of the Academic and Research Collaborative, a consortium of 18 libraries including that of the University of Massachusetts Worcester Medical School, which participates in free cross-borrowing services.

Computer Facilities
Beginning in the fall of 2021, students are required to have laptops by all academic programs. A limited number of computer kiosks are available to students across each of the campuses. The University also maintains a virtual technology center (VTC). Accessing the VTC from the Internet provides students with access to all the applications and resources available in the libraries and physical computer labs. All campuses have complete wireless coverage for convenient access to the Internet and email.

Parking
Student parking on the MCPHS–Worcester and Manchester campuses is limited, provided based on availability, non-transferrable, and not guaranteed to any individual. Parking on campus is an additional fee that is charged per semester. Specific policies and procedures for parking are distributed upon assignment. For information, please contact the Residence Life Office at 508.373.5754 .

Residence Halls
The Thomas Henry Borysek Living and Learning Center (located at 25 Foster Street), with student residences on the fourth through ninth floors, offers apartment-, studio-, and suite-style housing options. All students enjoy the privacy of a single bedroom within an apartment/suite equipped with a kitchen. The building also has laundry, vending machines, two study rooms, and student mailboxes, and can accommodate 145 resident students. Three resident assistants reside in the building. Additionally, there are 24-hour security personnel. The building adjoins the Henrietta DeBenedictis Building (19 Foster Street), which includes the Blais Family Library; the residence halls are located directly above classrooms, study space, and administrative offices.

The Lincoln Square Academic and Student Center (located at 10 Lincoln Square), with student residences on the third through ninth floors, offers private bedrooms and bathrooms. Lincoln Square is a short three-block walk from the Foster Street end of campus. The building also houses a common kitchen, café, laundry facilities, vending machines, student mailboxes, classrooms, labs, faculty and administrative offices, a large meeting/event space, and a parking garage. The building can accommodate approximately 202 resident students. Four resident assistants reside in the building. Additionally, there are 24-hour security personnel.

The Lancaster Street Apartments (located at 7, 11, and 15 Lancaster Street) are located within 10 minutes of the Lincoln Square Academic and Student Center and the academic buildings on Foster Street and offer two-bedroom apartments with a shared bathroom. Students have the privacy of an individual bedroom and share the common areas such as the living room, kitchen, and bathroom with one roommate. There is on-site laundry for resident students. High-speed Internet and streaming services are provided. This building can accommodate 36 students. There is also one resident assistant residing in the living area.

The Apartments at 72 Salisbury Street are located within 10 minutes of the Lincoln Square Academic and Student Center and offer one- and two-bedroom apartments. Each apartment has personal bedrooms for each occupant and shared kitchen, living room, and bathroom for two-person apartments. These apartments have hardwood floors, laundry facilities on site, and one resident assistant assigned to the building.

The Apartments at 50 and 60 Salisbury Street are located within 10 minutes of the Lincoln Square Academic and Student Center, and offer single and two-person apartments with shared kitchen, living room, and bathroom(s). These very spacious apartments have unique features that vary between the specific apartments, including walk-in closets, second floors, patios, large kitchen areas, or living rooms. Each apartment is equipped with laundry machines. One full-time professional staff member resides in 50 Salisbury Street, and one resident assistant resides in 60 Salisbury Street.

The Apartments at 379 Main Street are located a block away from the Foster and Norwich Street academic buildings. There are student residences on the second-fifth floors of the building. All spaces are studio-style apartments with a private bathroom, a two-burner stovetop and a convection microwave oven. The building also houses common study spaces on each floor, student mailboxes and a laundry room. This building can accommodate 52 students. There is a part-time graduate assistant and one resident assistant residing in the living area.

Contact a member of the Residence Life staff, consisting of the Director of Residence Life (508.373.5628) or the Area Coordinator for Lincoln Square, Salisbury Street, and Lancaster Street (508.373.5642) on the Worcester campus for more information regarding Residence Life or visit the website at www.mcphs.edu/campuses/worcester/housing. For questions related to housing placement, the housing process or student parking, please contact the Administrative Coordinator for the Worcester campus at 508.373.5754.

Student Lounge
The National Association of Chain Drug Stores (NACDS) student lounge/café is located in the lower level of the Henrietta DeBenedictis Building (19 Foster Street). It contains student lockers and is a gathering place for students to meet, study, or have a meal in a relaxed atmosphere. Internet and email access are available.

Manchester, NH Campus Facility Information

Joseph F. and Francis P. Brant Academic and Student Center
Located in the heart of Manchester, New Hampshire, the Joseph F. and Francis P. Brant Academic and Student Center is a 33,000-square-foot, three-story space consisting of classrooms, a physical assessment laboratory, a clinical simulation laboratory, a professional pharmacy practice laboratory, a library / learning resource space, state-of-the-art videoconference classrooms linked to the Worcester campus, student lounge, seminar rooms, a Student Government office, a resource area, and faculty and staff offices.

The Brant Hub
Brant Hub is more than 15,000 square feet. The first floor houses a micromart that offers fresh grab and go style food options and drinks, several quiet study areas, the student lounge, a large Adirondack style fireplace, pediatric and adult labs, and Occupational Therapy, and Physician Assistant Studies faculty offices. The second floor includes two videoconference classrooms linked to the Worcester campus, and with an information monitor, chairs, and couches). Wireless Internet is available.

Library and Computer Facilities, Manchester
The library, a branch of the Henrietta DeBenedictis Library in Boston, contains a core collection of pharmacy, clinical medicine, occupational therapy, and nursing texts. Students have access to all of the Boston library's electronic resources, as well as interlibrary loan from Boston's collections and those of many New England medical and academic libraries. Reference and library instruction is provided by a professional librarian. The library is a member of the New Hampshire College and University Council, providing access to the collections of its member libraries.

The campus is equipped with wireless technology for convenient access to the Internet and email.

Laboratory Facilities
The patient assessment laboratory is a multifunction laboratory serving courses such as physical assessment, anatomy, and clinical medicine. The laboratory houses 14 physical assessment stations, small medical equipment, and anatomical models and specimens. The professional pharmacy practice / pharmaceutics laboratory simulates a working pharmacy to introduce students to pharmacy operations and the role of a pharmacist. The clinical simulation laboratory is designed to replicate a hospital environment and consists of six medical/surgical bays, one pediatric/infant bay, and two critical care units. Each bay contains a hospital bed, bedside table and chest, overhead lights, live medical gases at each station (vacuum, air, oxygen), and other patient-monitoring equipment. Sophisticated, computer-controlled simulated patients (adult and pediatric) are an important teaching aid in this lab.

The School of Occupational Therapy learning laboratories consist of a Sensory-Based Pediatric Lab, a Functional Living Adult Lab, and an Upper-Extremity Orthopedic Lab. The pediatric lab houses a 3-point sensory suspension system and multimodal sensory equipment. The adult lab houses a training kitchen and living space and a training bathroom. The upper-extremity lab houses Bioness equipment, splinting area, and a therapeutic exercise training station.

Parking
Student parking on the MCPHS–Manchester campus is limited, provided based on availability, and not guaranteed to any individual. Parking on campus is an additional fee that is charged per semester. For information, please contact the Administrative Coordinator at 508.373.5754.

Brant Student Lounge
The student lounge serves as the gathering place for students to study, converse, meet, share a meal, relax, and hold celebrations, and includes lockers, a small kitchen area, a large-screen TV, an information monitor, and comfortable chairs and couches.

Centers for Excellence

Massachusetts College of Pharmacy and Health Sciences has established seven Centers for Excellence that engage faculty, students, and staff from across MCPHS campuses, academic programs, and offices. Each advances an important aspect of the University's commitment to being a global leader in the life sciences and health professions education.

Center for Teaching and Learning

The Center for Teaching and Learning (CTL) works toward the goal of having all students and faculty engaged in transformative learning experiences that prepare students for careers that contribute to making a healthier, more equitable world. The Center supports faculty and their professional development to advance effective teaching and learning practices throughout the University. In this manner, it promotes student success through advancing use of evidence-based, innovative, high-impact teaching and learning practices

Center for Health Humanities

Since its founding in 2013, the Center for Health Humanities has had a core purpose: promote scholarship, pedagogy, community service, student activities, and advocacy in humanities disciplines as they contribute to the education and practice of healthcare professionals and to interdisciplinary understandings of illness, health, care, and wellness. This is achieved through supporting scholarly research in health humanities, facilitating collaboration within and without MCPHS, and enriching students' education. Initiatives of the Center include hosting Visiting Scholars in health humanities, sponsoring a lively annual speaker series, and organizing conferences, symposiums, and workshops that serve as catalysts for interdisciplinary and collaborative projects

Center for Health and Wellbeing

The Center for Health and Wellbeing affirms the foundational role of individual health and wellbeing in the strength and overall quality of the MCPHS Community in expressing its core values. It recognizes the exceptional skills and resources present within our Community and its members, while seeking methods and experiences to increase their resilience while reaching their potential. Support of the University Community's health and wellbeing allows all members to achieve their full potential and optimize their physical, mental, emotional and social health and wellbeing.

Center for International Studies

The Center for International Studies (CIS) is a network of individuals and departments that provides a spectrum of services to international students drawn to MCPHS from around the world, and to all students seeking educational and professional opportunities abroad. The Center focuses on student success and global engagement, from enrollment through all aspects of the academic experience, and encourages collaboration among students, faculty, and alumni in achieving an international perspective on healthcare education, research, and practice.

Center for Interprofessional Practice and Education

The Center for Interprofessional Practice and Education (CIPE) at MCPHS supports the University's vision of educating and training the next generation of collaborative healthcare leaders. Its overall goal is to integrate and centralize IPE initiatives throughout the University and to serve as a resource for all MCPHS students to engage in IPE practice, education, scholarship/research, and service. The CIPE provides infrastructure and support needed for positive outcomes for our students, the faculty/staff, and the institution as a whole. The Center for Interprofessional Practice and Education at MCPHS aims to unite campuses and prepare the next generation of healthcare leaders to collaborate in a team-based environment.

Center for Life Sciences

This Center advances the life sciences through research, career-minded education, and industry collaborations. Its primary commitment is to cultivate the next generation of leaders by creating an immersive environment that equips students with vital knowledge and skills for success in the life sciences industry. It is a central hub for transformative education, groundbreaking research, and collaborative initiatives. Through strategic partnerships with industry leaders, the Center seeks to push the boundaries of innovation, provide real-world student experiences, and establish our position as a leader in the global scientific community.

Center for Research and Discovery

The Center for Research and Discovery provides opportunities for undergraduate, graduate, and professional studies students across all MCPHS campuses to pursue discoveries that could have a lasting impact on their field. Student-faculty collaboration in mentored research experiences enriches students' academic experiences and cultivates the next generation of scientists and researchers. The Center's key programs include the Annual Student Research Conference, an annual Mini-Grant Program to support student-led research, and a ongoing Speaker Series.

DEGREE AND CERTIFICATE PROGRAMS

School of Arts and Sciences
Bachelor of Arts in Health Humanities
Bachelor of Science in Biotechnology
Bachelor of Science in Chemistry
Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry
Bachelor of Science in Health Psychology (4 Pathways)
- Bachelor of Science in Health Psychology, Occupational Therapy
- Bachelor of Science in Health Psychology, Physical Therapy
- Bachelor of Science in Health Psychology, Premedical
- Bachelor of Science in Health Psychology, Public Health

Bachelor of Science in Health Sciences* (4 Pathways)
- Bachelor of Science in Health Sciences, Occupational Therapy
- Bachelor of Science in Health Sciences, Dental Hygiene
- Bachelor of Science in Health Sciences, Acupuncture
- Bachelor of Science in Health Sciences, Physical Therapy
- Bachelor of Science in Health Sciences, Medical Imaging & Therapeutics Dual Degree
- Bachelor of Science in Health Sciences, Bachelor of Science in Nursing Dual Degree

Bachelor of Science in Health Sciences Completion*
Bachelor of Science in Medical and Molecular Biology (3 Pathways)
- Bachelor of Science in Medical and Molecular Biology, Clinical Research
- Bachelor of Science in Medical and Molecular Biology, Regulatory Affairs and Health Policy
- Bachelor of Science in Medical and Molecular Biology, Pharmacology

Bachelor of Science in Premedical Health Studies (4 Pathways)
- Bachelor of Science in Premedical Health Studies, Optometry
- Bachelor of Science in Premedical Health Studies, Osteopathic Medicine
- Bachelor of Science in Premedical Health Studies, Physician Assistant Studies
- Bachelor of Science in Premedical Health Studies, Veterinary Medicine

Bachelor of Science in Public Health (4 Pathways)
- Bachelor of Science in Public Health, Pre-Law
- Bachelor of Science in Public Health, Doctor of Physical Therapy
- Bachelor of Science in Public Health, Master of Acupuncture
- Bachelor of Science in Public Health, Occupational Therapy

Bachelor of Science in Public Health/ Master of Public Health*
Certificate of Advanced Graduate Studies in Health Sciences
Undergraduate Academic Bridge Program
Master of Health Sciences (MHS)*
Master of Science in Pharmaceutical Chemistry
Master of Public Health*
Graduate Certificate in Public Health*
Doctor of Health Sciences (DHS)*

Forsyth School of Dental Hygiene
Bachelor of Science in Dental Hygiene (Accelerated)
Bachelor of Science in Predental/Dental Hygiene (Accelerated)
Bachelor of Science in Dental Hygiene (Fast Track)
Bachelor of Science in Dental Hygiene Completion*
AS to MS in Dental Hygiene Bridge Program*
Master of Science in Dental Hygiene*
Graduate Certificate in Oral Health Professions Education*

School of Healthcare Business
Bachelor of Science in Data Science & Health Analytics
Bachelor of Science in Data Science and Biotechnology Research & Development
Bachelor of Science in Healthcare Management
Bachelor of Science in Healthcare Management Completion*
Bachelor of Science in Health Information Management & Technology
Master of Business Administration in Healthcare Management*
Master of Business Administration in Health Technology
Master of Science in Clinical Management*

Master of Science in Data Science
Master of Science in Health Informatics*
Doctor of Healthcare Administration (DHA)
Doctor of Science in Physician Assistant Studies (DScPAS)*
Doctor of Pharmacy/Master of Business Administration in Healthcare Technology
Doctor of Pharmacy/Master of Science in Health Informatics
Certificate in Healthcare Innovation & Leadership
Certificate in Quality Assurance & Quality Control
Graduate Certificate in Clinical Informatics
Graduate Certificate in Health Data Analytics and Intelligence
Graduate Certificate in Clinical Management
Graduate Certificate in Healthcare Management
Graduate Certificate in AI in Healthcare

School of Medical Imaging and Therapeutics
Bachelor of Science in Diagnostic Medical Sonography-General (Accelerated)
Bachelor of Science in Diagnostic Medical Sonography-General (Fast Track)
Bachelor of Science in Diagnostic Medical Sonography-General (Completion Program)
Bachelor of Science in Diagnostic Medical Sonography Online Completion Program*
Bachelor of Science in Diagnostic Medical Sonography-Echocardiography (Accelerated)
Bachelor of Science in Diagnostic Medical Sonography-Echocardiography (Fast Track)
Bachelor of Science in Diagnostic Medical Sonography-Echocardiography (Completion Program)
Bachelor of Science in Magnetic Resonance Imaging (Accelerated)
Bachelor of Science in Magnetic Resonance Imaging (Fast Track)
Bachelor of Science in Nuclear Medicine Technology (Accelerated)
Bachelor of Science in Nuclear Medicine Technology (Fast Track)
Bachelor of Science in Radiation Therapy
Bachelor of Science in Radiation Therapy (Fast Track)
Bachelor of Science in Radiography (Accelerated)
Bachelor of Science in Radiography (Fast Track)
Bachelor of Science in Radiography, Physician Assistant Pathway
Bachelor of Science in Respiratory Therapy (Degree Completion)
Advanced Certificate in Computed Tomography (CT)
Advanced Certificate in Magnetic Resonance Imaging (MRI)*
Advanced Certificate in Mammography*
Advanced Certificate in Nuclear Medicine Technology (NMT)*
Master of Science in Radiologic and Imaging Sciences

School of Nursing
Bachelor of Science in Nursing (Accelerated)
Bachelor of Science in Nursing (Postbaccalaureate)
Bachelor of Science in Nursing Completion (RN to BSN)*
Bachelor of Science in Health Sciences, BSN Dual Degree*
Associate Degree (AD) to Master of Science in Nursing Bridge Program*
Certificate of Advanced Graduate Studies in Nursing (Family Nurse Practitioner Track)*
Certificate of Advanced Graduate Studies in Nursing (Psychiatric/Mental Health Nurse Practitioner Track)*
Master of Science in Nursing (Family Nurse Practitioner Track)*
Master of Science in Nursing (Psychiatric Mental Health Nurse Practitioner Track)*
Doctor of Nursing Practice (DNP)*

School of Occupational Therapy
Master of Science in Occupational Therapy

School of Optometry
Doctor of Optometry

School of Physical Therapy
Doctor of Physical Therapy

New England School of Acupuncture
Master of Acupuncture
Master of Acupuncture and Chinese Herbal Medicine
Doctor of Acupuncture Completion Program*

Doctor of Acupuncture, Master of Acupuncture Dual Degree
Certificate of Advanced Graduate Study in Chinese Herbal Medicine
Certificate in Japanese Acupuncture Studies

School of Pharmacy – Boston
Doctor of Pharmacy
Non-Traditional Doctor of Pharmacy
Doctor of Philosophy in Medicinal Chemistry
Doctor of Philosophy in Pharmaceutical Economics and Policy
Doctor of Philosophy in Pharmaceutics
Doctor of Philosophy in Pharmacology
Doctor of Pharmacy/Master of Business Administration in Healthcare Technology Dual Degree
Doctor of Pharmacy/Master of Science in Clinical Investigation and Development Dual Degree
Doctor of Pharmacy/Master of Science in Clinical Research Dual Degree
Doctor of Pharmacy/Master of Science in Health Informatics Dual Degree
Doctor of Pharmacy/Master of Science in Regulatory Affairs and Health Policy Dual Degree
Doctor of Pharmacy/Master of Science in Regulatory Sciences Dual Degree
Bachelor of Science in Pharmaceutical Business
Bachelor of Science in Pharmaceutical Sciences
Bachelor of Science in Pharmacology and Toxicology
Bachelor of Science in Pharmacy and Life Sciences
Certificate in Advanced Pharmacy Practice Studies
Graduate Certificate in Clinical Research*
Graduate Certificate in Health Policy*
Graduate Certificate in Regulatory Affairs*
Graduate Certificate in Clinical Development of Drugs and Devices
Graduate Certificate in Health Economics & Outcomes Research
Graduate Certificate in Health and Pharmacoepidemiology
Master of Pharmaceutical Sciences
Master of Science in Clinical Investigation and Development
Master of Science in Clinical Research*
Master of Science in Medicinal Chemistry
Master of Science in Medicinal Chemistry - Thesis
Master of Science Pharmaceutical Economics and Policy*
Master of Science in Pharmaceutics
Master of Science in Pharmaceutics - Thesis
Master of Science in Pharmacology
Master of Science in Pharmacology - Thesis
Master of Science in Regulatory Affairs and Health Policy*
Master of Science in Regulatory Sciences

School of Pharmacy – Worcester/Manchester
Doctor of Pharmacy (Accelerated)
Graduate Certificate in Medication Safety*
Bachelor of Science in Pharmacy and Life Sciences
Doctor of Pharmacy/Master of Science in Clinical Investigation and Development Dual Degree
Doctor of Pharmacy/Master of Science in Regulatory Sciences Dual Degree
Doctor of Pharmacy/Master of Business Administration in Healthcare Technology Dual Degree
Doctor of Pharmacy/Master of Science in Regulatory Affairs and Health Policy Dual Degree
Doctor of Pharmacy/Master of Science in Clinical Research Dual Degree

School of Physician Assistant Studies – Boston
Master of Physician Assistant Studies

School of Physician Assistant Studies – Worcester/Manchester
Master of Physician Assistant Studies (Accelerated)

School of Professional Studies
Graduate Certificate in Precision Medicine*
Undergraduate Certificate in Biopharmaceutical Industry Fundamentals*
Undergraduate Certificate in Pre-Dental Science*
Certificate in Introductory Life Sciences
Bachelor of Science in Life Sciences

Online Programs ***(designated above with an *)***
Advanced Certificate in Computed Tomography
Advanced Certificate in Magnetic Resonance Imaging
Advanced Certificate in Mammography
Advanced Certificate in Nuclear Medicine Technology
Bachelor of Science in Dental Hygiene Completion
Bachelor of Science in Healthcare Management Completion
Bachelor of Science in Health Sciences
Bachelor of Science in Health Sciences Completion
Bachelor of Science in Health Sciences to BSN (Postbaccalaureate)
Bachelor of Science in Diagnostic Medical Sonography Online Completion Program
Bachelor of Science in Nursing Completion (RN to BSN)
Certificate of Advanced Graduate Studies in Nursing (Family Nurse Practitioner Track)
Certificate of Advanced Graduate Studies in Nursing (Psychiatric Mental Health Nurse Practitioner Track)
Graduate Certificate in Clinical Research
Graduate Certificate in Health Policy
Graduate Certificate in Medication Safety
Graduate Certificate in Public Health
Graduate Certificate in Regulatory Affairs
Graduate Certificate in Healthcare Management
Graduate Certificate in Oral Health Professions Education
Graduate Certificate in Clinical Management
Undergraduate Certificate in Biopharmaceutical Industry Fundamentals
Undergraduate Certificate in Pre-Dental Science
Master of Business Administration in Healthcare Management
Master of Health Sciences
Master of Public Health
Master of Science in Clinical Management
Master of Science in Health Informatics
Master of Science Personalized Medicine
AS to MS in Dental Hygiene Bridge Program
Master of Science in Clinical Research
Master of Science in Dental Hygiene
Associate Degree (AD) to Master of Science in Nursing Bridge Program
Master of Science in Nursing (Family Nurse Practitioner Track)
Master of Science in Nursing (Psychiatric Mental Health Nurse Practitioner Track)
Master of Science in Pharmaceutical Economics and Policy
Master of Science in Regulatory Affairs and Health Policy
Doctor of Acupuncture Completion Program
Doctor of Pharmacy (Non-Traditional Pathway)
Doctor of Healthcare Administration (DHA)
Doctor of Health Sciences (DHS)
Doctor of Nursing Practice (DNP)
Doctor of Science in Physician Assistant Studies

COLLABORATIONS AND AGREEMENTS

Interinstitutional Cooperation

Colleges of the Fenway (COF)
MCPHS is one of five institutions of higher education in the Longwood Medical and Academic Area of Boston that joined together in 1996 to form a consortium that includes MCPHS, Emmanuel College, Massachusetts College of Art and Design, Simmons University, and Wentworth Institute of Technology. The five institutions, each with its own unique mission, offer a world of learning and experience on and off campus. Collectively, the COF represent more than 20,000 undergraduate and graduate students, more than 700 full-time faculty, and 2,300 course offerings. Shared initiatives among the five institutions are aimed at enhancing the quality of education, enriching student experiences, and reducing costs through the sharing of resources. Collaborative student opportunities include cross-registration, which broadens access to courses otherwise not available on the student's home campus; intramurals; performing arts; student life programs and activities; sustainability initiatives, and study abroad opportunities. www.colleges-fenway.org

Higher Education Consortium of Central Massachusetts (HECCMA)
MCPHS is one of 11 institutions of higher education in the central Massachusetts area that joined together to form a consortium that includes Anna Maria College, Assumption College, Clark University, College of the Holy Cross, Cummings School of Veterinary Medicine (Tufts University), Nichols College, Quinsigamond Community College, UMass Chan Medical School, Worcester Polytechnic Institute, and Worcester State University. HECCMA's 11 member colleges and universities offer a diverse set of courses in many academic disciplines, adding to the rich cultural fabric of Worcester and Central Massachusetts. Students can take advantage of opportunities for sharing courses and facilities. This partnership provides opportunities to participate in college career fairs and internships through member institutions.

Massachusetts Independent College Transfer Guarantee (Massachusetts Guarantee)
MCPHS, the New England Board of Higher Education Association of Independent Colleges and Universities in Massachusetts and the Massachusetts Association of Community Colleges have established a formal articulation agreement with all Massachusetts Community Colleges. This program begins with two years at a Massachusetts Community College, earning any Associates degree, and concludes with two years completing one of the following programs: Health Humanities, Healthcare Management, Health Psychology, Health Science, or Public Health on the MCPHS-Boston campus. The curriculum that Massachusetts Community Colleges offers is a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, totaling 60 credits allowing for direct entry in junior status for students who qualify.

New Hampshire College and University Council (NHCUC)
NHCUC is a consortium of 14 public and private institutions of higher education in the state of New Hampshire. MCPHS joined the council when it opened its Manchester, New Hampshire, campus in 2002. The council's mission is the advancement of higher education in the state through collaborative efforts among the 22 colleges and universities and the enhancement of educational opportunities for the more than 70,000 students who attend the council's member institutions. The council works to coordinate collaborative initiatives among academic, library, and informational technology offices; sponsors professional development conferences for faculty; and promotes awareness and understanding of higher education among legislators and the public. www.nhcuc.org

Institutional Agreements

MCPHS has agreements with academic institutions that offer a seamless pathway of study from a variety of majors including: Health Psychology, Health Sciences, Medical and Molecular Biology, Pharmaceutical Business, Premedical Health Studies, or Public Health majors to several graduate and professional degree programs (see details in the larger Institutional Agreements section of this catalog or at www.mcphs.edu).

Prospective first-year students should speak with an admission counselor at the University about prerequisites for admission into majors for these programs.

Entry from MCPHS to Other Health Professions Programs

Drexel University College of Medicine (Philadelphia, Pennsylvania)
Interdepartmental Medical Science (IMS)
Drexel University College of Medicine and MCPHS have an affiliation that provides reserved admission to MCPHS Premedical Health Studies students who wish to complete the certificate in Interdepartmental Medical Science. Established in 1981, the Interdepartmental Medical Science (IMS) program has been successful in helping students gain entry into U.S. medical schools. The IMS program offers an interdisciplinary curriculum that integrates first-year medical school basic science courses and delivers them through clinical system-based modules. Students apply to medical or other health professional schools either during or after completion of the IMS program. Successful completion of the coursework (B grades or better) demonstrates to health professional schools the student's ability to handle medical school coursework.

Lake Erie College of Osteopathic Medicine (Erie, Pennsylvania, or Bradenton, Florida)
Doctor of Osteopathic Medicine (DO)
MCPHS and Lake Erie College of Osteopathic Medicine (LECOM) have established an early acceptance program agreement whereby MCPHS students are enrolled jointly by MCPHS and LECOM to facilitate the admission of MCPHS students into LECOM's Doctor of Osteopathic Medicine program. LECOM will interview students prior to their enrollment at MCPHS or within the first two years of study at MCPHS. Students who interview successfully will be offered a provisional acceptance to LECOM's Doctor of Osteopathic Medicine program. Provisionally accepted students may not apply to any other medical school. Application to another medical school will result in the loss of the student's provisional acceptance. Upon meeting the criteria for final acceptance, students will matriculate at the LECOM campus of their choice: Erie, Pennsylvania, or Bradenton, Florida.

The early acceptance program offers a "4+4" track. Students who were offered a provisional acceptance letter from LECOM and meet the LECOM eligibility requirements of a 3.4 cumulative GPA and 3.3. cumulative science GPA will proceed to the LECOM Doctor of Osteopathic Medicine program after completing their undergraduate degree in Premedical Health Studies or Medical and Molecular Biology at MCPHS .

Lake Erie College of Osteopathic Medicine (Bradenton, Florida)
Doctor of Dental Medicine (DMD)
MCPHS and Lake Eric College of Osteopathic Medicine (LECOM) have established an early acceptance program agreement for MCPHS students into LECOM's Doctor of Dental Medicine program. LECOM will interview the student prior to enrollment at MCPHS or within the first two years of study at MCPHS. Students interviewing successfully will be offered a provisional acceptance to LECOM's Doctor of Dental Medicine program. Provisionally accepted students may not apply to any other dental school. Application to another dental school will result in the loss of the student's provisional acceptance. Upon meeting the criteria for final acceptance, students will matriculate at the LECOM Bradenton, Florida, campus. Students complete four years of undergraduate education at MCPHS and four years of dental school education at LECOM and its associated clinical training sites.

St. George's University School of Veterinary Medicine (Grenada)
Doctor of Veterinary Medicine (DVM)
MCPHS and St. George's University (SGU) School of Veterinary Medicine have an affiliation that offers qualified students the opportunity to pursue a career in veterinary medicine at Saint George's University, following successful graduation from MCPHS . St. George's School of Veterinary Medicine program offers students a unique, innovative, international approach to veterinary medicine. Great emphasis is placed upon clinical instruction as a method of formulating basic science curriculum into clinical practice with the use of simulation models, case-based teaching and outstanding student to faculty ratios. With state-of-the-art teaching and laboratory facilities, students receive exemplary experiences in preparation for clinical training rotations and for general veterinary practice following graduation. Students receive extensive opportunities designed to foster the understanding and confidence required for success as veterinary professionals, including research, practice management and responsibilities of veterinarians to local and global public health.

The program offers three years of didactic coursework in basic sciences and introductory clinical work in medicine and surgery in Grenada, followed by a fourth year of clinical training at one of twenty-nine AVMA-Accredited affiliated veterinary schools in the

United States, United Kingdom, Ireland, Canada and Australia.

William James College (Newton, Massachusetts)
MCPHS and William James College (WJC) have established an agreement whereby WJC will offer an interview and consider the applications of up to ten qualified MCPHS students per year, from any academic program, for their Master of Arts programs (Clinical Mental Health Counseling MA, Applied Behavior Analysis MA, School Psychology MA, Organizational Psychology MA) and Doctor of Psychology in Clinical Psychology (PsyD) program.

A.T. Still University / Kirksville College of Osteopathic Medicine (Kirksville, Missouri)
Doctor of Osteopathic Medicine (DO)
A.T. Still University / Kirksville College of Osteopathic Medicine (KCOM) and MCPHS have an affiliation that provides reserved admission to KCOM for highly qualified MCPHS students through the Still Scholars preosteopathic medicine program. Students are admitted to KCOM at the beginning of their third year at MCPHS. If they continue to meet KCOM admission requirements, the MCAT exam is waived and, following completion of the four-year Bachelor of Science in Premedical Health Studies degree, they have a reserved space at KCOM. This professional pathway provides an exceptional opportunity for the highly motivated high school student with a professional goal of becoming a Doctor of Osteopathic Medicine. A.T. Still founded the Kirksville College of Osteopathic Medicine in the late nineteenth century; it is the oldest school of osteopathic medicine in the United States.

The program allows for completion of the Bachelor of Science degree at MCPHS in four years and the doctor of osteopathic medicine degree at A.T. Still University / Kirksville College of Osteopathic Medicine in another four years. The osteopathic curriculum involves four years of postbaccalaureate academic study. Reflecting the osteopathic philosophy, the curriculum emphasizes preventive medicine and holistic patient care. Medical students learn to use osteopathic principles and techniques for the diagnosis and treatment of disease.

Entry from Other Institutions to MCPHS Health Professions Programs

Assumption College (Worcester, Massachusetts)
Nursing (BSN)
Assumption College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Assumption College, earning a Bachelor of Science degree in Biology (or related field), and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Assumption College offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Assumption, and the specified preprofessional coursework for entry to the BSN program.

Optometry (OD)
Assumption College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Assumption College, earning a bachelor of arts degree in biology (or related field), and concludes with four years in the Doctor of Optometry (OD) program on the MCPHS–Worcester campus. The curriculum at Assumption College offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Assumption, and the specified preprofessional coursework for entry to the OD program.

Pharmacy (PharmD)
Assumption College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Assumption College, earning a bachelor of arts degree in biology (or related field), and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Assumption College offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Assumption, and the specified preprofessional coursework for entry to the PharmD program.

Physical Therapy (DPT)
Assumption College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Assumption College, earning a bachelor of arts degree in biology (or related field), and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at Assumption College offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Assumption, and the specified preprofessional coursework for entry to the DPT program.

Physician Assistant Studies (MPAS)
Assumption College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Assumption College, earning a bachelor of arts degree in biology (or related field), and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Assumption College offers a blend of liberal arts and sciences that meets the MCPHS general

education curriculum requirements, the specific degree requirements at Assumption, and the specified preprofessional coursework for entry to the MPAS program.

Bunker Hill Community College (Boston, Massachusetts)
Pharmacy (PharmD)
Bunker Hill Community College (BHCC) and MCPHS - School of Pharmacy Worcester/Manchester have a formal affiliation agreement that begins with two years at BHCC, earning an Associate in Science (A.S.) Degree in Biological Sciences: Medical Professions, and guarantees an interview to qualified BHCC students for a three-year accelerated Doctor of Pharmacy degree program.

Clark University (Worcester, Massachusetts)
Nursing (BSN)
Clark University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Clark University, earning a Bachelor of Arts degree in Biology (or related field), and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Worcester campus. The curriculum at Clark University offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Clark University, and the specified preprofessional coursework for entry to the BSN program.

Pharmacy (PharmD)
Clark University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Clark University, earning a Bachelor of Arts degree in Biology (or related field), and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester campus. The curriculum at Clark University offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Clark University, and the specified preprofessional coursework for entry to the PharmD program.

Physician Assistant Studies (MPAS)
Clark University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Clark University, earning a Bachelor of Arts degree in Biology (or related field), and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester campus. The curriculum at Clark University offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Clark University, and the specified preprofessional coursework for entry to the MPAS program.

College of the Holy Cross (Worcester, Massachusetts)
Nursing (BSN)
College of the Holy Cross and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Holy Cross, earning a Bachelor of Arts degree in Biology (or related field), and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Worcester campus. The curriculum at Holy Cross offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Holy Cross, and the specified preprofessional coursework for entry to the BSN program.

Pharmacy (PharmD)
College of the Holy Cross and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Holy Cross, earning a Bachelor of Arts degree in Biology (or related field), and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester campus. The curriculum at Holy Cross offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Holy Cross, and the specified preprofessional coursework for entry to the PharmD program.

Physical Therapy (DPT)
College of the Holy Cross and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Holy Cross, earning a Bachelor of Arts degree in Biology (or related field), and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at Holy Cross offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Holy Cross, and the specified preprofessional coursework for entry to the DPT program.

Physician Assistant Studies (MPAS)
College of the Holy Cross and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Holy Cross, earning a Bachelor of Arts degree in Biology (or related field), and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Holy Cross offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Holy Cross, and the specified preprofessional coursework for entry to the MPAS program.

Drexel University (Philadelphia, PA)
Pharmacy (PharmD)
Drexel University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Drexel University, earning a Bachelor's degree in biology (or related field), and concludes with three years in the Doctor of Pharmacy (PharmD) program on the MCPHS Worcester campus. The curriculum at Drexel University offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Drexel, and the specified preprofessional coursework for entry into the PharmD program.

Framingham State University (Framingham, Massachusetts)
Pharmacy (PharmD)
Framingham State University (FSU) and MCPHS have a formal affiliation agreement that begins with completion of a four-year Bachelor of Science in Biology, Biochemistry or Chemistry Degree program, and guarantees an interview to qualified students for a three-year accelerated Doctor of Pharmacy degree program at MCPHS on the Worcester or Manchester campuses.

Manchester Community College (Manchester, New Hampshire)
Pharmacy (PharmD)
Manchester Community College (MCC) and MCPHS - School of Pharmacy Worcester/Manchester have a formal affiliation agreement that begins with two years at MCC, earning an Associate in Science (A.S.) Degree in Life Science or Associates of Arts (A.A) in Liberal Arts and guarantees an interview to qualified MCC students for a three-year accelerated Doctor of Pharmacy degree program.

Mount Wachusett Community College (Gardner, Massachusetts)
Dental Hygiene (MSDH)
Mount Wachusett Community College (MWCC) and MCPHS have a formal affiliation agreement that admits students into the Master of Science in Dental Hygiene at MCPHS upon successful completion of an Associate of Science (A.S.) in Dental Hygiene degree from MWCC and successful completion of all prerequisite requirements. MWCC students must complete all application requirements as outlined on the MCPHS website.

New England College (Henniker, New Hampshire)
Nursing (BSN)
New England College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with 6 semesters at New England College in the Health Science major and concludes with 4 semesters in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS-Manchester campus. Upon successful completion of all the requirements, students will earn a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at New England College, and the specified preprofessional coursework for entry to the BSN. Program.

Pharmacy (PharmD)
New England College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at New England College, earning a Bachelor of Science degree and completing successfully all courses in the prepharmacy program, and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Manchester campus. The curriculum at New England College offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at New England College, and the specified preprofessional coursework for entry to the PharmD program.

Physician Assistant Studies (MPAS)
New England College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at New England College, earning a Bachelor of Science degree and completing successfully all courses in the pre–physician assistant studies program, and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Manchester campus. The curriculum at New England College offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at New England College, and the specified preprofessional coursework for entry to the MPAS program.

Quinsigamond Community College (Worcester, Massachusetts)
Nursing (MSN)
Quinsigamond Community College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with earning an Associate of Science degree in Nursing and concludes with three years in the RN to MSN Bridge program at MCPHS Online. Qualified students must meet all prerequisite and GPA requirements and have a current RN license prior to matriculation in order to be eligible for entry to the MSN program.

Dental Hygiene (DH)

Quinsigamond Community College and MCPHS have a formal affiliation agreement that admits students into the Fast Track BS in Dental Hygiene program at MCPHS Worcester upon successful completion of an AS degree from QCC and successful completion of all prerequisite requirements. QCC students must complete all application requirements as outlined on the MCPHS website. Matriculation into the DH program is offered only for fall entry.

Diagnostic Medical Sonography (DMS)
Quinsigamond Community College and MCPHS have a formal affiliation agreement that admits students into the Fast Track BS in Diagnostic Medical Sonography (DMS) program at MCPHS Worcester upon successful completion of an AS degree from QCC and successful completion of all prerequisite requirements. QCC students must complete all application requirements as outlined on the MCPHS website. Matriculation into the DMS program is offered only for fall entry.

Pharmacy (PharmD)
Quinsigamond Community College and MCPHS have a formal affiliation agreement that guarantees an on-campus faculty interview, with priority consideration in the final admission process, for the PharmD program at MCPHS Worcester upon successful completion of an AS degree from QCC and successful completion of all prerequisite requirements. QCC students must complete all application requirements as outlined on the MCPHS website. Matriculation into the PharmD program is offered only for fall entry.

Saint Anselm College (Manchester, New Hampshire)
Nursing (BSN)
Saint Anselm College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Saint Anselm, earning a Bachelor of Arts degree in Biology (or related field), and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Saint Anselm offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Saint Anselm, and the specified preprofessional coursework for entry to the BSN program.

Optometry (OD)
Saint Anselm College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Saint Anselm, earning a Bachelor of Arts degree in Biology (or related field), and concludes with four years in the Doctor of Optometry (OD) program on the MCPHS–Worcester campus. The curriculum at Saint Anselm offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Saint Anselm, and the specified preprofessional coursework for entry to the OD program.

Pharmacy (PharmD)
Saint Anselm College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Saint Anselm, earning a Bachelor of Arts degree in Biology (or related field), and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Saint Anselm offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Saint Anselm, and the specified preprofessional coursework for entry to the PharmD program.

Physical Therapy (DPT)
Saint Anselm College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Saint Anselm, earning a Bachelor of Arts degree in Biology (or related field), and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at Saint Anselm offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Saint Anselm, and the specified preprofessional coursework for entry to the DPT program.

Physician Assistant Studies (MPAS)
Saint Anselm College and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Saint Anselm, earning a Bachelor of Arts degree in Biology (or related field), and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Saint Anselm offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Saint Anselm, and the specified preprofessional coursework for entry to the MPAS program.

Salem State University (Salem, Massachusetts)
Optometry (OD)
Salem State University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Salem State, earning a Bachelor's degree in biology, chemistry, or related field, and concludes with four years in the Doctor of Optometry (OD) program on the MCPHS–Worcester campus. The curriculum at Salem State offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements

at Salem State, and the specified preprofessional coursework for entry to the OD program.

Pharmacy (PharmD)
Salem State University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Salem State, earning a Bachelor's degree in biology, chemistry, or related field, and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Salem State offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Salem State, and the specified preprofessional coursework for entry to the PharmD program.

Physical Therapy (DPT)
Salem State University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Salem State, earning a Bachelor's degree in biology, chemistry, or related field, and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at Salem State offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Salem State, and the specified preprofessional coursework for entry to the DPT program.

Physician Assistant Studies (MPAS)
Salem State University and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at Salem State, earning a Bachelor's degree in biology, chemistry, or related field, and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at Salem State offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at Salem State, and the specified preprofessional coursework for entry to the MPAS program.

Southern New Hampshire University (Manchester, New Hampshire)
Pharmacy (PharmD)
Southern New Hampshire University (SNHU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with three years at SNHU in the Biology track and concludes with the three-year Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester or MCPHS–Manchester campus. Biology track students are also eligible for MCPHS—Boston traditional Pharmacy program after 3 years of study at SNHU and 4 years in MCPHS—Boston. After successfully completing the first year of required coursework in the PharmD program at MCPHS Boston, Worcester, or Manchester—students will earn a Bachelor of Science (BS) degree in Biology from SNHU. The first three years at SNHU offer a blend of liberal arts and sciences that meets both the MCPHS general education curriculum requirements and the specific science track requirements at SNHU. MCPHS provides the coursework needed for students to earn the BS degree from SNHU at the end of the first year of professional study, as well as the professional education required to earn the Doctor of Pharmacy degree at MCPHS.

Nursing (BSN)
Southern New Hampshire University (SNHU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at SNHU, earning a Bachelor of Science degree in Biology, and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Manchester campus. The curriculum at SNHU offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at SNHU, and the specified preprofessional coursework for entry to the BSN program.

Springfield Technical Community College (Springfield, Massachusetts)
Pharmacy (PharmD)
Springfield Technical Community College (STCC) and MCPHS - School of Pharmacy Worcester/Manchester have a formal affiliation agreement that begins with two years at STCC, earning an Associate in Science (A.S.) Degree in Engineering or Science Transfer and guarantees an interview to qualified MCC students for a three-year accelerated Doctor of Pharmacy degree program.

University of Maine (Orono, Maine)
Nursing (BSN)
University of Maine and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at University of Maine, earning a Bachelor of Science degree in Biology (or related field), and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at University of Maine offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at University of Maine, and the specified preprofessional coursework for entry to the BSN program.

Pharmacy (PharmD)
University of Maine and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at University of Maine, earning a Bachelor of Science degree in Biology (or related field), and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at University of Maine offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at University of Maine, and the specified preprofessional coursework for entry to the PharmD program.

Physician Assistant Studies (MPAS)
University of Maine and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at University of Maine, earning a Bachelor of Science degree in Biology (or related field), and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at University of Maine offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at University of Maine, and the specified preprofessional coursework for entry to the MPAS program.

University of Massachusetts—Amherst (Amherst, Massachusetts)
Physical Therapy (DPT)
University of Massachusetts—Amherst (UMASS Amherst) and MCPHS have a formal affiliation agreement that guarantees qualified students an interview for priority consideration into an articulated program that begins with four years at UMASS Amherst, earning a Bachelor of Science degree in Kinesiology, and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at Saint Anselm offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at UMASS Amherst, and the specified preprofessional coursework for entry to the DPT program.

University of New Hampshire at Manchester (Manchester, New Hampshire)
Pharmacy (PharmD)
University of New Hampshire at Manchester (UNH Manchester) and MCPHS–Manchester have a formal affiliation agreement that admits students into an articulated program that begins with three years of prepharmacy study at UNH Manchester and concludes with the three-year Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Manchester campus. After successfully completing the first year of required coursework in the PharmD program at MCPHS, students will earn a Bachelor of Science (BS) or Bachelor of Arts (BA) degree (as applicable) from UNH Manchester. The first three years at UNH Manchester offer a blend of liberal arts and sciences that meets both the MCPHS general education curriculum requirements and the specific science track requirements at UNH Manchester. MCPHS provides the coursework needed for the student to earn the BS or BA degree from UNH Manchester at the end of the first year of professional study, as well as the professional education required to earn the doctor of pharmacy degree at the end of three years at MCPHS–Manchester.

Physician Assistant Studies (MPAS)
University of New Hampshire at Manchester (UNH Manchester) and MCPHS–Manchester have a formal affiliation agreement that admits students into an articulated program that begins with four years at UNH Manchester, earning a Bachelor of Science (BS) or Bachelor of Arts (BA) degree (as applicable) and completing successfully all courses in the pre–physician assistant studies program, and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Manchester campus. The curriculum at UNH Manchester offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at UNH Manchester, and the specified preprofessional coursework for entry to the MPAS program.

Worcester Polytechnic Institute (Worcester, Massachusetts)
Optometry (OD)
Worcester Polytechnic Institute (WPI) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WPI, earning a Bachelor of Science degree in biology, chemistry, or a related field, and concludes with four years in the Doctor of Optometry (OD) program on the MCPHS–Worcester campus. The curriculum at WPI offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WPI, and the specified preprofessional coursework for entry to the OD program.

Pharmacy (PharmD)
Worcester Polytechnic Institute (WPI) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WPI, earning a Bachelor of Science degree in biology, chemistry, or a related field, and concludes with three years in the Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester campus. The curriculum at WPI offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WPI, and the specified preprofessional coursework for entry to the PharmD program.

Physical Therapy (DPT)
Worcester Polytechnic Institute (WPI) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WPI, earning a Bachelor of Science degree in biology, chemistry, or a related field, and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at WPI offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WPI, and the specified preprofessional coursework for entry to the DPT program.

Physician Assistant Studies (MPAS)
Worcester Polytechnic Institute (WPI) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WPI, earning a Bachelor of Science degree in biology, chemistry, or a related field, and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester campus. The curriculum at WPI offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WPI, and the specified preprofessional coursework for entry to the MPAS program.

Worcester State University (Worcester, Massachusetts)
Nursing (BSN)
Worcester State University (WSU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins at WSU with the completion of 80 credits toward a Bachelor of Science (BS) degree in Public Health at WSU and concludes with 16 months in the accelerated Bachelor of Science in Nursing (Postbaccalaureate) program on the MCPHS–Worcester or MCPHS–Manchester campus. Under this agreement, students will earn a BS in public health degree from WSU and a BSN degree from MCPHS after completion of the entire program. The curriculum at WSU offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WSU, and the specified preprofessional coursework for entry to the BSN program.

Optometry (OD)
Worcester State University (WSU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WSU, earning a Bachelor of Arts degree in Biology (or related field), and concludes with four years in the Doctor of Optometry (OD) program on the MCPHS–Worcester campus. The curriculum at WSU offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WSU, and the specified preprofessional coursework for entry to the OD program.

Pharmacy (PharmD)
Worcester State University (WSU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with three years at WSU in one of four science tracks—biology, biotechnology, chemistry, or natural science—and concludes with the three-year Doctor of Pharmacy (Accelerated PharmD) program on the MCPHS–Worcester or MCPHS–Manchester campus. After successfully completing the first year of required coursework in the PharmD program at MCPHS, students will earn a Bachelor of Science (BS) degree from WSU. The first three years at WSU offer a blend of liberal arts and sciences that meets both the MCPHS general education curriculum requirements and the specific science track requirements at WSU. MCPHS provides the coursework needed for students to earn the BS degree from WSU at the end of the first year of professional study, as well as the professional education required to earn the Doctor of Pharmacy degree at the end of three years at MCPHS.

Physical Therapy (DPT)
Worcester State University (WSU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WSU, earning a Bachelor of Arts degree in Biology (or related field), and concludes with three years in the Doctor of Physical Therapy (DPT) program on the MCPHS–Worcester campus. The curriculum at WSU offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WSU, and the specified preprofessional coursework for entry to the DPT program.

Physician Assistant Studies (MPAS)
Worcester State University (WSU) and MCPHS have a formal affiliation agreement that admits students into an articulated program that begins with four years at WSU, earning a Bachelor of Arts degree in Biology (or related field), and concludes with two years in the Master of Physician Assistant Studies (Accelerated MPAS) program on the MCPHS–Worcester or MCPHS–Manchester campus. The curriculum at WSU offers a blend of liberal arts and sciences that meets the MCPHS general education curriculum requirements, the specific degree requirements at WSU, and the specified preprofessional coursework for entry to the MPAS program.

State Authorization Reciprocity Agreement (SARA)

Complaint Procedures for Online Students

Students enrolled in online learning ("Online Students") who have a complaint against the University resulting from its distance education courses, activities and operations must first go through the University's procedures for resolution of grievances, including, but not limited to the following:

- Grading Policies
- Course Policies
- Attendance and Academic Status Policies
- Academic Honesty Policy
- Tuition, Room and Board, Fees
- Appeal of financial aid award or appeal of late payment fees ("Additional Student Financial Services")

Online Students may submit complaints (https://www.mcphs.edu/-/media/files/docs/departments/legal/sara-complaint-form-2023.pdf) to the Associate Provost for Institutional Research and Effectiveness at Henriette.Pranger@mcphs.edu. Students may also submit complaints to their dean or program director or the Dean of Students office. Additionally, students may submit information through the University's Compliance Hotline, a toll-free, 24-hours-a-day, 7 days-a-week resource. Such complaints may be submitted anonymously, but anonymous complaints cannot bring about a result for a complainant who remains unidentified. The Compliance Hotline is staffed and managed by Lighthouse Services, Inc., a company that is not affiliated with MCPHS and provides this service under contract. The Compliance Hotline may be contacted by:

- Telephone: 877.472.2110
- Email: reports@lighthouse-services.com (please indicate that your report concerns MCPHS).
- Fax: 215.689.3885 (please indicate that your report concerns MCPHS)

If the University's internal complaint procedures have been exhausted and the complaint has not been resolved:

- Online Students residing in Massachusetts and non-SARA states and territories may file a consumer complaint with the Massachusetts Attorney General's Consumer Advocacy & Response Division (https://www.mcphs.edu/-/media/files/docs/departments/legal/sara-complaint-form-2023.pdf).
- Online Students residing in New Hampshire may file a consumer complaint with the New Hampshire Attorney General's Consumer Protection & Antitrust Bureau (https://www.doj.nh.gov/consumer/complaints/).

Online Students residing in a state other than Massachusetts and New Hampshire, and when such state is a SARA participating state, may file a complaint with the Massachusetts Department of Higher Education, in its capacity as the SARA portal entity for Massachusetts, at SARA - Student Complaints (https://www.mass.edu/foradmin/sara/complaints.asp). More information about the DHE's complaint process can be found here: DHE Complaint Policy and Process (https://www.mass.edu/forstufam/documents/Final%20DHE%20Complaint%20Policy.pdf).

Professional Licensure
A chart of MCPHS' courses and programs that customarily lead to professional licensure, and the states where such programs meet, do not meet a state's educational requirements for professional licensure may be found at https://www.mcphs.edu/about-mcphs/legal.

Residency
Course and program availability varies by state. Admission into a program is dependent on program availability in the state where the student is physically located at the time of admission. If a student moves to a different state after admission to the program, continuation within the program will depend on the availability of the program within the new state where the student is physically present. It is the student's responsibility to notify the college of a change in physical presence.

ADMISSION

General Admission Policies

General MCPHS admission policies and application procedures that apply to all applicants are stated below.
An application for admission must be complete in order to be evaluated. An application is considered complete when the Admission Office has received the completed admission application, all required credentials, and the nonrefundable application fee (if applicable).

All credentials must be sent directly from the issuing agency to the Admission Office either at the Boston Campus or the campus where the program to which the applicant is applying is offered. Transfer applicants to the Doctor of Pharmacy program (Transfers entering into the 1st and 2nd year of the PharmD program do not submit application through PharmCAS), or applicants to the Master of Physician Assistant Studies program, Doctor of Physical Therapy program, Master of Science in Occupational Therapy program, and Doctor of Optometry program should send official transcripts directly to the Pharmacy College Application Service (PharmCAS), Central Application Service for Physician Assistants (CASPA), Occupational Therapist Centralized Application Service (OTCAS), Physical Therapist Centralized Application Service (PTCAS), Dental Hygiene Centralized Application Service or Optometry Centralized Application Service (OptomCAS), respectively. Application to the BS in Nursing programs through Nursing Centralized Application Service (NursingCAS) is optional.

Applicants may apply to only one MCPHS campus and/or program per academic year.

A new application, complete with updated credentials, must be submitted each time a candidate reapplies for admission to the University.

Preference is given to candidates whose application files are complete and received by the priority deadline. However, applications will continue to be reviewed until all available spaces are filled.

Interviews are required for transfer applicants applying to the third year of the Doctor of Pharmacy program (Boston) who have met or plan to complete all required preprofessional courses prior to matriculation, the Physician Assistant Studies program (Boston, Manchester, and Worcester), the Doctor of Health Sciences (Online), Doctor of Pharmacy (Accelerated) program (Worcester and Manchester), the Doctor of Optometry program (Worcester), , the Doctor of Physician Assistant Studies, the Doctor of Healthcare Administration program (Online), the Master of Acupuncture program (Worcester), the Doctor of Acupuncture program (Worcester),and the Non-Traditional Doctor of Pharmacy program (Online). These interviews are by invitation only. Candidates who are invited are contacted by email directly by the Admission Office.

Upon notification of acceptance, all students are required to pay an enrollment deposit to secure a place in the entering class. The deposit must be in U.S. dollars, in the form of a credit card payment, money order, or check drawn on a U.S. bank (made payable to MCPHS). The University accepts wire transfers by Flywire and credit card payments by Visa, Discover, or MasterCard. MCPHS does not accept cash. The deposit must be received by the specified deadline and is credited in full to the tuition cost of the first term of enrollment. Deposit amounts and deadlines vary according to campus and program, and are specified in the letter of acceptance. Deposits are non-refundable.

Tests and Testing Agencies

FOR SAT, AP, CLEP, TOEFL, and GRE
CONTACT Educational Testing Service, Princeton, NJ 08541
Tel.: 609.921.9000
www.ets.org
MCPHS code number for all ETS tests is 3512.

FOR ACT
CONTACT ACT National Office, P.O. Box 168, Iowa City, IA 52243-0168
Tel.: 319.337.1000 / Fax: 319.339.3021
www.act.org
MCPHS code number for ACT tests is 1860.

FOR IELTS
CONTACT IELTS Administrator, 777 Dedham St., Newton, MA 02459
www.ielts.org

FOR DUOLINGO
https://englishtest.duolingo.com

FOR OAT
CONTACT Optometry Admission Testing Program, 211 East Chicago Ave, Chicago, IL 60611-2637
Tel: 800.232.1694 /
www.ada.org/en/oat

Priority Dates and Campus Mailing Addresses
MCPHS establishes priority dates for admission to all academic programs. If space permits, the University continues to accept and review applications beyond the dates listed.

Boston Campus
MCPHS
Admission Office
179 Longwood Avenue
Boston, MA 02115
Tel: 617.732.2850 / 800.225.5506 / Fax: 617.732.2118

Freshman Admission Priority Dates
Early action I—November 1
Early action II—December 1
Regular decision—February 1

Undergraduate Transfer Admission Priority Date
All programs—February 1

Fast Track / Postbaccalaureate Programs Priority Dates
Bachelor of Science in Diagnostic Medical Sonography (Fast Track)—February 1 (fall entry)
Bachelor of Science in Magnetic Resonance Imaging (Fast Track)—November 15 (spring entry)
Bachelor of Science in Nuclear Medicine Technology (Fast Track)—February 1 (summer entry)
Bachelor of Science in Radiation Therapy (Fast Track)—February 1 (summer entry)
Bachelor of Science in Radiography (Fast Track)—February 1 (summer entry)
Bachelor of Science in Nursing, Postbaccalaureate—October 1 (spring entry), May 1 (fall entry)
Advanced Medical Imaging Certificate Programs Priority Dates
Computed Tomography (CT)—February 1 (summer and fall entry)
Certificate in Advanced Pharmacy Practice Studies (CAPPS)—Rolling
Doctor of Pharmacy—February 1

Graduate Admission Priority Dates
Master of Physician Assistant Studies—September 1 (fall entry)
Master of Public Health—February 1 (fall entry)
Master of Science in Clinical Research—June 1 (fall entry), November 15 (spring entry), February 1 (summer entry)
Master of Science / PhD in Medicinal Chemistry—February 1 (fall entry)
Master of Science / PhD in Pharmaceutical Economics and Policy—February 1 (fall entry), November 1 (spring entry)
Master of Science / PhD in Pharmaceutics—February 1 (fall entry)
Master of Science / PhD in Pharmacology—February 1 (fall entry)
Master of Science in Regulatory Affairs and Health Policy—June 1 (fall entry), November 15 (spring entry), February 1 (summer entry)
Graduate Certificate in Clinical Research—June 1 (fall entry), November 15 (spring entry), February 1 (summer entry)
Graduate Certificate in Health Policy— June 1 (fall entry), November 15 (spring entry), February 1 (summer entry)
Graduate Certificate in Regulatory Affairs— June 1 (fall entry), November 15 (spring entry), February 1 (summer entry)

Worcester Campus
MCPHS
Admission Office
19 Foster Street
Worcester, MA 01608
Tel.: 508.373.5607 / Fax: 508.890.7987

Doctor of Pharmacy (Accelerated)— June 1
Doctor of Optometry— May 21
Doctor of Physical Therapy— June 1
Master of Acupuncture–May 1
Master of Acupuncture and Chinese Herbal Medicine—May 1
Master of Acupuncture / Doctor of Acupuncture–May 1
Master of Acupuncture and Chinese Herbal Medicine/ Doctor of Acupuncture–May 1

Certificate of Advanced Graduate Study in Chinese Herbal Medicine—May 1
Master of Science in Occupational Therapy–June 3
Master of Physician Assistant Studies (Accelerated)—January 15
Master of Science-Thesis / PhD in Pharmaceutics—February 1
Master of Science-Thesis / PhD in Pharmacology—February 1
Bachelor of Science in Dental Hygiene (Fast track)—May 1
Bachelor of Science in Diagnostic Medical Sonography (Fast track)-May 1
Bachelor of Science in Nursing (Postbaccalaureate)—October 1 (spring entry), May 1 (fall entry)

Manchester Campus
MCPHS
Admission Office
1260 Elm Street
Manchester, NH 03101-1305
Tel.: 603.314.1701 / Fax: 603.314.0213

Doctor of Pharmacy (Accelerated)— June 1
Master of Physician Assistant Studies—January 15
Master of Science in Occupational Therapy-June 3
Bachelor of Science in Nursing (Postbaccalaureate)—October 1 (spring entry) and May 1 (fall entry)

Online Programs
MCPHS Online Admission Office
179 Longwood Avenue
Boston, MA 02115
Tel.: 508.373.5657 / Fax: 617.732.2118

Artificial Intelligence in Healthcare Certificate —November 15 (spring entry), June 1 (fall entry)
AS to MS in Dental Hygiene Bridge Program—June 1
Associate Degree (AD)to Master of Science in Nursing Bridge (Family Nurse Practitioner Track)—November 15 (spring entry),
Associate Degree (AD)to Master of Science in Nursing Bridge (Psychiatric/Mental Health Nurse Practitioner Track)—November 15 (spring entry
Bachelor of Science in Dental Hygiene Degree Completion—June 1
Bachelor of Science in Health Sciences Degree Completion—November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Doctor of Pharmacy (Non-Traditional Pathway)—June 1
Advanced Certificate in Magnetic Resonance Imaging—February 1
Advance Certificate in Nuclear Medicine Technology- February 1 (summer entry)
Certificate of Advanced Graduate Studies in Nursing (Family Nurse Practitioner Track) November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Certificate of Advanced Graduate Studies in Nursing (Psychiatric Mental Health Nurse Practitioner Track)–November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Graduate Certificate in Clinical Management—November 15 (spring entry), June 1 (fall entry)
Graduate Certificate in Clinical Research—November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Graduate Certificate in Healthcare Management—November 15 (spring entry), June 1 (fall entry)
Graduate Certificate in Health Policy—November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Graduate Certificate in Public Health—November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Graduate Certificate in Regulatory Affairs—November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Master of Business Administration in Healthcare Management—November 15 (spring entry), June 1 (fall entry)
Master of Science in Clinical Management—November 15 (spring entry), June 1 (fall entry)
Master of Science in Clinical Research—November 15 (spring entry), June 1 (fall entry),
Master of Science in Regulatory Affairs and Health Policy—November 15 (spring entry), June 1 (fall entry)
Master of Science in Health Informatics—November 15 (spring entry), June 1 (fall entry)
Master of Science in Data Science—November 15 (spring entry), June 1 (fall entry)
Master of Health Sciences—November 15 (spring entry), June 1 (fall entry)
Master of Public Health—November 15 (spring entry), June 1 (fall entry)
Master of Science in Dental Hygiene—June 1
Master of Science in Nursing (Family Nurse Practitioner Track)—November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Master of Science in Nursing (Psychiatric/Mental Health Nurse Practitioner Track)–November 15 (spring entry), June 1 (fall entry), February 1 (summer entry)
Doctor of Acupuncture Completion Program–May 1
Doctor of Health Sciences—November 15 (spring entry), June 1 (fall entry)
Doctor of Healthcare Administration—November 15 (spring entry), June 1 (fall entry)

Doctor of Medical Science —November 15 (spring entry), June 1 (fall entry)

Freshman Admission: Boston

Requirements
An applicant's secondary school program of study must include at least 16 units of coursework in the following subject areas:

- 4 units of English
- 3 units of mathematics (algebra I and II; geometry)
- 2 units of social sciences (including 1 in history)
- 2 units of laboratory science (1 each in biology and chemistry)
- 5 units of additional college preparatory courses

Eligible applicants for first-year admission completing 12 or more credits following high school graduation will be classified as a transfer student for admission, unless the student was enrolled in a college prep or ESL program during those two years. Incoming freshmen students may transfer in no more than a total of 18 credits of work in combination of dual enrollment, AP, or IB credit. Dual-enrollment is defined as college-credit bearing coursework taken while enrolled in high school.

Early Action
Early action is open to prospective first-year students only. Candidates with solid academic records who have decided that MCPHS is a "top choice" college are encouraged to apply under Early Action I or Early Action II. Applicants must submit the application and all required materials by the deadlines listed above. The Admission Office makes decisions on Early Action I by the middle of December and Early Action II by the middle of January. Accepted students have until May 1 to respond to the University's offer of admission.

Application
An application for first-year admission is reviewed when the file is complete. To be considered complete, the applicant's file must contain all of the following:

- Completed Common Application (www.commonapp.org)
- Official high school transcript(s) from all secondary schools attended, including most recent grades (or official GED test score report)
- Official transcripts from colleges or universities attended, if applicable
- One letter of recommendation from a college/guidance counselor or teacher (up to three letters of recommendation will be considered).

Transcripts
Transcripts must clearly indicate all credits and grades received and indicate coursework currently in progress. All transcripts must be official. Transcripts can be sent by the institution electronically or by mail. If mailed in, they must be presented in a sealed envelope with the institution's stamp or a college/university official's signature across the closure. Photocopies and hand-carried documents not in a sealed, stamped envelope are not accepted.

All deposited students are expected to submit a final high school transcript by August 1. The diploma awarded and the date of the award must be clearly indicated on the final transcript.

Standardized Tests
Standardized testing, such as the SAT and ACT, is optional for all freshmen and transfer students applying to MCPHS. Candidates for whom English is not the primary spoken language are required to take the TOEFL, iTEP, IELTS, PTE, Duolingo, OSSLT or the English Proficiency exam (EPE) offered on campus. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States (exclusive of ESL courses), who have completed four years of study in a U.S.-accredited, IB or UK curricula outside the United States where English is the only medium of instruction (exclusive of ESL courses), who have scored 480 or higher on the Evidence-Based Reading and Writing section of the SAT, or who have scored 21 or higher on the English section of the ACT. (Please refer to the International Applicants section.)

Official score reports must be sent directly to the Admissions Office from the high school, Common Application, Naviance, or the testing agency.

School of Nursing – Boston – Program-Specific Admission Requirements
Transfer Applicants [from colleges/universities outside of MCPHS] – Minimum Requirements

- Cumulative GPA – 2.7; Science and Math GPAs – 2.7.

- In order to be granted transfer credit for prerequisite courses, students must achieve a grade of C+/78 or better. Transfer credits will not be accepted for courses repeated more than one time.
- TOEFL – Minimum proficiency level of 79 – candidates for whom English is not the primary language.
- ** If applying for a fall year 2 start as a transfer student – must achieve a minimum score of 65.3% on the Test of Essential Academic Skills (TEAS). The test must have been completed within 3 years of the applicant's proposed enrollment date. The exam may only be taken 3 times (total) to achieve the above score. Candidates must arrange for official test score results to be sent directly from ATI to MCPHS.

Internal Transfer Applicants [from within other majors in MCPHS] – Minimum Requirements

- Cumulative GPA – 2.7
- Completion of all prerequisite courses with a grade of C+/78 or better.
- TOEFL - Minimum proficiency level of 79 – candidates for whom English is not the primary language.
- Completion of an essay and interview with Nursing Faculty.
- **Qualified applicants are accepted on a space available basis and must achieve a minimum score of 65.3% on the Test of Essential Academic Skills (TEAS). The test must have been completed within 3 years of the applicant's proposed enrollment date. The exam may only be taken 3 times (total) to achieve the above score.

Advanced Course Credit

Freshmen may be awarded a limited amount of MCPHS course equivalency credit in transfer for Advanced Placement (AP) courses, International Baccalaureate (IB) courses, and/or college coursework taken during high school. The minimum score on an AP test for credit consideration is a 4 or a 5. The minimum score on an HL (high-level) IB exam for credit consideration is 5. An official transcript from a regionally accredited college or university must be submitted for dual enrollment credit. A grade of "C" or higher must be earned for all programs with the exception of Nursing. A grade of "C+" or higher is required for Nursing.

Dual Enrollment Programs

Courses taken for college credit while a student is enrolled in high school will receive transfer credit only if the course was administered in a college setting. A grade of C+ or higher is required. Courses taken in a high school that are taught by teachers who have been certified to offer college-level courses will not receive transfer credit.

Delayed Enrollment for Accepted Students

Students who are accepted for admission may request approval of delayed enrollment (deferral) for one full academic year due to military enlistment or student medical reasons. To do so, they must

- submit a written request to the Admission Office and
- provide documentation for military enlistment or student medical reasons and
- promise, in writing, that they will not attend any other college or university during the deferral period.

MCPHS reserves the right to deny requests for deferral. The candidate must submit a nonrefundable enrollment deposit before requesting a deferral. This deposit will reserve a place in the class starting in the fall of the following academic year. If the student enrolls at that time, the deposit will be credited in full toward the first-semester tuition.

Students are canceled from the accepted applicant pool if

- they are denied deferral and choose not to enroll at the University in the fall for which they were admitted or
- they defer but do not enroll in the fall of the academic year following the deferral period.

Students who are canceled from the accepted applicant pool must forfeit their accepted student status and full amount of the corresponding enrollment deposit (deposit is forfeited after May 1 of the freshman applicant's senior year).

Transfer Admission

Candidates who are accepted as transfer students may receive a limited number of course credits in transfer. Please refer to Residency Requirement in the section Academic Policies and Procedures. Transfer credit is not awarded for life experience or work experience. Transfer credit can be achieved through

- coursework taken prior to enrollment at other regionally accredited colleges and universities,
- successful passing of Advanced Placement (AP) and/or College-Level Examination Program (CLEP) examinations (see below), and
- successful passing of International Baccalaureate (IB) examinations.

Policies that determine the amount of transfer credit awarded and that identify courses accepted in transfer vary among programs. Candidates interested in transfer credit should contact the Admission Office about their particular program of interest. Transfer credit for professional coursework is very limited and is awarded on a case-by-case basis through special petition to the dean of the school in which the program is offered. All petitions must be processed through the Admission Office and initiated by August 1 prior to fall enrollment or by December 1 if entering in the spring semester.

The Admission Office conducts a transfer credit evaluation on all transcripts in a candidate's file during the application review process. Accepted students receive access to an online student portal where they are able to view their transfer credit evaluation. Courses considered for transfer credit must meet the following requirements:

- Comparable in breadth and depth to those in the preprofessional phase of the specific program to which the candidate is applying. Comparability is determined by the Admission Office in collaboration with the Office of the Registrar, school deans, program directors, and faculty in related discipline(s).
- Transfer credits for Nursing and Radiation Therapy prerequisites will only be accepted if a grade of C+ or higher is earned.
- Completed within the last 10 years at the time of enrollment. This restriction is limited to courses in the area of mathematics and the natural, physical, and behavioral sciences.
- Submitted with an official transcript by August 1 (fall entry), December 1, (spring entry) or May 1 (summer entry). For transcripts submitted after these deadlines, and no later than the add/drop deadline of the subsequent term, the student must work with their academic dean for approval.

AP examination results are accepted for transfer credit for selected coursework. Students must achieve a score of 4 or better on an AP examination for transfer credit to be awarded. Transfer credits are limited to exams in English, Mathematics, language, and the arts.

CLEP results are accepted as transfer credit for selected subject matter for incoming transfer students. Candidates must receive a score of 50 or better per subject to be awarded CLEP credit. Examination(s) must be taken before the student's first semester of enrollment at MCPHS. Those who achieve a score below 50 may not repeat the examination and must take the course. CLEP is an opportunity for students whose coursework is comparable but not otherwise transferable (e.g., exceeds the 10-year limit, earned grade is below C) and others who have not taken coursework but believe they have comparable knowledge.

IB courses will be accepted for transfer credit for selected coursework. Students must achieve a score of 5 or better on an HL (high-level) IB exam. Transfer credits are limited to exams for English, Mathematics language, and the arts. Transfer students accepted into the professional phase of an MCPHS degree program will receive transfer credit for IB courses accepted by a previous college.

Transfer credit of AP, IB, CLEP, and/or dual enrollment courses is limited to a total of 18 credit hours. Exam documentation must be provided to MCPHS no later than August 15 (fall entry), December 15, (spring entry) or May 1 (summer entry).

Candidates who desire to receive credit based on AP and CLEP examinations must arrange for official test score results to be sent directly from Educational Testing Service (ETS) to the Admissions Office in Boston. A complete list of the AP and CLEP examinations and the corresponding MCPHS courses for which transfer of credit is allowed is available upon request through the Admissions Office.

Dual Enrollment Programs

Courses taken for college credit while a student is enrolled in high school will receive transfer credit only if the course was administered in a college setting. Courses taken in a high school that are taught by teachers who have been certified to offer college-level courses will not receive transfer credit. Transfer credits are limited to English, Mathematics, language, and the arts.

Petition for Additional Transfer Credit Post Matriculation

Once a student has matriculated at the University, no courses taken outside of MCPHS will be accepted for transfer credit. (NOTE: COF courses are allowed for Boston students.) Exceptions to this policy may be granted in instances involving delay of graduation or extreme hardship.

Prior to taking a course for transfer credit at another institution, students must submit a Petition to Transfer Credit form to the Center for Academic Success and Enrichment, which approves or denies the petition. Notification of the decision will be distributed to (1) the student, (2) the program director, (3) the school dean, (4) the Office of the Registrar, and (5) others as appropriate. The student is responsible for requesting that official transcripts be sent to the Office of the Registrar, which will verify the credit and post a grade of TR in the student's transcript. Official transcripts must be received no later than the add/drop deadline of the subsequent semester. These petitions are reviewed on a case-by-case basis and may take up to two weeks to receive official notification. Students are advised not to enroll in or make payments for non-MCPHS courses without official University approval.

Fast Track, Postbaccalaureate, and Graduate Admission: Boston

NOTE: All candidates must refer to General Admission Policies for additional information including interviews, mailing address, and deadlines.

Fast Track and Postbaccalaureate Programs
At MCPHS, Fast Track is used to identify options for transfer students to complete a bachelor's degree in the shortest possible time. Fast Track transfer options are available for students entering BS programs in Dental Hygiene, Medical Imaging and Therapeutics, and Nursing:

- Students who have already earned a bachelor's degree (BS) in any field of study may complete a second bachelor's degree at MCPHS by taking only the professional courses and related prerequisites. 60 credit hours is awarded and the MCPHS Core Curriculum requirement is waived upon admission.
- Students who have already earned an associate's degree (AS) in any field of study may complete a bachelor's degree at MCPHS by taking professional courses and related prerequisites, plus any additional courses in the MCPHS Core Curriculum requirement that were not included in the applicant's associate degree program.
- Students who have taken college-level courses at another institution may transfer up to 60 credit hours toward an MCPHS bachelor's degree. Students must complete a minimum of 60 credit hours at MCPHS by taking professional courses, plus any prerequisites and MCPHS Core Curriculum requirements that were not taken at the prior institution.

Students entering MCPHS through a Fast Track option must meet the University's residency and course transfer requirements.

Applications are accepted for the following graduate and fast track programs:

Graduate Programs
Master of Physician Assistant Studies
Master of Public Health
Master of Science in Clinical Research
Master of Science or Doctor of Philosophy in Medicinal Chemistry
Master of Science or Doctor of Philosophy in Medicinal Chemistry - Thesis
Master of Science or Doctor of Philosophy in Pharmaceutical Economics and Policy
Master of Science or Doctor of Philosophy in Pharmaceutics
Master of Science or Doctor of Philosophy in Pharmaceutics - Thesis
Master of Science or Doctor of Philosophy in Pharmacology
Master of Science or Doctor of Philosophy in Pharmacology - Thesis
Master of Science in Regulatory Affairs and Health Policy
Graduate Certificate in Clinical Research
Graduate Certificate in Health Policy
Graduate Certificate in Regulatory Affairs

Fast Track / Postbaccalaureate Programs
Bachelor of Science in Dental Hygiene (Fast Track)
Bachelor of Science in Diagnostic Medical Sonography (Fast Track)
Bachelor of Science in Magnetic Resonance Imaging (Fast Track)
Bachelor of Science in Nuclear Medicine Technology (Fast Track)
Bachelor of Science in Radiation Therapy (Fast Track)
Bachelor of Science in Radiography (Fast Track)
Bachelor of Science in Nursing (Postbaccalaureate)

Advanced Imaging Certificates for Licensed Radiologic Technologists
Computed Tomography
Mammography
Magnetic Resonance Imaging
Nuclear Medicine Technology

Requirements
NOTE: Additional program-specific requirements may be found in the individual program descriptions in this catalog.

Candidates for admission to all graduate, fast track, or postbaccalaureate programs must have the following:

- An earned bachelor's degree from an accredited college or university (some fast track programs do not require a prior bachelor's degree)
- An earned master's degree in a related field for those applying to a PhD program within the Division of Graduate Studies
- An overall grade point average (GPA) of 3.0 or higher (on a 4.0 scale) for graduate programs
- A TOEFL, IELTS, PTE, Duolingo, or ITEP for all candidates for whom English is not the primary spoken language. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States (exclusive of ESL courses), who have completed four years of study in a U.S.-accredited, IB or UK curricula outside the United States where English is the only medium of instruction (exclusive of ESL courses) or have an earned degree (bachelor's or higher) from a college or university within the U.S. or a native English speaking country whereas the program was fully taught in English. (Please refer to the International Applicants section.)

Preference is given to those who

- have an overall GPA of 3.0 or better (on a 4.0 scale) with consistent performance of 3.0 or better in prerequisite courses and other subjects related to the major field of study; and
- have volunteer, research, or work experience related to the major field of study.

Application

An application for graduate, fast track, or postbaccalaureate admission is reviewed when the file is complete. To be considered complete, the applicant's file must contain all of the following:

- Completed application, which may be found online for all programs (except Physician Assistant Studies) at www.mcphs.edu. All Physician Assistant Studies application materials must be submitted through CASPA.
- Official transcripts from all colleges or universities attended, including those outside the United States
- Official reports of GRE and TOEFL, ITEP, MCPHS EPE, PTE, Duolingo, or IELTS scores, if applicable
- One letter of recommendation recommended from faculty or work/research supervisors, which solidly support the candidate's ability to complete graduate-level work successfully in the chosen discipline
- For the Advanced Certificate in Medical Imaging programs, a copy of the applicant's current ARRT/NMTCB/ARDMS certificate and certification number, a copy of the Massachusetts Radiation Control Program radiologic technologist license, and a copy of the current CPR certification
- Master of Physician Assistant Studies Applicants - Students applying to the Master of Physician Assistant Studies program must apply through CASPA (www.caspaonline.org). Candidates with international credentials must refer to the International Applicants section in this catalog.

Admissions Prerequisites:

- Overall CASPA Verified GPA: 3.0
- Overall Science CASPA Verified GPA: 3.0
- Prerequisite GPA: 3.0

Transcripts

Transcripts must clearly indicate all credits and grades received and indicate coursework currently in progress. Degree(s) or diploma(s) that have been received, dates awarded, and major courses of study must be clearly noted. Transcripts can be sent by the institution electronically or by mail. If mailed in, they must be presented in a sealed envelope with the institution's stamp or a college/university official's signature across the closure. Photocopies and hand-carried documents not in a sealed, stamped envelope are not accepted. Official transcripts must be received no later than August 15 (fall entry), December 15 (spring entry), or May 1 (summer entry).

All applicants—including U.S. citizens and permanent residents—who have academic credentials from countries outside the United States are required to supply additional documents in order to be considered for admission.

Non-U.S. Transcripts

Candidates must submit official transcripts of coursework taken outside the United States to an approved credential evaluation service. Currently approved credential evaluation services are:

World Education Services (WES)
www.wes.org
https://www.wes.org/partners/credential-evaluation-requirements-for-the-massachusetts-college-of-pharmacy-and-health-sciences/

and
Education Credential Evaluators (ECE)
www.ece.org
https://accounts.ece.org/TPO/MCPHS-AF

A course-by-course evaluation is required for foreign transcript evaluation. Photocopies of transcripts and test scores are not accepted. Official transcripts for courses taken outside the United States also must be submitted directly to the Admission Office in addition to the WES or ECE evaluation.

Standardized Tests
GRE scores are required (regardless of graduation date from a college or university) for the following programs: Pharmaceutics, Pharmacology, Medicinal Chemistry, and Pharmaceutical Economics and Policy (PhD only),

Candidates for whom English is not the primary spoken language are required to take the TOEFL, ITEP, Duolingo, or IELTS. This test requirement may be considered satisfied on an individual basis for applicants who have attended all four years of high school in the United States (exclusive of ESL courses), who have completed four years of study in a U.S.-accredited, IB or UK curricula outside the United States where English is the only medium of instruction (exclusive of ESL courses) or who have an earned degree (bachelor's or higher) from a U.S. college or university. (Please refer to the International Applicants section.)

Recommendations
Letters of recommendation must be sent from the recommender electronically or by mail. Personal copies, photocopies, or hand-delivered recommendations that are not in individual sealed, stamped/signed envelopes are not acceptable.

Interview
On-campus interviews are required for some programs. These interviews are by invitation only. Candidates who are invited are contacted directly by the Admission Office.

Graduate Transfer of Credit
Transfer credit for graduate-level coursework taken at other accredited institutions may be accepted for transfer toward a student's degree requirements pending approval of the Graduate Council. Only courses that are clearly relevant to the student's program of study and have not been used to fulfill requirements for another degree may be considered for transfer credit. A maximum of 8 credit hours for MS and 12 credit hours for PhD programs may be transferred for coursework in which grades of B or higher have been attained. In some instances, transfer hours received in certain courses taken on a pass/fail basis may be approved by the Graduate Council. It is the responsibility of the student's Graduate Advisory Committee to determine the student's comprehension of the material before such hours are shown on the program of study for credit toward the degree. Research credit from another institution cannot be accepted for transfer credit. Coursework must have been completed not more than two years prior to the date of the request for transfer. Transfer credit for all MS coursework, including research credits, taken at MCPHS is acceptable for transfer toward a student's PhD degree requirements, provided that the coursework is clearly relevant to the student's program of study.

Graduate Student Status
At the time of acceptance, each student is classified as regular, provisional, or non-matriculating.

Regular Status
Candidates who have met all requirements for admission to a graduate degree program are admitted as regular students. The transcript must show sufficient and satisfactory undergraduate preparation in the major field, a minimum GRE score, and (if applicable) a TOEFL, ITEP, MCPHS EPE, PTE, Duolingo, or IELTS score. (Please refer to the International Applicants section.)

Candidates who are accepted to the MS track of graduate studies in the pharmaceutical sciences and desire consideration for acceptance to the PhD track may do so after successful completion of one full year in the master's degree track at MCPHS. A candidate must submit a letter of petition to the Associate Dean of Graduate Studies carefully outlining his or her career goals and reasons for consideration. Additional documentation may be requested at the discretion of the Associate Dean or the Graduate Advisory Committee. Candidates will be notified of the decision by the Associate Dean. Those who are not approved will continue in the master's degree track contingent upon satisfactory performance.

A graduate student is considered to have full-time status if they are
- registered for 9 or more graduate credits, or
- registered for 6 or more graduate credits while appointed as a graduate assistant for 15-20 hours per week, or
- registered for CHE 880 Research, or
- registered for CHE 885 Literature-Based Research, or
- registered for CHE 895 Graduate Study Extension, or
- registered for PBH 895 Advanced Research Analysis & Interpretation Preparedness

- registered for DHY 895 Graduate Extension of Thesis, or
- registered for DRA 814 Data Analysis and Presentation Capabilities in Regulatory Affairs, or
- registered for MCR 804 Graduate Project in Clinical Research
- registered for PEP 840 Data Analysis and Presentation Capabilities in PEP, or
- registered for PEP 880 MS Thesis Research in Pharmaceutical Economics and Policy, or
- registered for PEP 890 PhD Dissertation Research in Pharmaceutical Economics and Policy, or
- registered for PEP 895 Graduate Study Extension, or
- registered for PSB 870 Practicum in Pharmaceutical, Regulator and Applied Sciences, or
- registered for PSB 872 Special Problems in Pharmaceutical Sciences (internships), or
- registered for PSB 880 Research, or
- registered for PSB 895 Graduate Student Extension (thesis/dissertation completion, no credit), or

Provisional Status
The University may, at its discretion, admit candidates into a graduate degree program on a trial basis as provisional students to ascertain their ability to do graduate work. Provisional students are those who have not met the minimum undergraduate grade point averages and/or GRE scores for admission. Provisional status also may be applied to students whose credentials do not meet specific program requirements. Provisional students must adhere to regulations established by the Graduate Council and be working toward a degree on a full-time basis. In order to achieve regular status, the student must complete the equivalent of two academic semesters (at least 9 credit hours) of full-time work with an overall grade point average of 3.0. If the student had not taken the GRE at the time of admission as a provisional student, the student must take the GRE during the first semester of provisional status.

At any time during the first year of matriculation following completion of the above criteria, a student may initiate an Approval for Change of Student Status in the Office of Graduate Studies. However, the student's graduate advisor also may initiate the change and should do so when the student has met the required criteria, or may request the change of status before the student has completed 9 credits. The change from provisional to regular status must be approved by the Assistant Dean of Graduate Studies. No student may remain on provisional status for more than two consecutive semesters. If a student admitted to provisional status fails to meet the conditions stated in the letter of admission, the student may be dismissed from the program.

Admission: Worcester and Manchester

Applications are accepted for the following programs:
Accelerated Doctor of Pharmacy (PharmD)
Master of Acupuncture (MAc)
Master of Acupuncture / Doctor of Acupuncture (MAc/DAc)
Master of Acupuncture and Chinese Herbal Medicine (MAc CHM)
Master of Acupuncture and Chinese Herbal Medicine/ Doctor of Acupuncture (MAc CHM/DAc)
Master of Physician Assistant Studies (MPAS)
Master of Science in Occupational Therapy (MSOT)
Fast Track Bachelor of Science in Dental Hygiene (BS)
Fast Track Bachelor of Science in Diagnostic Medical Sonography (BS)
Postbaccalaureate Bachelor of Science in Nursing (BSN)
Doctor of Optometry (OD)
Doctor of Physical Therapy (DPT)

Requirements

- Candidates for admission for the accelerated Doctor of Pharmacy (PharmD) program who do not have a previously earned Bachelor of Science or Bachelor of Arts degree must have completed or plan to complete an equivalent of 67 credit hours of preprofessional coursework at the college or university level prior to entry in the program. Applicants who have a previously earned BS or BA degree from a U.S.-regionally accredited institution must have completed or plan to complete the equivalent of 40 credit hours of math and science coursework at the college or university level prior to entry in the program. The PharmD program does not require a specific overall minimum GPA. The School utilizes a holistic admissions process. A minimum grade of C is required in all pre-requisites.
- Candidates for admission to the Master of Acupuncture (MAc) or Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) must have satisfactorily complete at least two (2) years of undergraduate-level education (60 semester credits or 90 quarter credits) from an institution accredited or pre-accredited by an agency recognized by the U.S. Secretary of Education. In considering the acceptance of education and training obtained in foreign countries, credits earned at a foreign educational institution must be validated by a recognized, educational credentials, evaluation service.
- Candidates for admission to the Certificate of Advanced Graduate Study (CAGS) in Chinese Herbal Medicine must include current enrollment in, or the satisfactory completion of, an ACAHM-accredited/pre-accredited entry-level (i.e., master's-level or professional doctoral) program in acupuncture or in acupuncture and Chinese herbal medicine. In considering the acceptance of education and training obtained in foreign countries, credits earned at a foreign educational institution must be validated by a recognized educational credentials evaluation service.
- Candidates for admission to the Doctor of Acupuncture (DAc) program must have satisfactorily completed at least three (3) years of undergraduate-level education (90 semester credits or 135 quarter credits) from an institution accredited or pre-accredited by an agency recognized by the U.S. Secretary of Education. In considering the acceptance of education and training obtained in foreign countries, credits earned at a foreign educational institution must be validated by a recognized, educational credentials, evaluation service. Prerequisite undergraduate-level education required for admission to the Doctor of Acupuncture must include chemistry, biology and psychology.
- Candidates to the Master of Physician Assistant Studies (MPAS), Master of Science in Occupational Therapy (MSOT), Bachelor of Science in Nursing (BSN), and Doctor of Physical Therapy (DPT) programs must have completed a bachelor's degree and prerequisite courses.
- Candidates to the Fast Track Bachelor of Science in Dental Hygiene or Fast Track Bachelor of Science in Diagnostic Medical Sonography program must have completed a bachelor's degree or specific prerequisite courses with an overall 2.5 GPA on a 4.0 scale. A minimum grade of C is required in all prerequisites.
- Candidates for admission to the Accelerated Master of Physician Assistant Studies program must have a cumulative and science academic grade point average of at least 3.0 or higher on a 4.0 scale and a prerequisite course grade point average of at least 3.0 or higher on a 4.0 scale attained at a regionally accredited college or university. A minimum of grade of C is required in all prerequisites.
- Candidates for admission to the Master of Science in Occupational Therapy program must have a cumulative grade point average of at least 3.0 or higher on a 4.0 scale attained at a regionally accredited college or university. A minimum grade of C is required in all prerequisites.
- Candidates for admission to the Accelerated (Postbaccalaureate) Bachelor of Science in Nursing program must have a cumulative academic grade point average of at least 2.7 or higher on a 4.0 scale attained at a regionally accredited college or university. A minimum grade of C+ is required in all prerequisites.
- Candidates for admission to the Doctor of Optometry program should have a minimum overall grade point average of 3.0, a minimum grade of C in all prerequisite courses, at least 90 credits earned at a regionally accredited college or university, and evidence of familiarity with optometry (e.g., proof of shadowing a practitioner or volunteer work in optometric offices).

- Candidates for admission to the Doctor of Physical Therapy program must have an overall grade point average of at least 3.0 or higher on a 4.0 scale and a prerequisite course grade point average of at least 3.0 or higher on a 4.0 scale attained at a regionally accredited college or university. A minimum of grade of C is required in all prerequisite courses and a minimum of 10 hours of physical therapy exposure/experience in a clinical setting.

Preference is given to candidates who demonstrate

- scores in the 50th percentile or above in each section of the GRE (see Standardized Tests for a list of programs that require the GRE);
- minimum OAT (Optometry Admission Test) score of 300 (see Standardized Tests for a list of programs that require the OAT);
- consistent academic performance in a full-time program with above-average grades in mathematics and sciences without having to withdraw or repeat courses; and
- an ability to articulate clearly, in a written essay, the reasons for their choice of program study at MCPHS.

Application

An application for admission to the PharmD, MPAS, MSOT, Postbaccalaureate BSN, OD or DPT program is reviewed when the file is complete. To be considered complete, the applicant's file must contain a completed Pharmacy College Application Service (PharmCAS), Central Application Service for Physician Assistants (CASPA), Occupational Therapist Centralized Application Service (OTCAS), Physical Therapist Centralized Application Service (PTCAS), Nursing Centralized Application Service (NursingCAS), or Optometry Centralized Application Service (OptomCAS) application including the following documents, which must be submitted directly to PharmCAS (www.pharmcas.org), CASPA (www.caspaonline.org), OTCAS (www.otcas.org), PTCAS (www.ptcas.org), NursingCAS (www.nursingcas.org), or OptomCAS (www.optomcas.org), respectively:

- Official transcripts from all colleges or universities attended
- One letter of recommendation, except for applicants to the Master of Physician Assistant Studies, Doctor of Physical Therapy or Doctor of Optometry programs which must submit two letters of recommendation (see below)
- A written essay

Additionally, the following documents must be submitted directly to the Admission Office on the campus to which the applicant is applying:

- Official high school transcript(s) or official GED test scores for applicants without a bachelor's degree
- Official reports of standardized test scores, if applicable (see below).

An application for admission to the Fast Track Bachelor of Science in Dental Hygiene, Fast Track Diagnostic Medical Sonography, Master of Acupuncture (MAc), Master of Acupuncture and Chinese Herbal Medicine (MAc CHM), or Doctor of Acupuncture (DAc) program is reviewed when the file is complete. To be considered complete, the applicant's file must contain all of the following items:

- Completed application that may be found online at www.mcphs.edu
- Official transcripts from all colleges or universities attended
- Official reports of standardized test scores, if applicable (see below)
- One letter of recommendation (see below)
- A written Statement of Purpose (for MAc, MAc CHM, or DAc)

Transcripts

Official transcripts reflecting all prerequisite courses must be received in the Admission Office no later than August 15 (fall entry) or December 15, (spring entry), Students failing to submit these documents by this deadline will be dropped from all classes. Transcripts must clearly indicate all credits and grades received. Transcripts can be sent by the institution electronically or by mail. If mailed in, they must be presented in a sealed envelope with the institution's stamp or a college/university official's signature across the closure. Photocopies and hand-carried documents not in a sealed, stamped envelope are not accepted.

All applicants, including U.S. citizens and permanent residents, who have academic credentials from countries outside the United States are required to supply additional documents in order to be considered for admission.

Non-U.S. Transcripts

Candidates must submit official transcripts of coursework taken outside the United States to an approved credential evaluation service. Currently approved credential evaluation services are:

World Education Services (WES)
https://www.wes.org/partners/credential-evaluation-requirements-for-the-massachusetts-college-of-pharmacy-and-health-sciences/

and

Education Credential Evaluators (ECE)
www.ece.org
https://accounts.ece.org/TPO/MCPHS-AF

A course-by-course evaluation is required for foreign transcript evaluation. Photocopies of transcripts and test scores are not accepted. Official transcripts for courses taken outside the United States also must be submitted directly to the Admission Office in addition to the WES or ECE evaluation.

Standardized Tests
Applicants for admission are required to submit official reports of standardized test scores as indicated below:

Candidates applying to the Doctor of Optometry program (Worcester) are required to submit official Optometry Admission Test (OAT) or official GRE scores.

- Official score reports must be sent directly to the Admission Office from the appropriate testing agency.

Recommendations
Candidates for Worcester/Manchester admission should submit one letter of recommendation, except for applicants to the Master of Physician Assistant Studies, Doctor of Physical Therapy or the Doctor of Optometry programs, which must submit two letters of recommendation. Preferably one letter of recommendation should be from a mathematics or science professor and one letter of recommendation from a work supervisor or academic advisor. Letters of recommendation for the Doctor of Optometry, Doctor of Pharmacy, Doctor of Physical Therapy, or Master of Physician Assistant Studies, or Master of Science in Occupational Therapy should be submitted through OptomCAS, PharmCAS, PTCAS, CASPA, NursingCAS, or OTCAS, respectively. Letters of recommendation must be sent from the recommender electronically or by mail. Personal copies, photocopies, or hand-delivered recommendations that are not in individual sealed, stamped/signed envelopes are not acceptable.

Interview
Interviews are required for applicants applying to the Master of Acupuncture, Master of Acupuncture and Chinese Herbal Medicine, Doctor of Acupuncture, Doctor of Pharmacy, Master of Physician Assistant Studies, and Doctor of Optometry programs. These interviews are by invitation only. Candidates who are invited are contacted directly by the Admission Office.

Although interviews may not be required of candidates applying to other programs, all candidates are encouraged to visit the University to meet with an admission counselor and tour the campus. To arrange an appointment or a tour, interested candidates should call the Manchester Admission Office at 603.314.1701 or the Worcester Admission Office at 508.373.5607.

Transfer and Prerequisite Course Credit
Candidates who are accepted to the Worcester/Manchester Postbaccalaureate BSN, Fast Track Diagnostic Medical Sonography, Fast Track Bachelor of Science in Dental Hygiene, accelerated Doctor of Pharmacy (PharmD), Master of Physician Assistant Studies, Master of Science in Occupational Therapy, Doctor of Optometry (OD), or Doctor of Physical Therapy (DPT) program must complete all prerequisite courses required of the program prior to matriculation. Prerequisite course credit is not awarded for life experience or work experience.

Transfer of Credit
Accepted students may receive a limited number of course credits in transfer. Please refer to Residency Requirement in the section *Academic Policies and Procedures*. Transfer credit is not awarded for life experience or work experience. Transfer credit can be achieved through

- coursework taken prior to enrollment at other regionally accredited, degree-granting colleges and universities
- PHY 270 Foundations of Physics I – Students who, prior to matriculation at MCPHS, have completed either one semester of calculus-based physics or two semesters of algebra-based physics will receive transfer credit for PHY 270. To be eligible for transfer credit, the courses must have been completed at a college or university and grades of C or better must have been earned in each class. This policy applies only to transfer credit requested for courses taken prior to matriculation at MCPHS.
- successful passing of the examinations listed below. Students receiving transfer credit for examinations must also pass the internal MCPHS placement exams during orientation in order to maintain their transfer credit. Transfer credits for examinations is limited to 18 credits overall.
- Advanced Placement (AP) examinations (see below)
- College-Level Examination Program (CLEP) examinations (see below)
- International Baccalaureate (IB) examinations (see below).

The Admission Office conducts a transfer credit evaluation on all transcripts in a candidate's file during the application review process. Accepted transfer students receive access to an online student portal where they are able to view their transfer credit evaluation. Courses considered for transfer credit must meet the following requirements:

- Comparable in breadth and depth to those in the preprofessional phase of the specific program to which the candidate is applying. Comparability is determined by the Admission Office in collaboration with the Office of the Registrar, school deans, program directors, and faculty in related discipline(s).
- Successfully completed with a grade of C (2.0) or better at a regionally accredited college or university (C+ for better for BSN)
- Completed within the last 10 years at the time of enrollment. This restriction is limited to courses in the area of mathematics and the natural, physical, and behavioral sciences.
- Submitted with an official transcript by August 15 (fall entry) or December 15 (spring entry), May 15. Courses not submitted by that time will not be awarded transfer credit.

The New England School of Acupuncture awards transfer credit towards the completion of its programs based on review of an applicant's official transcripts.

The credits must have been earned at a post-secondary institution of higher education accredited or pre-accredited by an agency recognized by the United States Secretary of Education. Credits earned at a foreign educational institution must be evaluated by a recognized educational credentials evaluation service. Petition for transfer credit must be submitted to the Admission Office prior to enrollment into the New England School of Acupuncture. Applicants must meet program admissions requirements that are in effect at the time of matriculation.

NESA considers the following criteria when determining if a course is eligible for transfer credit:

- The course content must be equivalent.
- The course must be taught at a similar level of instruction and at a similar depth and breadth.
- The course must be greater than or equal in hours.
- If a course has fewer hours, it is up to the Dean to determine if the competencies of the courses in question have been met by this prior coursework.
- The Dean determines if these competencies have been met or may determine that a challenge exam may be necessary to determine if the course competencies have been met.
- The student must attain a minimum grade point of C (2.0) as reflected on an official student transcript.
- Credits earned more than five (5) years prior to admission may only be accepted for transfer after validating and documenting that the student has retained the content knowledge and competencies of the respective course(s) for which transfer credits are being assessed.

NESA requires course descriptions and syllabi when determining the award of transfer credit for acupuncture coursework which must have been completed within the last three years. Non-acupuncture coursework earned more than five years prior to admission may be accepted for transfer credit if the applicant provides evidence of retained competencies of the coursework in their specified field for which transfer credits are being assessed. New England School of Acupuncture reserves the right to require a challenge exam in the determination of all transfer credit.

Courses submitted to satisfy admissions requirements cannot be used towards transfer credit. Continuing education coursework is not eligible for transfer credit.

NESA allows a maximum of 50% of the coursework needed for graduation from a degree program or certificate of advanced graduate studies to be accepted for transfer. Of that 50% no more than 25% of the program clinical training requirement may be accepted as transfer credit.

AP Credit
AP examination results are accepted for transfer credit for selected coursework. Students must achieve a score of 4 or better on an AP examination for transfer credit to be awarded

CLEP Credit
CLEP results are accepted as transfer credit for selected subject matter for incoming transfer students. Candidates must receive a score of 50 or better per subject to be awarded CLEP credit. Examination(s) must be taken before the student's first semester of enrollment at MCPHS. Those who achieve a score below 50 may not repeat the examination and must take the course. CLEP is an opportunity for students whose coursework is comparable but not otherwise transferable (e.g., exceeds the 10-year limit, earned grade is below C) and others who have not taken coursework but believe they have comparable knowledge.

IB Credit

IB courses will be accepted for transfer credit for selected coursework. Students must achieve a score of 5 or better on an HL (high-level) IB exam. Transfer credits are limited to exams for English, language, and the arts.

Candidates who desire to receive credit based on AP, CLEP and IB examinations must arrange for official test score results to be sent directly from Educational Testing Service (ETS) to the Admission Office. A complete list of the AP, CLEP and IB examinations and the corresponding MCPHS courses for which transfer of credit is allowed is available upon request through the Admission Office. Transfer credit by exam is limited to 18 credits total.

Dual Enrollment Programs
Courses taken for college credit that count toward the high school diploma will receive transfer credit only if the course credit is awarded by a regionally accredited, degree-granting college or university. Students must provide an official college transcript to receive credit.

Transfer credit for professional coursework
This transfer credit is very limited and is awarded on a case-by-case basis through special petition to the dean of the school in which the program is offered. All petitions must be processed through the Admission Office and initiated by August 15 prior to fall enrollment or by December 15 if entering in the spring semester.

Policies that determine the amount of prerequisite course or transfer credit awarded and that identify courses accepted in transfer vary among programs. Candidates interested in transfer credit should contact the Admission Office about their particular program of interest.

Petition for Additional Transfer Credit Post Matriculation
Once a student has matriculated at the University, no courses taken outside of MCPHS will be accepted for transfer credit. (NOTE: COF courses are allowed for Boston students.) Exceptions to this policy may be granted in instances involving delay of graduation or extreme hardship.

Prior to taking a course for transfer credit at another institution, students must submit a Petition to Transfer Credit form to the Center for Academic Success and Enrichment, which approves or denies the petition. Notification of the decision will be distributed to (1) the student, (2) the program director, (3) the school dean, (4) the Office of the Registrar, and (5) others as appropriate. The student is responsible for requesting that official transcripts be sent to the Office of the Registrar, which will verify the credit and post a grade of TR in the student's transcript. Official transcripts must be received no later than the add/drop deadline of the subsequent semester. These petitions are reviewed on a case-by-case basis and may take up to two weeks to receive official notification. Students are advised not to enroll in or make payments for non-MCPHS courses without official University approval.

Admission: Online Programs

Applications are accepted for the following programs:

Graduate Programs
Doctor of Health Sciences (DHS)
Doctor of Healthcare Administration (DHA)
Doctor of Medical Science (DMSc)
Doctor of Nursing Practice (DNP)
Master of Health Sciences (MHS)
Master of Public Health (MPH)
Master of Business Administration in Healthcare Management (MBA)
Master of Science in Health Informatics
Master of Science in Clinical Management (MS)
Master of Science in Clinical Research (MSCR)
Master of Science in Data Science (MSDS)
Master of Science in Dental Hygiene (MSDH)
Master of Science in Health Informatics (MSHI)
Master of Science in Nursing (MSN) (Family Nurse Practitioner)
Master of Science in Nursing (MSN) (Psychiatric/Mental Health Nurse Practitioner)
Master of Science in Pharmaceutical Economics and Policy
Master of Science in Regulatory Affairs and Health Policy
Master of Science in Radiologic and Imaging Sciences

Certificate Programs
Artifical Intelligence in Healthcare Certificate
Advanced Certificate in Magnetic Resonance Imaging
Advanced Certificate in Mammography
Advanced Certificate in Nuclear Medicine Technology
Graduate Certificate in Clinical Management
Graduate Certificate in Clinical Research
Graduate Certificate in Healthcare Management
Graduate Certificate in Health and Pharmacoepidemiology
Graduate Certificate in Health Economics and Outcomes Research
Graduate Certificate in Health Policy
Graduate Certificate in Oral Health Professions Education
Graduate Certificate in Precision Medicine
Undergraduate Certificate in Pre-Dental Science
Graduate Certificate in Public Health
Graduate Certificate in Regulatory Affairs
Certificate of Advanced Graduate Studies in Nursing (Family Nurse Practitioner Track)
Certificate of Advanced Graduate Studies in Nursing (Psychiatric/Mental Health Nurse Practitioner)

Postbaccalaureate Programs
Non-Traditional Doctor of Pharmacy Pathway (PharmD)

Bridge Programs
Associate Degree (AD) to Master of Science in Nursing (MSN) (Family Nurse Practitioner)
Associate Degree (AD) to Master of Science in Nursing (MSN) (Psychiatric/Mental Health Nurse Practitioner)
AS to Master of Science in Dental Hygiene (MSDH)
AS to Master of Science in Radiologic and Imaging Sciences

Degree Completion Programs
Bachelor of Science in Dental Hygiene
Bachelor of Science in Health Sciences
Bachelor of Science in Healthcare Management Completion
Bachelor of Science in Respiratory Therapy
Doctor of Acupuncture Completion

Requirements
NOTE: Additional program-specific requirements may be found in the individual program descriptions in this catalog or online at www.mcphs.edu

Candidates for admission to all online graduate and postbaccalaureate programs must have:

- an earned bachelor's degree from an accredited college or university and
- a TOEFL, ITEP, PTE, MCPHS EPE, Duolingo, or IELTS if English is not the candidate's primary spoken language. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States (exclusive of ESL courses) or who have an earned degree (bachelor's or higher) from a U.S. college or university. (Please refer to the International Applicants section.)

Candidates for admission to all online bridge and bachelor's degree completion programs must have:

- an earned associate degree from an accredited college or university, and;
- a TOEFL, ITEP, PTE, MCPHS EPE, Duolingo, or IELTS if English is not the candidate's primary spoken language. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States (exclusive of ESL courses) or have an earned degree (bachelor's or higher) from a U.S. college or university. (Please refer to the International Applicants section.)
- Preference is given to those who
- have an overall grade point average (GPA) of 3.0 or better (on a 4.0 scale) with consistent performance of 3.0 or better in prerequisite courses and other subjects related to the major field of study; and
- have volunteer, research, or work experience related to the major field of study.

Application

An application for online admission is reviewed when the file is complete. To be considered complete, the applicant's file will likely require all or some of the following:

Completed application, which may be found online for all programs (http://www.mcphs.edu/apply)

- Official reports of TOEFL, ITEP, PTE, MCPHS EPE, Duolingo or IELTS score, if applicable
- Letter(s) of recommendation from faculty or work/research supervisors, which solidly support the candidate's ability to complete coursework successfully in the chosen discipline
- Official transcripts from all colleges or universities attended, including those outside the United States
- Successful interview, if requested by Admission Office

The following are requirements for specific program applicants:

- Copy of a valid U.S. pharmacy license is required for Postbaccalaureate Doctor of Pharmacy Pathway program applicants.
- Applicants to all online Dental Hygiene programs must provide a copy of current license or proof of successful completion of the National Board Dental Hygiene Examination prior to participating in Orientation.
- Applicants to all online Medical Imaging programs must provide a current license and successfully completed one of the national certification/registry examinations in a medical imaging or therapeutics modality (AART, NMTCB, RDMS, CAMRT).
- Candidates to the ADN to Master of Science in Nursing Bridge program must have an earned AD from a state-approved program, a minimum cumulative GPA of 3.0 (on a 4.0 scale) in prelicensure nursing courses, and an RN license to practice nursing. A copy of the license must be provided.
- Candidates to the Master of Science in Nursing (MSN) programs must have an earned BSN (Bachelor of Science in Nursing) from an accredited college or university and RN license eligibility. A copy of the license must be provided. Master of Science in Nursing (MSN) candidates for admission also must have a cumulative academic grade point average of at least a 3.0 or better on a 4.0 scale.
- Candidates for transfer admission into the Bachelor of Science in Health Sciences Completion program must have a cumulative academic grade point average of at least 2.5 or higher on a 4.0 scale. Candidates also must hold an associate's degree in a health sciences field and be currently licensed in an area of healthcare.
- Candidates for admission to the Doctor of Acupuncture (DAc) Completion program must have satisfactorily completed at least three (3) years of undergraduate-level education (90 semester credits or 135 quarter credits) from an institution accredited or pre-accredited by an agency recognized by the U.S. Secretary of Education. In considering the acceptance of education and training obtained in foreign countries, credits earned at a foreign educational institution must be validated by a recognized, educational credentials, evaluation service. Prerequisite undergraduate-level education required for admission to the Doctor of Acupuncture must include chemistry, biology and psychology. In addition, candidates for admission must demonstrate satisfactory completion of a master's-level program in acupuncture or acupuncture and Chinese herbal medicine from an ACAHM accredited/pre-accredited program or institution.
- Candidates for the Doctor of Health Sciences program must have an earned master's degree in healthcare or a related field from a regionally accredited university and a 3.0 or higher on a 4.0 scale.

- Candidates for the Doctor of Healthcare Administration program must have an earned master's degree in healthcare, business, or a related field from a regionally accredited university and a 3.0 or higher on a 4.0 scale.
- Candidates for the Doctor of Medical Science program must have an earned MPAS (or equivalent) from a regionally accredited university, a 3.0 or better on a 4.0 scale. Graduate PA's must submit proof of state licensure (or equivalent) and current NCCPA certification.

For the most up-to-date admission requirements, visit http://www.mcphs.edu.

Transcripts
Transcripts must clearly indicate all credits and grades received and indicate coursework currently in progress. Degree(s) or diploma(s) that have been received, dates awarded, and major courses of study must be clearly noted.

All transcripts must be official and presented in a sealed envelope with the institution's stamp or a college/university official's signature on the closure. Photocopies and hand-carried documents not in a sealed, stamped envelope are not accepted. Official transcripts must be received no later than the add/drop deadline of the term of entry.

All applicants—including U.S. citizens and permanent residents—who have academic credentials from countries outside the United States are required to supply additional documents in order to be considered for admission.

Non-U.S. Transcripts
Candidates must submit official transcripts of coursework taken outside the United States to an approved credential evaluation service. Currently approved credential evaluation services are:

World Education Services (WES)
www.wes.org
https://www.wes.org/partners/credential-evaluation-requirements-for-the-massachusetts-college-of-pharmacy-and-health-sciences/

and

Education Credential Evaluators (ECE)
www.ece.org
https://accounts.ece.org/TPO/MCPHS-AF

A course-by-course evaluation is required for foreign transcript evaluation. Photocopies of transcripts and test scores are not accepted. Official transcripts for courses taken outside the United States also must be submitted directly to the Admission Office in addition to the WES or ECE evaluation.

Standardized Tests
Candidates for whom English is not the primary spoken language are required to take the TOEFL, ITEP, PTE, MCPHS EPE, Duolingo, or IELTS. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States (exclusive of ESL courses) and have scored 480 or higher on the Evidence-Based Reading and Writing section of the SAT, who have completed four years of study in a U.S.-accredited, IB or UK curricula outside the United States where English is the only medium of instruction (exclusive of ESL courses), or who have an earned degree (bachelor's or higher) from a U.S. college or university. (Please refer to the International Applicants section.)

Recommendations
Letters of recommendation must be sent from the recommender directly to the Admission Office in a sealed envelope with the recommender's signature over the closure. Personal copies, photocopies, or hand-delivered recommendations that are not in individual sealed, stamped/signed envelopes are not acceptable. Electronic or fax recommendations must be sent directly from the recommender to the Admission Office.

Graduate Transfer of Credit
Transfer credit for graduate-level coursework taken at other accredited institutions may be accepted for transfer toward a student's degree requirements pending approval of the academic department. Only courses that are clearly relevant to the student's program of study and have not been used to fulfill requirements for another degree may be considered for transfer credit. A maximum of 9 credit hours for Master of Science programs may be transferred for coursework in which grades of B or higher have been attained. - It is the responsibility of the academic department to determine the student's comprehension of the material before such hours are shown on the program of study for credit toward the degree. Research credit from another institution cannot be accepted for transfer credit.

Graduate Student Status
At the time of acceptance, each student is classified as regular, provisional, or nonmatriculating.

Regular Status
Candidates who have met all requirements for admission to a graduate degree program are admitted as regular students. The transcript must show sufficient and satisfactory undergraduate preparation in the major field, and (if applicable) a TOEFL, ITEP, PTE, MCPHS EPE, Duolingo, or IELTS score. (Please refer to the International Applicants section.)

A graduate student is considered to have full-time status if they are

- registered for 9 or more graduate credits, or
- registered for 6 or more graduate credits while appointed as a graduate assistant for 15 to 20 hours per week, or
- registered for CHE 880 Research, or
- registered for CHE 885 Literature-Based Research, or
- registered for CHE 895 Graduate Study Extension, or
- registered for PBH 895 Advanced Research Analysis & Interpretation Preparedness
- registered for DHY 895 Graduate Extension of Thesis, or
- registered for DRA 814 Data Analysis and Presentation Capabilities in Regulatory Affairs, or
- registered for MCR 804 Graduate Project in Clinical Research
- registered for PEP 840 Data Analysis and Presentation Capabilities in PEP, or
- registered for PEP 880 MS Thesis Research in Pharmaceutical Economics and Policy, or
- registered for PEP 890 PhD Dissertation Research in Pharmaceutical Economics and Policy, or
- registered for PEP 895 Graduate Study Extension, or
- registered for PSB 870 Practicum in Pharmaceutical, Regulator and Applied Sciences, or
- registered for PSB 872 Special Problems in Pharmaceutical Sciences (internships), or
- registered for PSB 880 Research, or
- registered for PSB 895 Graduate Student Extension (thesis/dissertation completion, no credit), or

Provisional Status
The University may, at its discretion, admit candidates into a graduate degree program on a trial basis as provisional students to ascertain their ability to do graduate work. Provisional students are those who have not met the minimum undergraduate grade point averages. Provisional status also may be applied to students whose credentials do not meet specific program requirements. Provisional students must adhere to regulations established by the Graduate Council and be working toward a degree on a full-time basis.

In order to achieve regular status, the student must complete the equivalent of two academic semesters (at least 9 credit hours) of full-time work with an overall grade point average of 3.0.

At any time during the first year of matriculation following completion of the above criteria, a student may initiate an Approval for Change of Student Status in the Office of Graduate Studies. However, the student's graduate advisor also may initiate the change and should do so when the student has met the required criteria, or may request the change of status before the student has completed 9 semester credits. The change from provisional to regular status must be approved by the Associate Dean of Graduate Studies. No student may remain on provisional status for more than two consecutive semesters. If a student admitted on provisional status fails to meet the conditions stated in the letter of admission, the student may be dismissed from the program.

Admission: International Applicants

International Freshman and First-Year Transfer Application

An application for first-year admission is reviewed when the file is complete. To be considered complete, the international freshman applicant's file must contain all of the following:

- Completed MCPHS Application (portal.mcphs.edu) or Common Application (www.commonapp.org)
- Official high school transcript(s) from all secondary schools attended; including most recent grades (seniors must include a list of senior courses)
- Official transcripts from colleges or universities attended, if applicable
- One letter of recommendation (from a mathematics or science teacher or a guidance counselor)
- SAT and ACT are optional. If an applicant chooses to submit either test, the score(s) will be considered as one of many factors that the admission committee uses to evaluate applicants.
- Candidates for whom English is not the primary spoken language are required to take the TOEFL, ITEP, Duolingo, OSSLT, or IELTS. This test requirement may be considered satisfied, on an individual basis, for applicants who have attended all four years of high school in the United States (exclusive of ESL courses) who have completed four years of study in a U.S.-accredited, IB or UK curricula outside the United States where English is the only medium of instruction (exclusive of ESL courses) or who have an earned degree (bachelor's or higher) from a U.S. college or university.

Transcripts - Transfer, Fast Track, Postbaccalaureate, and Graduate Applicants

Transcripts must clearly indicate all grades received and indicate coursework currently in progress. All transcripts must be official with the institution's stamp or a college/university official's signature.

All official transcripts from U.S. institutions must be submitted per the application requirements of the program to which a candidate is applying. Please see Admission, Freshman Admission, Transfer Admission, Fast Track, Postbaccalaureate and Graduate Admission for more information. Final high school transcripts stating graduation from secondary education must be sent directly from the student's high school prior to the start of classes if applicant does not have a prior bachelor's degree.

All applicants, including U.S. citizens and permanent residents, who have academic credentials from countries outside the United States are required to supply additional documents in order to be considered for admission.

Non-U.S. Transcripts

Candidates must submit official transcripts of coursework taken outside the United States to an approved credential evaluation service. Currently approved credential evaluation services are:

World Education Services (WES)
www.wes.org
https://www.wes.org/partners/credential-evaluation-requirements-for-the-massachusetts-college-of-pharmacy-and-health-sciences/

and

Education Credential Evaluators (ECE)
www.ece.org
https://accounts.ece.org/TPO/MCPHS-AF

A course-by-course evaluation is required for foreign transcript evaluation. Photocopies of transcripts and test scores are not accepted. Official transcripts for courses taken outside the United States also must be submitted directly to the Admission Office in addition to the WES or ECE evaluation.

Official Language Proficiency Test Scores - All Applicants

MCPHS requires all students whose first language is not English to submit official TOEFL (Test of English as a Foreign Language), IELTS (International English Language Testing System) or iTEP (International Test of English Proficiency), Duolingo English Test, OSSLT (Ontario Secondary School Literacy Test), or PTE Academic (Pearson Test of English) test scores, or pass the MCPHS English Proficiency Exam (EPE) prior to matriculation. This test requirement may be considered satisfied, on an individual basis, for applicants who have attended all four years of high school in the United States (exclusive of ESL courses), who have completed four years of study in a U.S.-accredited, IB or UK curricula outside the United States where English is the only medium of instruction (exclusive of ESL courses), who have an earned degree (bachelor's or higher) from a U.S. college or university who have scored 480 or higher on the Evidence-Based Reading and Writing section of the SAT, or who have scored 21 or higher on the English section of the ACT.

- The minimum required TOEFL score for all MCPHS undergraduate programs is 79 for the Internet-based exam. The minimum TOEFL score for all lab-based or clinical graduate programs is 90 on the Internet-based exam.
- The minimum required IELTS score is 6.5 for all undergraduate programs. The DPT, CAPPS and all lab-based or clinical graduate programs require a score of 7.
- The minimum required iTEP score is 4.0 for all undergraduate programs and 4.5 for lab-based and clinical graduate programs.
- The minimum required PTE Academic score for all undergraduate programs and non-thesis track lab-based programs is 58 and 73 for all thesis track lab-based and clinical graduate programs.
- The minimum required Duolingo score for all undergraduate programs and non-thesis track lab-based programs is 115, and 125 for all thesis track lab-based and clinical graduate programs.
- The minimum required OSSLT score for all undergraduate programs is 300.

MCPHS does not accept scores that are more than two years old.

Official score reports must be sent directly to the Admission Office from the testing agency.

TOEFL exam information may be found on the Internet at www.ets.org. IELTS exam information may be found at www.ielts.org. iTEP exam information may be found at www.itep.org. PTE Exam information may be found on http://pearsonpte.com/. Duolingo exam information may be found at https://englishtest.duolingo.com/home. OSSLT exam information may be found at https://www.eqao.com/the-assessments/osslt/.

Academic Bridge Program
Freshmen and first-year transfer students who are academically admissible but who have not reached Language Proficiency may be eligible for the Academic Bridge Program. The Academic Bridge program provides a full-time, structured transition-to-university curriculum, combining content courses for degree credit with English language courses taught by ESL faculty. For more information, go to https://www.mcphs.edu/admission-and-aid/international-applicants/bridge-program.

Advanced Course Credit
Students may be awarded a limited amount of MCPHS course equivalency credit in transfer for Advanced Placement (AP) courses, International Baccalaureate (IB) courses, CLEP exams, and/or college coursework taken during high school. Specific policies that govern MCPHS transfer credit equivalency are explained in detail in the Freshman and Transfer Admission sections of this catalog. An official transcript from a regionally accredited college or university must be submitted for dual enrollment credit. A grade of “C” or higher must be earned for all programs with the exception of Nursing. A grade of “C+” or higher is required for Nursing.

INTERNATIONAL PROGRAMS AND SERVICES

International programs and services are provided and coordinated by the Center for International Studies (CIS). This network of individuals and departments provides a spectrum of services to international students drawn to MCPHS from around the world, and to all students seeking educational and professional opportunities abroad. The Center provides services to students from enrollment through all aspects of the academic experience. It encourages collaboration among students, faculty, and alumni in achieving an international perspective on healthcare education, research, and practice. Core services provided include the following.

International Programs
The International Programs office serves as a resource for faculty and students who are interested in international service trips, exchange programs, clinical rotations, and travel courses. By working together to build and enhance international programs, our collaborative projects complement academic and co-curricular programs around the world.

Immigration and International Support Services
Immigration Services provides immigration advice and assistance to international students both before and after their arrival in the United States. The office creates F-1 I-20 forms and provides information regarding visa guidelines, travel signatures, employment opportunities, and Social Security cards.

International Academic Services
International Academic Services serves as a resource to faculty, staff and students for academic and intercultural issues specific to international students and exchange visitors. This office focuses on international student success efforts and internationally-focused collaborations on all MCPHS campuses.

COST OF ATTENDANCE AND ASSISTANCE

Tuition, Room and Board, Fees

2025-2026 Academic Program Tuition

Tuition charges for each academic term will be determined using the following criteria:

- Boston undergraduate students enrolled in 12 to 18 credits for fall and spring semesters will be charged the flat rate for qualifying programs. Graduate students are charged at the rate of $1,510 per credit other than the Master of Physician Assistant Studies program which is charged at the flat rate for 12-18 credits (during didactic years). Boston undergraduate students and Master of Physician Assistant Studies students enrolled in fewer than 12 credits for fall and spring semesters will be charged at the rate of $1,510 per credit.
- Boston undergraduate students and Master of Physician Assistant Studies students in more than 18 credits for fall or spring semester will be charged $1,510 per credit in addition to the flat tuition charge.
- Students whose registrations are in excess of the cumulative 69-credit threshold in the Boston PharmD program will be charged at the professional rate.
- Boston students enrolled in summer sessions will be charged at the per-credit rate except for majors in the School of Medical Imaging and Therapeutics, Dental Hygiene BS, and Nursing, which have a flat summer tuition rate for 9 to 18 credits. Students in these programs enrolled in more than 18 credits for the summer semester will be charged $1,510 per credit in addition to the flat tuition charge.
- Worcester and Manchester students enrolled in 9 or more credits per semester will be charged the flat tuition rate except for postbaccalaureate/undergraduate students.
- Worcester/Manchester postbaccalaureate/undergraduate students enrolled in 12 to 18 credits will be charged the flat tuition rate for fall and spring semesters. For the summer semester, the flat tuition rate for postbaccalaureate/undergraduate programs is for 9 or more credits.
- Students enrolled in all Online graduate degree and graduate certificate programs during the 2025-2026 academic year will pay $1,215 per credit hour. Rates per credit hour for online undergraduate and professional programs are noted below.

Online Programs

Graduate Programs ($1,215 /credit)

Doctor of Healthcare Administration (DHA)
Doctor of Health Sciences (DHS)
Doctor of Science in Physician Assistant Studies (DScPAS)
Master of Science in Clinical Research (MSCR)
Master of Business Administration in Healthcare Management (MBA)
Master of Science in Health Informatics
Master of Science in Clinical Management
Master of Science in Clinical Research
Master of Health Sciences (MHS)
Master of Public Health (MPH)
Master of Science in Dental Hygiene (MSDH)
Master of Science in Nursing (MSN) (Family Nurse Practitioner)
Master of Science in Nursing (MSN) (Psychiatric Mental Health Nurse Practitioner)
Master of Science in Radiologic and Imaging Sciences
Master of Science in Regulatory Affairs and Health Policy (MS)
Graduate Certificate in Clinical Management
Graduate Certificate in Clinical Research
Certificate in Healthcare Management
Graduate Certificate in Health Policy
Graduate Certificate in Public Health
Graduate Certificate in Regulatory Affairs
Certificate of Advanced Graduate Studies in Nursing (Family Nurse Practitioner Track)
Certificate of Advanced Graduate Studies in Nursing (Psychiatric/Mental Health Nurse Practitioner Track)

School of Professional Studies

Self-Paced Online Prerequisite Courses for Non-Matriculated Students ($545/credit)
On-Campus Labs ($925)

Postbaccalaureate Programs

Postbaccalaureate Doctor of Pharmacy Pathway ($1,215/credit)

Bridge Programs ($1,215 credit)
AD to Master of Science in Dental Hygiene
ADN to Master of Science in Nursing (Family Nurse Practitioner and Psychiatric/Mental Health Nurse Practitioner)
AS to MS in Radiologic and Imaging Sciences

Degree Completion Programs
Bachelor of Science in Health Sciences ($545/credit)
Bachelor of Science in Healthcare Management ($545/credit)
Bachelor of Science in Dental Hygiene ($925/credit)
Bachelor of Science in Diagnostic Medical Sonography, Nuclear Medicine Technology, Radiography, Radiation Therapy and Magnetic Resonance Imaging ($925/credit)
Bachelor of Science in Respiratory Therapy
Doctor of Acupuncture Completion ($870/credit)

Undergraduate Certificate Programs
Advanced Certificate in Magnetic Resonance Imaging (MRI) ($545/credit)
Advanced Certificate in Computer Tomography (CT) Imaging ($545/credit)
Advanced Certificate in Nuclear Medicine Technology (NMT) ($545/credit)
Advanced Certificate in Mammography ($545/credit)

Other program-specific tuition policies are noted below.

PROGRAM/DEGREE	FLAT TUITION RATE	PER CREDIT HOUR
Bachelor of Science	$41,130	$1,510
Chemistry		
Dental Hygiene*		
Global Healthcare Management		
Healthcare Management		
Health Psychology		
Health Sciences		
Medical and Molecular Biology		
Medical Imaging and Therapeutics*		
Nursing*		
Pharmaceutical Business		
Pharmaceutical Sciences		
Pharmacology/Toxicology		
Premedical Health Studies		
Public Health		
** These programs include a mandatory summer term with an additional $18,450 tuition charge.*		
Doctor of Pharmacy (PharmD)		
Boston (entry-level program)		
0–69 credits	$41,130	$1,510
70+ credits (professional rate)	$48,930	$1,510
Clinical rotations (all charged per credit)		$1,510
Postbaccalaureate Doctor of Pharmacy Pathway		
Worcester/Manchester three-year program	$64,980 (annual)	$1,510
Doctor of Optometry (OD)	$53,760 (annual)	$1,510
Doctor of Physical Therapy (DPT)	$60,600 (annual)	$1,510
Acupuncture students who first attended prior to Fall 2025		
Master of Acupuncture		
Year 2:	$35,280/academic year	$870
Year 3:	$23,520/academic year	$870
Master of Acupuncture and Chinese Herbal Medicine		
Years 2-3:	$39,150/academic year	$870

Master of Acupuncture/Doctor of Acupuncture		
Year2:	$35,280/academic year	
Year 3:	$23,520/academic year	
Year 4:	$870 per credit	
Master of Acupuncture and Chinese Herbal Medicine/Doctor of Acupuncture		
Years 2-3:	$39,150/academic year	
Year 4:	$870 per credit	
Acupuncture students in all programs entering FA25 or later	$660 per credit	
Master of Physician Assistant Studies (MPAS)		
Boston		
Didactic years	$48,930	$1,510
Clinical rotations (all charged per credit)		$1,510
Manchester/Worcester (Postbaccalaureate)	$61,290 (annual)	$1,510
Master of Science in Occupational Therapy (MSOT)	$54,060 (annual)	$1,510
Master of Science and PhD graduate programs		$1,510

Certificate programs	
Advanced Medical Imaging (Computed Tomography and Magnetic Resonance Imaging)	$545
Health Policy	$1,510
Regulatory Affairs	$1,510
Clinical Research	$1,510
Advanced Pharmacy Practice	$1,510
Certificate of Advanced Graduate Study in Chinese Herbal Medicine	$660
Non-matriculating students	$1,510
Course audit fee	$1,007

Fees

Acceptance deposit fee (nonrefundable—deposit will be applied toward tuition)	
Boston, Worcester, Manchester, and Online campuses	$500-$750
Orientation fee (required of all new students)	$160
Comprehensive service fee (annual)	$1,350-(Full-time)
Incorporates registration, technology, and student activity fees	$720(Part-time)
Boston campus	
Students enrolled at least half time (greater than 6 credits)	$675/semester
Students enrolled less than half time (6 or fewer credits)	$360/semester
Worcester campus	
Students enrolled at least half time (greater than 6 credits)	$450/semester
Students enrolled less than half time (6 or fewer credits)	$240/semester
Manchester campus	
Students enrolled at least half time (greater than 6 credits)	$450/semester
Students enrolled less than half time (6 or fewer credits)	$240/semester
Dental Hygiene clinical equipment fees	
First-year fast track BS and second-year BS	$3,850
Second-year fast track BS and third-year BS	$500
Acupuncture Equipment fee (first year)	$350
Boston PharmD clinical year fee	$2,412/year
Boston Physician Assistant clinical year fee	$,2475/year
Nursing fee	
Boston (final four semesters)	$530/semester
Worcester/Manchester (all four semesters)	$530/semester
Optometry equipment fee (first year)	$1,750/semester

Optometry equipment fee (second year)	$1,600/semester
Physical Therapy equipment fee (first year)	$400
Physical Therapy equipment fee (second year)	$400
Physician Assistance equipment fee (first year)	
Boston	$900
Worcester/Manchester	$925
Pharmacy Certification Fee (Worcester/Manchester first year PharmD)	$130
Acupuncture Malpractice Insurance fee	$100
Online Technology Fee	$575
Study abroad fee	$1,000
Graduation fee	$375

Residence Hall Fees (Room and Board)

Room reservation deposit fee (nonrefundable but will be applied toward residence hall fees)	$300

Room fee (Boston campus)

Fennell Building	
Academic-year contract	$8,850/semester
Summer only	$2,900/session
Tree House	
Double (academic-year contract)	$9,045/semester
Single (academic-year contract)	$9,720/semester
Matricaria Building	
Double (academic-year contract)	$8,9,045/semester
Single (academic-year contract)	$9,720/semester
Double (summer only)	$3,090/session
Single (summer only)	$3,220/session
Emmanuel Apartments	
Double (academic-year contract)	$9,285/semester
Single (academic-year contract)	$10,060/semester

Room fee (Worcester campus)

Borysek Living and Learning Center, 12-month contract	
1 Bedroom	$19,980
Type A—2-person	$19,980
Type A—3-person	$18,060
Type A—4-person	$18,060
Type A—6-person	$12,330
Type B—2-person	$15,390
Type B—6-person	$11,400
Clinical Semester	$4,050
Lincoln Square	
Standard—1-person	$14,070
1-person – 1-bedroom	$19,980
50 & 60 Salisbury Street	
Type A—1-bedroom single	$21,150
Type B—2-bedroom–A single	$19,980
Type B—2-bedroom–B single	$19,290
72 Salisbury Street	
Type A	$19,980
Type B	$18,270
Lancaster Street	
Single apartment	$18,270

Main Street Micro Lofts	
Single Unit- 1-person	$18,270
2-Bedroom Townhouse	$14,160 (per person)

Boston board fee

Fennell/Treehouse (academic-year contract)	$2,458/semester
Matricaria/Emmanuel (academic-year contract)	$1,145/semester

Residence hall dues (Boston and Worcester campuses) $186(BOS split 2 terms / WOR split 3 terms)

Health Insurance

Per year	$3,896

According to the Commonwealth of Massachusetts and MCPHS policy, all Boston, Worcester, and Manchester students (regardless of enrollment) must be covered by a comprehensive health insurance program. The University makes available a general health insurance program that meets these standards. This policy is provided by Blue Cross Blue Shield and administered by University Health Plans. The annual coverage begins August 15, 2025, and runs through August 14, 2026.

All international students must enroll in the Blue Cross Blue Shield plan except for:

- Students whose sponsoring institutions have a signed agreement with MCPHS that complies with the University's health insurance waiver requirements
- Students insured on an embassy sponsored plan
- International students that are covered by a US health insurance plan that meets the Massachusetts Student Health Insurance Regulations and is comparable to the Student Health Insurance Plan. Please note that the MCPHS Student Health Insurance Plan meets the J1/J2 visa requirements.

International students who do not fall under one of the conditions above must purchase the University's student health insurance plan and therefore are not eligible for a waiver.

Criminal Background Information Fees

Any out-of-pocket expenses for criminal or sex offender background checks that may be required by clinical rotation sites, including, without limitation, Criminal Offender Record Information (CORI), Sex Offender Registry Information (SORI) checks, or level 1 background checks, must be paid by the student.

Credit Cards

The University accepts MasterCard, Visa, Discover, and American Express through its online payment provider. Credit and Debit card payments are subject to a service fee equal to 2.85% of the payment amount (minimum $1.00 fee). The service fee will be charged and retained by the online payment provider. Service fee percentage is current as of May 30, 2025 and is subject to change.

Payment Schedule

Tuition and applicable fees are due and payable on a semester basis, prior to the following deadlines:

Fall semester:	August 1
Spring semester:	December 1
Summer semester:	May 1

Students not adhering to these deadlines may be administratively withdrawn from the University.

For students with outstanding balances, the University reserves the right to refuse

- to release official transcripts,
- to release the diploma certifying graduation,
- to complete board examination certification, or
- to register the student for any additional coursework.

A late payment fee will be assessed for all outstanding balances immediately following the due date.

Late Fees

Late payment fee	$250
Late Registration fee	$150
Returned check fee	$30
Account Placement Fee	$100

If a student has more than two checks returned by the bank, he/she will be required to make all future payments by money order, certified bank check, Discover, MasterCard, Visa, or American Express. Credit and Debit card payments are subject to a service fee equal to 2.85% of the payment amount (minimum $1.00 fee). The service fee will be charged and retained by the online payment provider. Service fee percentage is current as of May 30, 2025 and is subject to change.

PLEASE NOTE: Students who have not paid their balance in full by the deadlines above, may also be subject to administrative withdrawal from their programs.

Other Estimated Expenses
In addition to the direct costs of tuition, fees, and room and board, students also should budget for indirect expenses, such as books and supplies, transportation expenses, and other miscellaneous expenses that will vary depending on personal spending habits and choices.

Add/Drop Period
Add/drop period deadline for all programs is specified for each academic term, usually within the first week of classes. During add/drop period, tuition is fully refundable for a course withdrawal. Student accounts are adjusted automatically, and any additional charges must be paid at the time of the transaction. After the add/drop deadline, there will be no tuition refund for individual course withdrawal.

University Withdrawal, Leave of Absence and Refund
The following graduated scale of charges for tuition and residence hall fees is used for purposes of determining refunds for students completely withdrawing from the University during the semester, as well as students taking a Leave of Absence:

PERIOD OF ATTENDANCE	REFUND
Add/drop period	100%
First week after the add/drop period	75%
Second week after the add/drop period	50%
Third week after the add/drop period	25%
Fourth week and beyond after the add/drop period	0%

Students who withdraw from the University, please review Withdrawal and Approved Leave of Absence from the University, under the Student Financial Services section of the catalog.

Students taking a Leave of Absence from the University must contact their Academic Dean to complete the official process. Approved refunds are computed on the basis of the date appearing on the form. *Absence from class without completing the form does not constitute withdrawal or approved Leave of Absence from the University. Students should contact Student Financial Services to determine how this withdrawal affects their financial aid.*

Student Financial Services

Applying for Financial Aid
The Office of Student Financial Services at MCPHS is dedicated to providing comprehensive education financing counseling to students and their families. The staff is available to assist students by answering questions regarding the aid application process, their financial aid award, and their student account.

The University offers a variety of scholarships, loans, and employment opportunities to assist students in meeting the costs of education that cannot be met through the family's own resources. To apply for financial aid for the 2025-2026_academic year, the current application required is the 2025-2026_Free Application for Federal Student Aid (FAFSA). The FAFSA may be completed online at www.studentaid.gov. Students who submitted a 2025-2026_FAFSA should use their FSA ID from the Department of Education to complete the online renewal application.

The Office of Student Financial Services will notify students if additional information or documentation is required to complete their financial aid applications. Students should not send additional documentation unless requested to do so by Student Financial Services.

Notification of award: Notification of award letters will be emailed to students once the financial aid file is complete. It is recommended that students complete the FAFSA as soon as it becomes available (typically opens October 1 of each year). The student's demonstrated need is recalculated each year, and award amounts are contingent upon the University's level of allocated funds.

Eligibility for Financial Aid

To be eligible for federal student aid, the student must be
- a citizen, permanent resident, or other eligible noncitizen of the United States;
- registered with the Selective Service System or exempt from registration;
- not in default on any federal student loan or owing a refund on any federal grant;
- not convicted of any federal or state drug offense while receiving federal student aid; and
- in good academic standing.

*For the 2025/26 award year Selective Service and Drug requirements no longer require resolution.

By completing the application instructions previously outlined, students are automatically considered for all possible funding opportunities, including those offered by the federal government, the state (if eligible), and the University. Please keep in mind that students who meet the March 15 financial aid application deadline are given priority consideration for all available funds, which are limited by allocations and budgets.

Degree Standing
A student's standing as an undergraduate or graduate student is an important factor in the financial aid application and award process. The FAFSA asks students to identify whether they are in an undergraduate or graduate/professional program. These questions should be answered based on the following criteria:

Undergraduate Students
Students in the following programs are considered undergraduate students for financial aid purposes:
Chemistry
Dental Hygiene
Diagnostic Medical Sonography
Global Healthcare Management
Healthcare Management
Health Psychology
Health Sciences
Magnetic Resonance Imaging
Medical and Molecular Biology
Nuclear Medicine Technology
Nursing
Pharmaceutical Business
Pharmaceutical Sciences
Pharmacology/Toxicology
PharmD–Boston campus: Years I–IV
Premedical Health Studies

Public Health
Radiation Therapy
Radiography
Bachelor of Pre-Dental-Dental Hygiene
Bachelor of Science in Health Care Management
Postbaccalaureate Bachelor of Science in Nursing
Bachelor of Science in Health Sciences, Acupuncture Pathway

Graduate Students
Students in the following programs are considered graduate/professional students for financial aid purposes:
Master of Health Sciences
Master of Physician Assistant Studies (Boston and Manchester/Worcester)
Master of Public Health
Master of Regulatory Affairs and Health Policy
Doctor of Acupuncture
Doctor of Acupuncture & Integrative Health
Doctor of Health Sciences
Doctor of Healthcare Administration
Doctor of Pharmacy (PharmD)–Boston campus: Years V and VI
Doctor of Pharmacy (PharmD)–Worcester/Manchester campuses: all years (unless advised by Student Financial Services)
Doctor of Optometry
Doctor of Physical Therapy
Master of Science in Dental Hygiene
Master of Science in Nursing
Master of Science / PhD in Medicinal Chemistry
Master of Science / PhD in Pharmaceutical Economics and Policy
Master of Science / PhD in Pharmaceutics
Master of Science / PhD in Pharmacology
Master of Science in Clinical Research
Master of Science in Occupational Therapy
Master of Acupuncture
Master of Acupuncture and Chinese Herbal Medicine
Master of Business Administration in Healthcare Management
Master of Science in Clinical Management
Master of Science in Personalized Medicine
Doctor of Science in Personalized Medicine
Doctor of Science in Physician Assistant Studies

Students whose program is not listed here should contact the Office of the Registrar for assistance in identifying their degree standing.

Student Status
Doctor of Pharmacy (PharmD)–Boston: Years I through IV are classified undergraduate, and full-time status is a minimum of 12 credit hours; at the point a PharmD student attains fifth-year status, full-time status is a minimum of 9 credit hours and are classified as graduate students. Full time status for rotations in Year 6 is a minimum of 6 credit hours.

Doctor of Pharmacy (PharmD)–Worcester/Manchester: Year I is classified undergraduate for students entering the program with a minimum of 72 credits, and full-time status is a minimum of 9 credit hours. Year 1 is classified as undergraduate for students entering the program with less than 72 credits, and full-time status is a minimum of 9 credit hours.

AS to Master of Science in Dental Hygiene Bridge Program Online: Year 1 is classified as undergraduate, and full time status is a minimum of 12 credit hours; subsequent years are classified as graduate and full status is a minimum of 9 credit hours.

For all baccalaureate degree programs, students are classified as undergraduates, and full-time status is a minimum of 12 credit hours.

For all masters, MS, other doctoral, and PhD programs, full-time status is a minimum of 9 credit hours.

Dependency Status
For the 2025-2026 school year (July 1, 2025 through June 30, 2026), the U.S. Department of Education considers the following students to be independent of their parent(s) for purposes of awarding federal financial aid:

- Students who were born before January 1, 2002

- Students who are orphans or wards of the court, or were wards of the court at any point during or after age 13
- Students who are veterans of the U.S. Armed Forces
- Students who have children, if they provide more than half of the support for the child
- Students who have dependents (other than a child or spouse) living with them, if they provide more than half of the support for the dependent
- Students who are married
- Students who will be graduate/professional students in 2025-2026_(see Degree Standing to determine who is considered a graduate/professional student for financial aid purposes)
- Students who are serving in the U.S. Armed Forces or are National Guard or Reserves enlistees for purposes other than state or training
- Students who are or were emancipated minors as determined by a court
- Students who are or were in a legal guardianship on the date the student became an adult, as determined by a court
- Students who are or were considered an unaccompanied youth who was homeless on or after July 1, 2022

As the criteria above indicate, financial independence is not one of the criteria used in determining whether a student is considered dependent or independent. Parental data must be provided on the FAFSA for students who are unable to answer "yes" to any of the listed criteria. The University uses the U.S. Department of Education definition of dependency status for all federal, state, institutional, and private financial aid programs. Students should refer to the FAFSA for specific details on each of the above criteria or contact the Office of Student Financial Services for assistance in determining status.

Prior Bachelor's Degree
Students who are in possession of a baccalaureate degree prior to their enrollment at the University are not eligible for certain grant programs, including the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, and state scholarship/grant programs.

Massachusetts Residency
Massachusetts residency is defined as having resided in Massachusetts for purposes other than attending college for at least one year prior to the beginning of the academic year. (The beginning of the academic year is defined as July 1 by the Commonwealth.) Parents of dependent students also must have resided in Massachusetts for at least one year prior to the beginning of the academic year. Programs funded by the Commonwealth are limited to undergraduate students without a prior bachelor's degree.

Yellow Ribbon Program for Veterans
MCPHS participates in the Yellow Ribbon Program. Only Veterans entitled to the maximum benefit rate, as determined by service requirements, or their designated transferees may receive this funding. Details on eligibility can be found, here: https://www.benefits.va.gov/gibill/yellow_ribbon.asp. In order to receive a full acceptance of a Yellow Ribbon Scholarship, students must submit their Certificate of Eligibility for Post-9/11 GI Bill®* from the VA to the University. For additional details or questions regarding eligibility, please email: sfs@mcphs.edu.

*GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at https://www.benefits.va.gov/gibill.

Enrollment Status
Financial aid awards are based on full-time attendance at the University. Full-time attendance, during the fall semester and the spring semester, is defined as a minimum of 12 credits for undergraduate students and 9 credits for graduate students (see Degree Standing to determine graduate/professional student status for financial aid purposes). Enrollment is reviewed for all students receiving financial aid at the end of the official add/drop period each semester, at which time adjustments to financial aid awards are made.

The following aid programs require full-time enrollment. Less than full-time enrollment will result in complete loss of the award:
- Massachusetts State Funds
- Health Professions Loan
- Nursing Student Loan
- Most other state grants

The following programs are prorated based on enrollment status. For these programs, undergraduate students will receive a portion of the awarded amount if the student enrolls less than full-time for a given semester:
- Federal Pell Grant
- MCPHS Need-Based Awards
- MCPHS Merit-Based Awards

The following programs require at least half-time enrollment. Less than half-time enrollment will result in complete loss of the award. Half-time enrollment is defined as 6 credits for undergraduate students and 4.5 credits for graduate students:

- Federal Stafford Loans (Subsidized and Unsubsidized)
- Federal PLUS loan
- Many alternative/private loans

Graduate Students
Graduate students who want to apply for assistantships, scholarships, and fellowships should contact the Associate Dean for Graduate Studies.

International Applicants
Financial aid in the form of grants and loans are generally not available to international students. Students may qualify for a Private Educational Loan with a credit worthy U.S. Citizen Co-signer.

Satisfactory Academic Progress
The University is required to establish minimum standards of satisfactory academic progress (SAP) for students receiving financial aid. The University applies these standards to all federal, state, and institutional funds.

The Office of Student Financial Services will disburse financial aid only to those students who are in good academic standing and are making satisfactory progress toward completion of their degree.

Requirements
A student is not making satisfactory academic progress if any of the following conditions exist:

- The student's cumulative grade point average (GPA) is below 2.0 at the end of the second year of their academic program. Grade point averages are reviewed by the Academic Standing Committee at the end of each semester.
- The student's earned credits (completed with a passing grade) are less than 67% of all attempted credits (coursework), as calculated at the end of each semester.
- The student has exceeded the maximum time frame of attempted credits (150%) of the published length of their degree program.

Satisfactory academic progress is reviewed at the end of each semester (payment period).

The following describes how types of coursework are used in the SAP calculation:

- Dropped coursework is not included.
- Failing grades (F) are included in the GPA and in earned and attempted credits.
- Withdrawals are included in earned and attempted credits.
- Repeated coursework is included in the GPA and in earned and attempted credits.
- Pass/fail coursework is included in earned and attempted credits.
- Audit coursework is not included.
- Colleges of the Fenway (COF) coursework is included in the GPA and in earned and attempted credits.
- Transfer coursework (applicable to current program) is included in earned and attempted credits.
- Satisfactory/unsatisfactory coursework (graduate programs only) is included in earned and attempted credits.
- Remedial coursework is not included.

If a student is not making satisfactory academic progress, they will be placed on financial aid warning. A student then has one semester to make satisfactory progress. If, after one semester on financial aid warning, a student is not making satisfactory academic progress, the student becomes ineligible for aid and will be notified by email.

Students who are ineligible for financial aid because they are not making satisfactory academic progress may appeal to regain eligibility for the subsequent semester to achieve the SAP standards. Students may also continue to take coursework without the use of financial assistance until eligibility is reinstated by achieving the required SAP standards, subject to the approval of the university and the student's academic department.

Appeals are considered when a student can demonstrate that an extraordinary circumstance existed (for example, student illness, the illness or death of a family member) that prevented the student from achieving satisfactory academic progress. Students considering an SAP appeal should contact the Office of Student Financial Services to make an appointment to discuss the situation. Appeals are due by the posted deadline in the email notification of academic status and loss of aid eligibility; however, an appeal does not exclude the student's payment responsibility associated with the semester's bill due date. Incomplete appeals will not be reviewed. Students with an approved appeal will be placed on financial aid probation and have one semester to achieve satisfactory academic progress. If the student fails to achieve the SAP standards after probation, then they will not be eligible for aid until the standards are achieved. If MCPHS determines, based on the appeal, the student will require more than one academic semester to meet progress standards, the University may grant a subsequent appeal; if an

academic plan is developed for the student, the student must successfully complete the program in the specified time. Students will be reviewed at the end of one academic semester to determine if they are meeting the requirements of the plan. If the student is meeting the requirement of the academic plan, the student is eligible to receive Title IV funds as long as the student continues to meet those requirements, and is reviewed according to the requirements detailed in the plan. Non-matriculating students are not eligible for financial aid.

Process for Awarding Financial Aid
In selecting financial aid recipients, primary emphasis is placed upon financial need, availability of funds, the student's academic achievement, and/or satisfactory academic progress.

Determining Need
To determine a student's need, the University uses the Free Application for Federal Student Aid (FAFSA). The information provided on the FAFSA is used to determine what amount a family can be expected to contribute toward the cost of attending the University (the expected family contribution, or EFC).

The University uses the standard federal formula (known as the federal methodology, or FM) in computing the expected parental and student contributions. Some of the factors used in the analysis include income, assets, family size, and number of family members in college. The student's expected contribution is added to the parental expected contribution to produce the total expected family contribution. The student's financial need is determined by subtracting the expected family contribution from the total cost of attending the University. The cost of attendance includes tuition and fees as well as an allowance for room and board, books and supplies, travel, federal loan fees, and other education-related expenses.

The Financial Aid Package
After the student's financial need is determined, Student Financial Services will develop a financial aid package for the student. MCPHS utilizes scholarships, loans, and employment opportunities to assist students in meeting as much of their demonstrated financial need as possible. The University makes every effort to distribute the available funds in an equitable fashion in order to assist the greatest number of eligible students. The total amount of aid a student receives may not exceed his or her total cost of attendance.

The University offers a variety of scholarships, which are funded through endowments, gifts, and other monies raised by the University. Scholarships are awarded primarily based on academic achievement and financial need. Students applying for financial aid are automatically considered for each scholarship for which they may qualify. Major programs providing financial aid to students are described in the 2024-2025 MCPHS Student Financial Services handbook.

Merit Aid
University Merit Aid is determined at the time of admission. Students are required to maintain a 2.5 cumulative GPA in order to continue receiving their merit award. Students who fail to meet the 2.5 GPA requirements will have one semester to improve their GPA to a 2.5 cumulative or the merit award will be cancelled and cannot be reinstated.

Private Funding Sources
In addition to the federal, state, and University programs offered through the University's financial aid application process, students also are encouraged to apply for outside aid to help meet the costs of education. Several free scholarship search services are available through the Internet (please visit the University's website at www.mcphs.edu for further information). In addition, most high school and public libraries have resources detailing private scholarship opportunities.

Verification Process
Each year the federal government and/or MCPHS selects students who have completed the FAFSA for verification. The verification process simply requires the University to review supporting documents to verify the information reported on the FAFSA for the parent(s), student, and spouse.

Information that may be verified includes adjusted gross income, federal taxes paid, education credits, the number of individuals in the household, the number of individuals in the household who are enrolled at least half time in college, high school completion status, identity / statement of educational purpose, and other information deemed necessary for review.

If you are selected for verification, you will be notified via email of additional documents that you must submit to complete your financial aid file.

The IRS Data Retrieval Tool allows students and parents to access the IRS tax return information needed to complete the FAFSA. Students and parents may transfer the data directly into their FAFSA if certain criteria are met. MCPHS encourages all students and families to utilize the IRS data retrieval process, which is the preferred method for FAFSA filers to report federal tax information. If the IRS data retrieval process is not used on a FAFSA transaction, then the student and/or parent may need to obtain federal tax return transcripts from the IRS. Students and/or parents may complete online requests for a federal tax

return transcript at www.irs.gov. Online requests are considered the quickest approach to obtain a federal tax return transcript. The request may take up to 10 days to fulfill.

MCPHS will not disburse federal, state, and institutional financial aid to a student's account until the student completes the verification process. Failure to complete the verification process will result in cancellation of federal financial aid. The University reserves the right to verify any file that appears to contain discrepant information. In addition to verifying a student's application data, MCPHS is required by federal law to resolve any conflicts of information that become evident as part of the application review process. All discrepancies must be resolved prior to disbursement of Title IV aid to a student's account.

Additional Student Financial Services

Appeal Process
Students and parents may appeal their financial aid award if there is a significant and unforeseen change in circumstances or if there is information that was not provided on the original application materials. For additional details regarding the financial aid appeal process, refer to the 2025-2026 MCPHS Student Financial Services handbook. All appeals must be in writing and must include documentation of the reasons for requesting the reevaluation of the financial aid package as well as complete tax transcripts and W-2s (if necessary) for the student and parent (if the student is a dependent).

Applying Financial Aid to Your Student Account
If all necessary paperwork has been submitted by the student, financial aid will be applied to a student's account after add/drop and after attendance has been verified by the Registrar's office each semester. Failure to submit the necessary paperwork will result in the delay and possible cancellation of the student's financial aid.

Refunds
Students will automatically receive a refund for any excess funds (credit balance) on their student account each semester. Refunds are available as soon as administratively possible following verification of student enrollment and disbursement of financial aid funds. Students should be sure to make arrangements each semester for the purchase of books and payment of rent (if housed off campus), since refunds are not available during the first few weeks of each academic term. It is highly recommended for ease in refund processing that students sign up for direct deposit though Self-Service.

Late Payment Fees
Students with outstanding student account balances will be charged a late payment fee. To avoid late payment fees, students must ensure that all financial obligations (including tuition, fees, health insurance fees, and housing charges) will be met by the dates specified in the Tuition section of this catalog.

Account Placement Fee
An Account Placement Fee will be applied to any student's account not paid by the scheduled due date and placed with Heartland/ECSI for assistance with the collection efforts on the outstanding balance. This fee is in addition to the Late Payment Fee and cannot be waived.

Students receiving financial aid and/or private alternative loans must ensure that proper documentation is completed and aid and/or loan funds are received by the University on or before the payment due date in order to avoid a late fee.

Students participating in a payment plan must ensure that the payment plan budget for each term will cover all outstanding charges. Payment plan budgets that will not result in a paid-in-full status by the end of the payment term will be assessed a late payment fee.

For students with outstanding balances, the University reserves the right to refuse

- to release official transcripts,
- to release the diploma certifying graduation,
- to complete board examination certification, or
- to register the student for any other coursework
- to access campus wide systems such as Blackboard, Self-Service and University E-mail
- to view final grades

Students wishing to appeal late payment fees are required to do the following:

- Pay the student account balance due in full (less the late payment fee).

Submit the following in writing to the Office of Student Financial Services:

- Student name
- Student ID number

- The reason(s) or documentation that contributed to the circumstances of the late payment fee

The student will be notified of the decision concerning the appeal of a late payment fee.

Student Account Statements
Student account statements are sent electronically on a monthly basis to students with a balance due. Statements include all recent account activity, including charges, payments, disbursements of financial aid and loan funds, and account adjustments. Balances due must be paid by the payment due date to avoid late payment fees. Students have the ability to view real-time charges and updates through the Student Account Center as well as grant shared access to their account.

The University accepts electronic funds transfer, MasterCard, Discover, Visa, and American Express payments via the Student Account Center. Credit and Debit card payments are subject to a service fee equal to 2.85% of the payment amount (minimum $1.00 fee). The service fee will be charged and retained by the online payment provider. Service fee percentage is current as of May 30, 2024 and is subject to change. Alternative methods of payment include wire transfers and check payments.

Work-Study
Students working in a Federal Work-Study Program position are paid through a weekly paycheck based on hours actually worked. These funds are not credited to the student's account.

Withdrawal and Approved Leave of Absence from the University
Students withdrawing or taking a leave of absence from the University who have been determined to be eligible for federal financial aid are subject to certain provisions surrounding the calculation of their federal aid eligibility. A federally determined formula is used to calculate the amount of federal aid a student is eligible to receive based on the portion of the semester completed before the withdrawal. If a student received more assistance than was earned, the unearned funds must be returned to the Department of Education.

The amount of aid a student is eligible to receive is based on the percentage of the semester that was completed prior to the initiation of the withdrawal process. For example, if 40% of the semester has passed when the withdrawal process is initiated, then 40% of the federal aid originally scheduled for disbursement has been earned. Once more than 60% of the semester has been completed, a student is considered to have earned 100% of the federal aid they were eligible to receive.

If it is determined that a student received more federal aid than was earned, MCPHS will return the unearned funds based on a formula comparing institutional charges with the unearned percentage of funds. If MCPHS must return a portion of the funds, the removal of those funds from the student's account will create a balance due, which the student will be required to pay.

To find out how a withdrawal during the first 60% of the semester may affect a financial aid award, students should make an appointment to discuss the situation with their Student Financial Services representative.

For additional information, please review the University Withdrawal, Leave of Absence and Refund under the Tuition, Room and Board, Fees section of the catalog.

Veterans' Affairs (VA)

Currently enrolled or accepted students with Veterans Affairs (VA) benefits must submit a copy of their VA Certificate of Eligibility (COE) to the Registrar's Office via e-mail, fax, or mail. The Registrar's Office may require additional information to properly certify enrollment. Students must complete a Veterans Affairs Request form to request that their certification of enrollment be submitted to the VA. The form must be completed each semester a student is enrolled, no later than 60 days prior to the start of the semester. The request form and additional support resources provided by the University Educations Team (UVET) are available online at https://www.mcphs.edu/academics/registrar/veterans-affairs. The UVET is comprised of faculty and staff members that contribute to the university's overall mission of support and advocacy for our student veterans and other military-associated students.

Prior Credit
MCPHS maintains written records of previous education and training of the veteran or eligible person and indicates appropriate credit has been given for previous education and training.

Students Receiving Veterans Benefits under 38 U.S.C. Ch. 31 and 38 U.S.C. Ch. 33
MCPHS will permit any covered individual to attend or participate in the course of education during the period beginning on the date on which the individual provides to the educational institution a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 (a "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' (VA) website – eBenefits, or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

The date on which payment from VA is made to the institution.
90 days after the date the institution certified tuition and fees following the receipt of the certificate of eligibility.

MCPHS will not impose any penalty, including, the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement funding from VA under chapter 31 or 33.

Delayed VA Payments
Under S2248 PL 115-407 Section 103, MCPHS will not impose a late fee, denial of access to facilities, or other penalty against a veteran or eligible dependent due to a late payment of tuition and/or fees from the VA up to the certified benefits amount. Any portion of the student bill not covered by VA benefits is still expected to be settled by the due date.

Students are responsible for all charges and fees not covered by the veteran or other eligible beneficiary's VA educational benefits (for example, housing, meal plans, or beneficiary is less than 100% eligible).

ACADEMIC POLICIES

General University policies and procedures are stated below. Students should note that within individual programs and schools there might be additional requirements or variations of these policies. The ultimate responsibility for complying with academic policies and fulfilling graduation requirements rests with the individual student.

Calendar, Enrollment, and Attendance

Academic Calendar

The academic calendar is a live document available at https://www.mcphs.edu/academics/academic-calendar. Students are required to review details of the calendar during the web check-in process at the start of each semester. Changes to the published academic calendar are communicated to students via an email sent from the Registrar.

Enrollment

Registration for Classes
Prior to the start of preregistration for each term, the Registrar's Office will notify students (via MCPHS email) of the registration schedule. The email will indicate if students will be block registered for required courses or if students need to meet with an Academic Coach or Program Director before registering for classes. Students who register on time receive an electronic bill from Student Financial Services. Students who miss the registration period are charged a late registration fee. Students who have outstanding balances are not allowed to register or attend classes until all bills are paid in full.

Double Majors (Boston)
Students enrolled in selected BS degree programs (Boston) may declare a double major. Accelerated, degree completion, online, MPAS, Nursing, PharmD, Premedical Health Studies, and Health Sciences programs cannot be used in double majors. In addition, a double major in Public Health and Health Psychology is not available. Students who declare a double major cannot complete a minor.

In order to be eligible for a double major, the student must have a grade point average (GPA) of 3.2 or higher and have completed at least 30 credits. Once students have been approved for a double major, they are required to maintain a minimum GPA of 3.0 for the remainder of their studies.

Students should note that only one degree will be conferred. Due to scheduling conflicts and/or additional course requirements, students may need to take more than 18 credits per semester and/or enroll in summer semester(s) in order to graduate with their class. In cases where courses overlap between majors, general elective credit may need to apply to one of the courses. It is recommended that students check with Student Financial Services to discuss how the additional course requirements might affect their financial aid status. In order to be considered for a double major, candidates should contact their Academic Coach in the Center for Academic Success and Enrichment (Boston) and complete the Application for Double Major form, which requires approval of relevant program directors and deans.

Minors (Boston)
Students who wish to pursue a minor must complete a Declaration of Minor form, which is available in the Center for Academic Success and Enrichment. The Declaration of Minor form must be forwarded to (1) the student, (2) the Center for Academic Success and Enrichment, and (3) the Office of the Registrar.

Requirements for completion of some minors vary for students in the Premedical Health Studies program. These variations are outlined in the Bachelor of Science in Premedical Health Studies section of this catalog.

Nonmatriculating Students
Students that have not been formally granted admission to an MCPHS academic program may take credit-bearing courses at either the undergraduate or graduate level as a non-matriculated student in the School of Professional Studies. Students may take courses for professional or personal development, to satisfy prerequisite requirements for entry to a degree program, or to transfer credits to another institution. Students must meet all prerequisites to enroll in a course.

Course credits earned as a non-matriculated student do not automatically apply toward a degree program at MCPHS. Students later admitted to an MCPHS academic program may request their non-matriculated coursework be transferred with approval of the appropriate program director or academic dean. In order for coursework to be transferred it must meet one of the following:

- Undergraduate degree program students may transfer a maximum of four undergraduate courses not to exceed 14 credits for courses in which students earned a C or better.
- Masters level degree program students may transfer a maximum of two graduate courses not to exceed 8 credits for courses in which students earned a B or better.
- Doctoral level degree program students may transfer a maximum of three graduate courses not to exceed 12 credits for courses in which students earned a B or better.

In rare instances, exceptions may be granted for students completing prerequisite requirements with approval of the appropriate program director or academic dean.

Visiting Students (Boston)
Visiting students (those enrolled in degree programs at institutions other than members of the Colleges of the Fenway) also may register for classes at the University. Such students must provide documentation of good academic standing from their home institution before completing their registration. Visiting students may register on a seat-available basis and only after the designated period when matriculated students have completed the registration process. Such students may obtain registration materials at the Office of the Registrar. This same policy also applies to students from other MCPHS campuses.

In the case of nonmatriculated and visiting students, it is expected that such students will adhere to the academic requirements as set forth by the instructor(s) and stated in the course syllabus.

Visiting Classes
A person may visit a class in which they are not officially enrolled only with prior consent of the instructor.

Leave of Absence
The University recognizes that there are situations when a student may require a leave of absence (LOA). Such leaves are granted for a maximum of one academic year with the exception of leaves granted for military service. The student must meet to consult with their Academic Dean or designee regarding the reason(s) for considering, and the ramifications of, taking a leave of absence. After the initial meeting with the Academic Dean or designee, the student must return the completed Leave of Absence form within 1 week (or 5 business days) with the required signatures: a) the student, b) Academic Dean or designee, c) Student Financial Services, and d) Immigration Services representative (for international students). The Academic Dean or designee will notify the student within 1 week (or 5 business days) upon receipt of the completed form with the finalized LOA requirements via the student's MCPHS email account. **Students who take a leave after the designated add/drop period will receive course grade(s) of W.** **For information on a Health/Medical Leave of Absence, please see the Health/Medical Leave of Absence section in this catalog.*

Return from Leave of Absence
Students returning from a leave of absence must confirm they are returning to MCPHS with their Academic Dean or designee prior to the following dates:

March 1-for a summer or fall semester return
October 1-for a spring semester return
Online students-30 days prior to the beginning of the semester

Students on a Leave of Absence are *not* eligible for University Services, with the exception of academic coaching. Students who intend to return from a LOA must also review and adhere to applicable school/program specific policies in addition to the general policy outlined herein. Students who fail to return within the designated time must reapply for admission.

Attendance

The University expects students to meet attendance requirements in all courses in order to qualify for credit. Attendance requirements may vary depending on the instructor, and these should be clearly stated in the syllabus available to each student during the first week of the course. Generally, students are expected to attend all classes unless they have a valid excuse. (See Documented Student Absence Policy).

The Documented Student Absence Policy is intended for students who experience an unforeseen circumstance. The Documented Student Absence Policy is not intended to be used as the standard attendance policy in a course syllabus.

Faculty should refer students to the Documented Student Absence Policy for absences that fall under the scope of the Policy. It is not intended for every absence. Faculty who are already working with a student on their absences do not need further approval.

Documented Student Absence Policy Absences from coursework can be detrimental to students' academic progress. In an effort to support students in certain circumstances, a Documented Student Absence Policy may be granted as a reasonable

allowance; however, a Documented Student Absence Policy does not always excuse a student from making up academic work nor does it guarantee that missed work/clinical hours can be made up.

Admission to Classes
No student will be admitted to a scheduled class unless

- the student's name is on the instructor's class roster, and
- the student's account is in order.

Student Conduct / Community Standards
An instructor shall have the right to require a student who is disruptive during a class, laboratory, or experiential rotation to leave for the remainder of the session and shall report the incident to the Student Affairs office on their campus for further appropriate action in accordance with the Student Code of Conduct. Public Safety may also be notified.

Instructional Periods
Faculty members are expected not to continue any class beyond the scheduled ending time. Unless students have been informed that the faculty member will be late, class is canceled if a faculty member has not arrived within 10 minutes of the scheduled starting time of a class.

Online and Distance Education
The majority of courses at MCPHS are conducted in physical classrooms and labs. However, in addition to programs offered entirely online or in an executive or hybrid format, some required and elective courses may be delivered online and/or through distance education. In participating in online or distance education courses, students learn in different ways and must manage a technologically mediated environment. This learning will be of value both in the completion of degree requirements and in the workplace. Increasingly, workplaces utilize technology for training and work.

Minimum Class Size
By noon on the Friday of the first week of classes, the school dean will make the following decision regarding offering a class, based on enrollment:

- Required courses will be offered unless offered more than once in a calendar year. If five or fewer students register for a required course that is offered more than once in a calendar year, the course may be canceled (programmatic requirements considered).
- Elective courses will be offered provided there is a minimum of eight students enrolled.

Registration
It is the responsibility of the instructor to ensure that only properly registered students are allowed to attend class. If a student's name does not appear on the class roster in Self-Service after the add/drop period, that student shall not be allowed to attend, participate in, or take or receive exams until the instructor is notified by the Office of the Registrar that the student is officially registered.

Course Policies

Academic Honesty *(See Academic Honesty Policy under University Policies section of the University Catalog)*.

Credit Hour Policy
The credit hour policy applies to all courses at all levels (graduate, professional and undergraduate) that award academic credit regardless of the mode of delivery including, but not limited to, self-paced, online, hybrid, lecture, research, clinical and laboratory. Academic units are responsible for ensuring that credit hours are awarded only for work that meets the requirements outlined in this policy.

A lecture period of 50 minutes per week or laboratory work of 110 to 220 minutes per week, extending over one semester, constitutes one academic credit hour. For each hour of lecture, students are expected to spend a minimum of two hours outside of class preparing for the course. For research, clinical/experiential rotations and service-learning activities, actual hours may vary by program, but such activities must include an amount of work that is at least equivalent to lecture and laboratory courses.

Assessment
All materials, in whatever format, submitted by students for evaluation in MCPHS courses may be used by MCPHS for program or institutional assessment. To the extent possible, individual identification will be removed from these materials before they are used for assessment purposes.

Instructor Absence
If a faculty member is unable to conduct classes as scheduled, every effort will be made to offer substitute instruction for the students. Planned absences due to professional commitments should be approved by the school dean well in advance so that suitable coverage or alternative assignments may be arranged. The school dean should be informed as soon as possible of any unplanned absences due to illness or personal emergency so that students can be notified in a timely manner. Classes can be canceled only with the approval of the school dean or, in the absence of the school dean, the Vice President for Academic Affairs.

Colleges of the Fenway
A Colleges of the Fenway (COF) student enrolled in an MCPHS course through COF cross-registration must notify the course instructor and provide them with an email address to ensure that course information is received in a timely manner. The student also should consult with the instructor regarding access to online applications that might be used in the course.

Disabilities and Accommodations
Students with documented disabilities who wish to request accommodations under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (ADA) should contact the Office of Student Access and Accommodations at 617.879.5995 and/or OSAA@mcphs.edu to discuss the accommodations process.

Writing-Intensive Courses (for all HUM courses and others designated as writing intensive)
The MCPHS faculty believes that learning in all disciplines is an integrative process, a synthesis of critical reading, thinking, and writing. Students not only must learn to write but also must write to learn. Consequently, writing-intensive courses require students to write 15 to 20 pages in two or more assignments that may take various forms as determined by the course instructor. In addition, instructors dedicate class time to the teaching of writing in their specific disciplines, provide feedback on assignments, and allow revision of at least one assignment.

Writing Proficiency Requirement (Boston only)
MCPHS–Boston students in all baccalaureate and first professional degree programs are expected to meet the University's standards for writing proficiency, which include the general standards for writing competency as delineated in the University's writing proficiency rubric, and specific applications of those standards by faculty in disciplines across the University curricula.

Students who do not perform at a satisfactory level of writing proficiency may be referred to the Writing Center and may be required to demonstrate writing improvement to receive full course credit. (For details, see the Writing Proficiency Requirement—Boston section of this catalog.) The writing proficiency rubric is available on the Writing Center Web page at https://my.mcphs.edu.

Transfer Policy (Boston)
MCPHS does not award transfer credit for remedial or developmental skills courses or other courses that are taught at levels below the first-year level at MCPHS. This includes English courses on sentence and paragraph structure or similar content courses below the level of LIB 111 (Academic Writing and Research), mathematics courses in arithmetic or algebra if below the level of MAT 141 (Algebra and Trigonometry), and biology and chemistry courses below the level of the MCPHS first-year courses required for the program to which the student seeks entrance.

Transfer courses will not be accepted as fulfillment of the core curriculum requirements in the liberal arts distribution areas if they are taught in the first year of a University curriculum. Liberal arts courses acceptable for transfer credit must have prerequisite

requirements and must be taken during the student's second or subsequent year in a University curriculum.

Transfer Credits Post Matriculation
Once a student has matriculated at the University, no courses taken outside of MCPHS will be accepted for transfer credit. (NOTE: COF courses are allowed for Boston students.) Exceptions to this policy may be granted in instances involving delay of graduation or extreme hardship.

Prior to taking a course for transfer credit at another institution, students must submit a Petition to Transfer Credit form to the Center for Academic Success and Enrichment, which approves or denies the petition. Notification of the decision will be distributed to (1) the student, (2) the program director, (3) the school dean, (4) the Office of the Registrar, and (5) others as appropriate.

The student is responsible for requesting that official transcripts be sent to the Office of the Registrar, which will verify the credit and post a grade of TR in the student's transcript. Official transcripts must be received no later than the add/drop deadline of the subsequent semester. These petitions are reviewed on a case-by-case basis and may take up to two weeks to receive official notification. Students are advised not to enroll in or make payments for non-MCPHS courses without official University approval.

Minimum Transfer Grade
The minimum grade for receiving transfer credit is C (2.0). This may vary for some academic programs, please check the good academic standing chart under the Academic Standing section for minimum grade requirements.

Studio Art and Performance Courses (Boston)
A maximum of one studio art or performance course may be taken for credit at another institution, including the Colleges of the Fenway. Studio art courses may be accepted for general elective credit only, not for liberal arts distribution credit.

Credit by Examination
Credit by examination is available to students whose previous coursework in a subject area does not meet transfer credit criteria or who feel they have achieved competency in a subject through work or life experience. Credit by examination is available to new students only during the student's first semester of matriculation at the University, no later than the add/drop deadline of the term of entry.

Competency may be demonstrated through one of the following means: (1) College Level Examination Program (CLEP), (2) Advanced Placement (AP) examination, or (3) International Baccalaureate (IB) examination.

The College Board administers CLEP and AP examinations. A passing score on the CLEP examination in English Composition with Essay will be accepted as credit for Expository Writing I. A passing score on the CLEP examination in Freshman College Composition with Essay will be accepted as credit for Expository Writing II. CLEP credit will be awarded only after the Admission Office has received official scores directly from the College Board. In the case of AP examinations, credit will be awarded for a score of 4.0 or higher.

No AP credit will be awarded for CHE 131 Chemical Principles I, CHE 132 Chemical Principles II, CHE 110 Basic Chemistry I, or CHE 210 Basic Chemistry II. No AP credit will be awarded to students in the Premedical Health Studies program for BIO 151 Biology I or BIO 152 Biology II.

AP and IB exceptions: Chemistry AP scores of 4 or better will be accepted as transfer credit for CHE 131 and CHE 132 for students who matriculate at MCPHS with existing college credit for organic chemistry. Transfer students accepted into the professional phase of an MCPHS degree program will receive transfer credit for IB courses accepted by a previous college. In both of these instances, official AP and/or IB exam documentation must be provided to MCPHS no later than the add/drop deadline of the term of entry.

Students who complete IB courses must provide high school transcripts and/or IB reports that document the course, examination level, and exam score. Students must achieve a score of 5 or better on an HL (high-level) IB exam. Transfer credits are limited to exams for English, language, or the arts.

Students are responsible for scheduling CLEP/AP examinations through the College Board. Results/scores of the examination(s) should be sent (by the school dean if applicable) to the Admission Office. If the student achieves an acceptable score on the examination(s), then notification will be sent to (1) the student, (2) the program director, (3) the school dean, (4) the Office of the Registrar, (5) the Academic Advising Center / advisor, and (6) others as appropriate. Credit earned by examination will not be counted toward the residency requirement.

Clinical Rotations and Background Screenings
For some MCPHS programs, placements in clinical rotations at healthcare providers are a required part of the MCPHS curriculum. Some of those healthcare providers require background screenings, and a conviction for a criminal offense might present an issue. It is possible that certain types of criminal convictions, whether prior to being a student at MCPHS or while

attending MCPHS, could preclude a student from being able to complete a required clinical rotation. For more information, please contact the MCPHS Chief Compliance Officer.

Cross-Registration (Boston)
Cross-registration provides full-time undergraduates of the Colleges of the Fenway with the opportunity to take up to two courses per semester (fall and spring semesters) at any of the five Colleges of the Fenway institutions at no additional charge, so long as the credit load does not exceed 18 credit hours. This opportunity provides students with the advantages of a small college but exposes them to resources similar to those of a large university. Cross-registration enables students to broaden their intellectual and social capacities, and it introduces them to faculty, research, colleagues, and curricula they would not otherwise have experienced.

Courses are open to cross-registration on a seat-available basis. Each school's home students have the first option to register for courses that have been developed through joint efforts of faculty across the schools, and the goal of these courses is to attract a mix of students. A searchable database of all courses open for cross-registration may be found at www.colleges-fenway.org. Detailed information about cross-registration and associated processes and policies is highlighted on the Colleges of the Fenway website (www.colleges-fenway.org).

Dean's List
The dean's list recognizes full-time students seeking a bachelor's degree or Doctor of Pharmacy who have completed the required full-time credit hours of credit and earn a minimum 3.50 semester GPA. Courses that are taken pass/fail do not count toward the full-time status. Doctor of Pharmacy students in Boston, Worcester, and Manchester who are completing clinical rotations are not eligible for the dean's list. Doctor of Pharmacy students in the Worcester and Manchester programs during the six-week fall semester of Year II are eligible for the dean's list. Incomplete grades that remain beyond the first three weeks of the subsequent semester render a student ineligible for the dean's list in that term. Dean's list is not awarded to students in graduate programs (i.e., MPAS, MANP, MSN, MSDH, MS, DPT, OD, and PhD). The dean's list is published approximately one month into the following semester by the Registrar's Office.

Add/Drop Procedures
Any registered student who wishes to adjust his or her class schedule during the designated add/drop period can make adjustments online via Self-Service, with the exception of students in the School of Professional Studies who can make such adjustments by emailing professionalstudies@mcphs.edu. Students cross-registered for Colleges of the Fenway courses must adhere to the add/drop procedures at their home institution. The add/drop period deadline for all programs is specified for each academic term, usually within the first week of classes. Adjustments to tuition and fees, where applicable, are made automatically through the Office of Student Financial Services. Students who wish to withdraw from a course after the designated add/drop period should refer to the Withdrawal from a Course section in Academic Policies and Procedures. No refunds are made if such changes are made after the designated add/drop period. **NOTE: Simply failing to attend classes will not result in the course being dropped from the student's official registration, and students will be held financially accountable and receive a course grade of F.**

Email Policy
All MCPHS students are required to open, utilize, and maintain an MCPHS email account. Official University communications and notices are sent via MCPHS email accounts only. All students are responsible for regularly checking their MCPHS email and for the information contained therein. Only MCPHS accounts will be used in all matters related to academics, student life, and University notifications. The University does not forward MCPHS email to personal email accounts.

All MCPHS community members can register in the MCPHS Emergency Notification System to receive text messages via cell phones and email regarding major campus emergencies and campus closings. Contact helpdesk@mcphs.edu for more information.

Examinations
All tests and examinations, other than final examinations, are scheduled by the instructor. Students who miss a scheduled examination (i.e., classroom examination, lab, or other graded performance)must arrange a make-up exam with the course instructor. The format of the make-up exam may vary from that of the original scheduled exam and is at the discretion of the course instructor. With respect to completion of such examinations, if an acceptable agreement between the student and professor(s) cannot be reached, the school dean will serve as arbitrator.

During the fall and spring semesters for undergraduate and first professional degree students, no course examinations (worth 15% or more of the final course grade) may be scheduled during the week before final examinations. Major written assignments may be due the week before finals if the assignments were semester-long and not assigned within the last four weeks of the semester. Exceptions are granted for laboratory examinations, including practical examinations. Exceptions also may be granted for block-scheduled courses, subject to approval by the Vice President for Academic Affairs (see School of Nursing).

NOTE: Final examinations are scheduled by the Office of the Registrar several weeks before the end of the semester. Final

examinations must be given only during final exam week. The final exam schedule includes make-up times for examinations canceled due to inclement weather or other unforeseen circumstances (e.g., power outages, fire alarms). Students and faculty are expected to take these dates into account when planning any travel (i.e., they should not purchase nonrefundable tickets to leave before the make-up date).

Posting Examination Grades
Faculty do not use student identification numbers to post exam grades. Quiz, exam, and assignment grades are posted on Blackboard™ via the use of student-specific log-ons and confidential passwords. Please remember that passwords should be kept confidential.

Final Grades
Students may view their final grades online. Final grades are not available to students until all grades have been submitted by all faculty. The Registrar's Office will notify students via email when all grades are posted each term.

Grading

Grading System

GRADE	QUALITY POINTS	EXPLANATION
A	4.0	
A–	3.7	
B+	3.3	
B	3.0	
B–	2.7	
C+	2.3	
C	2.0	
C–	1.7	
D	1.0	
F	0.0	
S	N/A	Satisfactory
U	0.0	Unsatisfactory
AUD	N/A	Audit; students cannot audit courses that are part of their curriculum
HP	N/A	High Pass (excellent performance in clinical courses only)
I	N/A	Incomplete
NC	N/A	No Credit
P	N/A	Pass
PC	N/A	Pass Credit
TR	N/A	Student received transfer credit
W	N/A	Withdrawal from course
*	N/A	An asterisk denotes removal of grade from GPA

NOTATION	EXPLANATION
C	Clinical/internship/clerkship/rotation
H	Honors course
L	Lab
O	Online course
ST	Selected topics course
T	Travel course

Grading Policies

Grade Appeals
A student who wishes to appeal a final grade of a course must do so within two weeks of the grade being posted by the Registrar's Office. The first appeal should be in writing to the instructor, who must make a decision to uphold or change the grade within 3 business days of the appeal. The written appeal should contain the rationale for the appeal. If a mutually acceptable agreement cannot be reached (or the instructor does not respond within 3 business days), the student has 3 business days to appeal in writing to the administrator in charge of the academic unit offering the course (Department Chair, Program Director or designee).

The appeal should contain the rationale for the appeal and the result of the appeal to the instructor. The academic unit administrator must decide to uphold or change the grade within 3 business days of the appeal. If this procedure does not successfully resolve the matter (or if the administrator does not rule on the matter in 3 business days), the student has 3 business days to appeal in writing to the chief administrator (School Dean or designee) overseeing the academic unit offering the course. The appeal should contain the rationale for the appeal and the results of the appeals to the instructor and the academic unit administrator. The chief administrator will uphold or change the grade and inform the student within three business days. The decision of the chief administrator is final. Decisions on grade appeals are based solely on objective grade information.

If the grade appeal affects a student's progression status, the grade appeal process must be completed on or before the first day of class/clinical rotation, prior to the start of the next semester. It is the student's responsibility to initiate the grade appeal.

Grade Point Average (GPA)
The total number of quality points (see Grading System section of this catalog), divided by the total number of credit hours taken, yields the grade point average. The grade point average for each semester and cumulatively is calculated to two decimal points. In some degree programs, a professional grade point average also is calculated for each student by dividing the number of professional quality points by the total number of professional credit hours taken.

Grade Reports
At the end of each academic term, students can view their grades online via Self-Service. The Office of the Registrar notifies students when grades are posted.

Incomplete Grades
Courses with a grade of Incomplete must be completed within three weeks of the new semester following the academic term (including summer sessions) in which the Incomplete grade was assigned, or the grade automatically becomes an F. The instructor is responsible for notifying the Office of the Registrar regarding any student who has been granted additional time for coursework completion. The instructor also must specify the extended time period, up to one semester. No student may progress to courses for which the course with an Incomplete is a prerequisite until the work is completed and the I grade is changed. Incomplete grades render a student ineligible for the dean's list. No student can graduate with an Incomplete grade in any course necessary for graduation.

Auditing Courses—No Credit (Boston)
A student may audit a course with the consent of the instructor. The student must register for the course through the Office of the Registrar prior to the add/drop deadline and pay two-thirds of the tuition. The student does not earn academic credit for audited courses. Students cannot audit courses that are part of their required curriculum.

Pass/Fail Courses
A maximum of one elective course may be taken on a pass/fail basis at another institution, including the Colleges of the Fenway. A grade of P or F will appear on the MCPHS transcript for any course taken pass/fail. A pass grade (P) will not affect a student's grade point average.

Repeated Courses
Following completion of a course repeated at MCPHS, the earlier grade will be removed from the grade point average, and the more recent grade will be used in the calculation. Both grades remain on the transcript for future reference. If the student repeats a course outside the University (see Courses Taken at Other Colleges after Matriculation), the lower grade is dropped from the grade point average, but a substitute grade is not used in the calculation. Such courses are listed as transfer credit.

Courses may be attempted no more than two times. Grades of F and W are considered attempts for courses in which D or better is the passing grade. For those courses in which the passing grade is higher (e.g., C–, C), grades below the passing grade and W are all considered attempts. Failure to complete any course within these limits will result in dismissal from the degree program or major.

When a curriculum change results in a course moving from one category to another (e.g., from preprofessional to professional), and a student repeats the course in the new category, the GPA will automatically be calculated in the new category. If the student wants the GPA to be calculated in the previous category, they must state the justification for that request via a petition for special academic request. The request is *not* automatically approved, and the repeated course will *not* be counted in both professional and preprofessional categories.

Grade Replacement
The Registrar will automatically replace the previous grade when a student repeats a course. Students are encouraged to review their current program evaluation with the Center for Academic Success and Enrichment to determine if there are existing grades that should be replaced. The timely replacement of grades is essential in determining the academic standing of students.

Recalculation of the Grade Point Average
Students who wish to remove courses from their grade point average that are not required for the new program should note their request on the Change of Program form. All grades will remain on the transcript (and program evaluation), with the notation that they are not included in the grade point average. These requests must be approved by the new academic dean.

Students who leave a program not in good academic standing and wish to move to another degree program or be readmitted to their former program must meet the grade point requirements of that YOG and program (see Good Academic Standing). Students who leave the PharmD program not in good standing must complete the new program and meet the grade point average requirement required by the School of Pharmacy–Boston before seeking readmission into the PharmD program.

An additional change of program may result in courses being added back to the GPA.

MCPHS Transcripts
Final grades are recorded on a student's transcript. Final grades and transcripts are permanently maintained by the Office of the Registrar.

Official Transcripts
Current students and alumni can order both electronic and hard copy official transcripts online via the National Student Clearinghouse (https://tsorder.studentclearinghouse.org/school/select). Official transcripts are printed with the student's legal name from the student information system.

Unofficial Transcripts
Current students may view their unofficial transcript via Self-Service. Under the Academics menu, select the Unofficial Transcript option to download your unofficial transcript.

Academic Standing

The academic standing of each student will be reviewed at the end of each academic semester at each campus, including summer sessions. All students will be reviewed by the school in which they are enrolled. Summer sessions are reviewed to evaluate student academic progress.

Each school has specific academic progress standards (e.g., minimum grade point average requirements, minimum grades for required courses) that must be met in order to progress within the degree program (see Good Academic Standing). Students who fail to meet the minimum standards required for academic progress will be notified of the decision by the school's Academic Standing Committee (ASC).

Good Academic Standing
To be in good academic standing, a student's cumulative and professional grade point averages (if applicable) must meet the minimums required by the degree program in which they are enrolled. Any student whose cumulative or professional average falls below the minimum after an academic term is considered to be on probation. Professional grade point averages are calculated only after 12 credits have been taken in professional courses (exceptions exist for the Nursing and Dental Hygiene programs). Cumulative or professional grade point average minimums are listed in the Good Academic Standing table in this section.

Students who fail to meet the minimum standards required for academic progression will be notified of the decisions by the school's Academic Standing Committee.

In order to maintain good academic standing, students should be aware that the professional curricula of the University are rigorous and demanding. Students who must be engaged in gainful employment should balance school and work responsibilities so as not to compromise their academic success.

Academic Warning
At multiple points during each semester, faculty members submit academic warnings via Self-Service, which are processed by the Center for Academic Success and Enrichment (CASE) on each campus.

Students who receive academic warnings will be notified by the CASE by email to their official MCPHS emails and provided additional instructions.

Boston: Each student placed on academic warning will be encouraged to attend academic skill-building workshops and to meet with their Academic Coach in the Center for Academic Success and Enrichment. These actions may be required of students who receive more than one academic warning.

Worcester/Manchester: Each student placed on academic warning will be required (as stipulated in his or her notification letter) to meet with an Academic Coach in the Center for Academic Success and Enrichment (Worcester/Manchester) and meet with a faculty advisor.

There is no appeal process associated with an academic warning.

Academic Actions

Academic Probation
Each student's academic status will be reviewed at the end of each academic semester by the Academic Standing Committee (ASC) for their school, and each student's professional (if applicable) and cumulative grade point averages (GPAs) will be determined. A student with a professional and/or cumulative GPA below the requirement for his or her major shall be placed on academic probation and receive a letter from their Academic Dean or Program Director. This written notice of probationary status also will include a notice that failure to reach the required GPA by the end of the designated academic semester may result in dismissal from the University.

Each student on probation is required to meet with a designated member of the Center for Academic Success and Enrichment (CASE) on their home campus by the end of the second week of the probationary semester to develop and agree to—in writing—an Academic Success Plan (ASP). The ASP may include mandatory study/advising sessions, mandatory class attendance, or other stipulations aimed at encouraging and supporting student success.

Probationary status may remain in effect for up to two consecutive academic terms, defined as two semesters or two clinical clerkships/rotations, depending upon the student's year and/or campus of enrollment. It is expected that students on probation make progress toward good academic standing at the conclusion of each academic term. Failure to demonstrate improvement at the end of the first probationary period may result in dismissal. At the conclusion of the second consecutive academic term, the student must have achieved good academic standing; failure to do so may result in dismissal. Upon completion of each academic term, a student on academic probation will receive a notice of his or her current standing in writing from the school dean.

Individual programs may have specific grade point requirements that students must meet in order to enter the professional years and associated clerkships/rotations of their programs. These program-specific requirements preempt the probation process for the preprofessional years. For information about program-specific requirements for the professional years, students should contact the appropriate school dean and refer to the Good Academic Standing chart. There is no appeals process associated with academic probation.

Academic Dismissal
Each student's academic status will be reviewed at the end of each academic semester by the appropriate Academic Standing Committee (ASC). Each student's professional (if applicable) and cumulative GPAs will be determined. If a student's GPA falls below the level of good academic standing, as defined by the program requirements, for two consecutive academic semesters, the ASC will submit a recommendation for dismissal from the program to the appropriate school dean.

Courses may be attempted no more than two times. Grades of F and W are considered attempts for courses in which D or better is the passing grade. For those courses in which the passing grade is higher (e.g., C–, C), grades below the passing grade and W are all considered attempts. Failure to complete any course within these limits will result in an ASC recommendation for dismissal from the degree program to the school dean.

Individual programs may have specific grade point requirements that students must meet in order to enter the professional years and associated clerkships/rotations of their programs. These program-specific requirements preempt the dismissal process for the preprofessional years, and students failing to meet them may be subject to dismissal. For information about program-specific requirements for the professional years, students should contact the appropriate school dean and refer to the Good Academic Standing chart.

A student recommended for dismissal may be continued by the school dean with or without conditions. If the school dean accepts the dismissal recommendation, the student will receive written notice of dismissal from the school dean. The notice will include procedures for appeal and will direct students to meet with an advisor to discuss a potential change of program. All change of programs must be finalized by the end of the add/drop period for the next enrolled semester. If students do not successfully appeal or meet the change of program deadline they will be administratively withdrawn from the university. Administrative withdrawal letters will include notice of loss of housing, financial aid, and registration. The following offices/individuals will be notified: Center for Academic Success and Enrichment, Dean of Students, Office of the Registrar, Residential Living and Learning, Information Services, Public Safety, Student Financial Services and Immigration Services/International Academic Services (if applicable). Students will be required to turn in their University ID and vacate University residence halls.

A student whose conduct is unsatisfactory may be dismissed from the University at any time. In such a case, tuition and fees paid for the current academic semester will not be refunded.

Reinstatement of Dismissed Students
To be considered for readmission following dismissal by a school dean, the student must petition the Provost's Office, in writing, by the date designated in the Appeals Procedure guidelines that accompany the dismissal letter. The Provost's Office may uphold

the dismissal, readmit the student, or readmit the student with conditions. If readmitted, the student's academic performance will be reviewed at the end of one academic semester. If the student has failed to meet the stipulated conditions or, in the absence of stipulated conditions, failed to meet the minimum GPA required for good academic standing in that student's program, the student will be dismissed from the University.

A student who has been dismissed twice is eligible for readmission to *the same degree program* only if (1) the student has been away from the University for a period of 12 months, and (2) the student has demonstrated academic success through coursework taken at another institution. If these conditions are met, the student may apply for readmission to the school dean. Readmission also will depend upon the availability of space in the program.

Change of Program (Boston)
A student requesting a change of program must schedule an appointment with their Academic Coach in the Center for Academic Success and Enrichment (CASE) to discuss the decision to apply for a change of program. Prior to this meeting, the student must have a printed copy (from Self-Service) of their most recent program evaluation and a program evaluation for the new program. These audits should be brought to the meeting with the coach.

When a new program has been chosen, the student may be required to schedule an appointment with the director of the program to which they wish to transfer. The student will submit the Change of Program form by working with the Academic Coach that they have met with in the CASE. The Academic Coach will list the new Year of Graduation and any course substitutions on the form for the Program Director and Dean of the desired program to review. The student, the coach, the program director, and the appropriate school dean must sign the Change of Program form. All written correspondence regarding the decision must be sent to the student, program director, Office of the Registrar, Student Financial Services, CASE, and school dean(s). If students have outstanding coursework taken external to MCPHS, the official transcripts must be received in the Office of the Registrar no later than the add/drop deadline for the term of entry. The student will receive official change of status email from the Office of the Registrar notifying them of requested program change.

In order to register for classes in the new program, the completed and approved request for Change of Program form must be on file in the Office of the Registrar. Once admitted to a new program, a student must adhere to the program and GPA requirements commensurate with their new YOG.

Depending on the intended new program, first-year students may change majors only after grades have been reviewed following the fall or spring semester. Students may begin the Change of Program process earlier, but they must meet with a coach in the CASE to review the Change of Program procedures, petition, and timeline.

If a student moves from the Worcester/Manchester PharmD program to any program in Boston they will receive transfer credit for any courses that would be applied to the degree program, and the secondary degree would begin with a new degree audit. In this case, the residency requirement would be waived. Students cannot transfer from the Worcester or Manchester PharmD program into the Boston PharmD program.

Recalculation of the Grade Point Average
Students who wish to remove courses from their grade point average that are not required for the new program should note their request on the Change of Program form. All grades will remain on the transcript (and program evaluation), with the notation that they are not included in the grade point average. These requests must be approved by the new academic dean.

Students who leave a program not in good academic standing and wish to move to another degree program or be readmitted to their former program must meet the grade point requirements of that YOG and program (see Good Academic Standing). Students who leave the PharmD program not in good standing must complete the new program and meet the grade point average requirement required by the School of Pharmacy–Boston before seeking readmission into the PharmD program.

An additional change of program may result in courses being added back to the GPA.

Good Academic Standing and Satisfactory Progress for Financial Aid
Student Financial Services disburses financial aid only to students in good academic standing who are making satisfactory progress toward completion of their degrees. Refer to Student Financial Services in this catalog for further details.

Good Academic Standing Chart

Good Academic Standing						
School	**Program**	**Degree**	**Overall GPA**	**Prof. GPA**	**Min. Grade in Prof. Courses**	**Other**
All schools	All first-year students		2.0 (Except PharmD beginning with the Class of 2024)			Beginning with the PharmD Class of 2024: Minimum GPA of 2.0 at the end of year 1 (first preprofessional year) fall semester Minimum GPA of 2.5 at the end of year 1 (first preprofessional year) spring semester Minimum of C- in all preprofessional courses
Acupuncture	Acupuncture	MAc	2.0		C	
	Acupuncture with a Chinese Herbal Specialization	MAc CHM	2.0		C	
	Doctor of Acupuncture	DAc	3.0		B	
	Certificate of Advanced Graduate Study in Chinese Herbal Medicine (CHM)	CAGS	2.0		C	
	Japanese Acupuncture Studies	CRT	2.0		C	
Arts and Sciences	Biotechnology	BS	2.0			
	Chemistry	BS	2.0			
	Chemistry / Pharmaceutical Chemistry	BS/MS	2.0 for BS; 3.0 for MS			3.0 overall and 3.0 in BIO, CHE, MAT, PHY courses at end of Year III to enter MS program in Year IV
	Health Humanities	BA	2.0			
	Health Psychology	BS	2.0			
	Health Sciences	BS	2.0			
	Health Sciences (Degree Completion)	BS	2.0			
	Health Sciences	MHS	3.0			B– in all courses
	Health Sciences	DHS	3.0			B in all courses
	Medical and Molecular Biology	BS	2.0			
	Premedical Health Studies	BS	2.0			
	Public Health	BS	2.0			
	Public Health	BS/MPH	2.0 for BS; 3.0 for MPH			B– in MPH courses
	Public Health	MPH	3.0			B– in all courses
	Public Health	CRT	3.0			B– in all courses
Dental Hygiene	Dental Hygiene	BS	2.5	2.5	C	Minimum grade C in BIO 110, 210, 255 and CHE 110, 210. An overall GPA of 2.5 to progress into the fall of Year II. Three grades below C in any combination of DHY courses

						results in dismissal from the program.
	Predental Dental Hygiene	BS	2.5	3.0	C	Minimum grade C in BIO 151, 152, 110, 210, 255 and CHE 131, 132. Three grades below C in any combination of DHY courses results in dismissal from the program. GPA of 3.0 required to enter Year III; professional phase of the Predental/Dental Hygiene program.
	Dental Hygiene	MSDH		3.0		B– in all courses
	Oral Health Professions Education	CRT		3.0		B– in all courses
Healthcare Business & Technology	Data Science and Biotechnology Research	BS	2.0			
	Data Science and Health Analytics	BS	2.0			
	Health Information Management and Technology	BS	2.0			
	Healthcare Management	BS	2.0			
	Clinical Management	CRT/ MSCM	3.0			B- in all courses
	Data Science	MS	3.0			B- in all courses
	Health Data Analytics & AI	CRT	3.0			B- in all courses
	Health Informatics	MSHI	3.0			B- in all courses
	Health Technology	MBA	3.0			B- in all courses
	Healthcare Management	MBA	3.0			B- in all courses
	Healthcare Administration	DHA	3.0		B	B in all courses, minimum grade of B- in one credit HCM.790 elective courses
	Doctor of Science in Physician Assistant Studies	DScPAS	3.0		B	B in all courses
	AI in Healthcare	CRT	3.0			B- in all courses
	Clinical Informatics	CRT	3.0			B- in all courses
	Healthcare Innovation & Leadership	CRT	3.0			B- in all courses
	Healthcare Management	CRT	3.0			B- in all courses
	Quality Assurance and Quality Control	CRT	2.0			
Medical Imaging & Therapeutics	Diagnostic Medical Sonography General	BS	2.7	2.7	C+	Minimum grade C+ in MAT 141, PHY 181 and all BIO and CHE courses
	Magnetic Resonance Imaging	BS	2.0	2.5	C+	Minimum grade C in all BIO, CHE, MAT, PHY, HSC 310.

	Nuclear Medicine Technology	BS	2.0	2.5	C+	Minimum grade C+ in all BIO, CHE, MAT and PHY courses. An overall GPA of 2.5 to progress into professional phase
	Radiation Therapy	BS	2.5	2.7	C+	Minimum grade C+ in all BIO, CHE, MAT and PHY courses; and LIB 120
	Diagnostic Medical Sonography, Echocardiography Radiography	BS	2.0	2.5	C+	Minimum grade C in all BIO, CHE, and PHY MAT courses. For all Medical Imaging and Therapeutics BS programs, failure (grade of <C+) in 3 professional courses and/or 2 internship rotations results in dismissal.
	Respiratory Therapy	BS	2.5	2.5	C	
	Magnetic Resonance Imaging Nuclear Medicine Technology	CRT	2.5	2.5	C+	
	Computed Tomography (CT) Mammography	CRT	2.0		C	
	Radiologic and Imaging Sciences	MS	3.0	3.0	B-	
Nursing	Nursing (Boston)	BSN	2.7	2.7	C+	Minimum grade of a C+ in BEH 352, BIO 110, BIO 110L, BIO 210, BIO 210L, BIO 255, BIO 255L, CHE 110, 110L, MAT 142, 261; NUR 250O. Three grades below C+ in any combination of NUR courses will result in a dismissal from the BSN program.
	Nursing (Worcester and Manchester)	BSN	2.7	2.7	C+	Three grades below C+ in any combination of NUR courses results in dismissal.
	Nursing (Online)	RN to BSN AD to MSN MSN-FNP MSN-PMHNP CAGS DNP		2.7 3.0	 B	Minimum grade of C+ in all courses. Failure of one course twice, or failure of three courses across program results in dismissal Minimum grade of B in all courses Failure of one course twice, or failure of three courses across program results in dismissal
	Health Sciences / Postbaccalaureate Nursing Dual Degree	BSHS/ BSN	2.0	3.0		Minimum grade of a C+ in BEH 352, BIO 110, BIO 110L, BIO 210, BIO 210L, BIO 255, BIO 255L, CHE 110, 110L, MAT 142, 261; NUR 250O. Three grades below C+ in any combination of NUR courses will result in a dismissal from the BSN program.
Occupational Therapy	Occupational Therapy	MSOT	3.0	3.0	B-	3.0 each semester and 3.0 overall

						Three grades below B– in any combination of OTH courses results in dismissal.
Optometry	Optometry	OD		2.0	C	C in all courses
	Optometry/Public Health	OD/MPH		3.0		B– in all MPH courses
Pharmacy-Boston	Advanced Pharmacy Practice Studies	CRT	2.7		C-	
	Clinical Development of Drugs & Devices	CRT	3.0			B- in all courses
	Clinical Investigation and Development	MS	3.0			B- in all courses
	Clinical Research	CRT/MS	3.0			B- in all courses
	Health & Pharmacoepidemiology	CRT	3.0			B- in all courses
	Health Economics & Outcomes Research	CRT	3.0			B- in all courses
	Health Policy	CRT	3.0			B- in all courses
	Medicinal Chemistry	MS/PhD	3.0			B- in all courses
	Pharmaceutical Business	BS	2.0			
	Pharmaceutical Economics and Policy	MS/PhD	3.0			B- in all courses
	Pharmaceutical Sciences	BS	2.2 at end of Year II and beyond			
	Pharmaceutical Sciences	MPS	2.75 at end of BSPS Year III to enter MS program; 3.0 graduate courses to continue in MS program			B- in all courses
	Pharmaceutics	MS/PhD	3.0			B- in all courses
	Pharmacology	MS/PhD	3.0			B- in all courses
	Pharmacology/ Toxicology	BS	2.5 at end of Year II and beyond			
	Pharmacy and Life Sciences	BS	2.5 at the end of year 1; 2.8 to enter Year III (first professional year)		C-	A GPA of 2.7 is required for years III-IV. A minimum of C- in all preprofessional and professional courses (including Satisfactory grades in PHB 380/480.
	Pharmacy	PharmD	2.5 at the end of year 1; 2.8 to enter Year III (first professional year)	2.70	C–	A GPA of 2.7 is required for years III-VI. A minimum of C- in all preprofessional and professional courses (including Satisfactory grades in PHB 380/480/580)
	Pharmacy (Non-traditional Doctor of Pharmacy Pathway)	PharmD	2.7		C–	All coursework must be completed within six years of matriculation.
	Regulatory Affairs	CRT	3.0			B- in all courses
	Regulatory Affairs and Health Policy	MS	3.0			B- in all courses
	Regulatory Sciences	MS	3.0			B- in all courses

Pharmacy– Worcester/ Manchester	Pharmacy	PharmD	2.20	2.20		Minimum grade of a C- in PPW 348, PPW 450, PPW 453, and PPW 457. Grades for PSW 350, PPW 401, 402 and 403 are pass/fail and are not included in the professional GPA calculation. A cumulative professional GPA of less than 1.70 with no F grades at the completion of any semester results in non-progression. A cumulative professional GPA of 1.70 or less and one or more F grades at the completion of any semester results in academic dismissal from the program.
	Pharmacy/ Master of Public Health	PharmD/ MPH		3.0		B– in all MPH courses
	Pharmacy/ Graduate Certificate in Medication Safety	CRT		3.0		B– in all certificate courses
Physical Therapy	Physical Therapy	DPT	3.0	3.0	B–	3.0 each semester and 3.0 overall One grade in the C+ to C- range in any PTH course results in academic probation Two grades in the C+ to C- range in any combination of PTH courses may result in dismissal
Physician Assistant Studies-Boston	PA–Boston	MPAS	2.85	2.85	C	A professional GPA of 2.85 is required to progress. Students must earn a grade of C in all courses. A student who receives grades below a C in two or more courses is subject to non-progression or dismissal from the program.
Physician Assistant Studies- Manchester & Worcester	PA–Manchester and Worcester	MPAS	3.0	3.0	C	A GPA less than 3.0 or one or more course grades below a C may result in dismissal.
Professional Studies	Biopharmaceutical Industry Fundamentals	CRT	2.0			C in all courses
	Introduction to Life Sciences	CRT	2.0			C in all courses
	Life Sciences	BS	2.0			
Professional Studies	Precision Medicine	CRT	3.0			B- in all courses
	Undergraduate Certificate in Pre-Dental Science	CRT	3.3			B in all courses

Graduation

Graduation

Eligibility
The University recognizes three graduation dates during the academic year: September 1st and dates specified on the academic calendar for December and May. A formal Commencement ceremony is held once per year for all campuses in May. A December Commencement ceremony is held for degree programs with December completion dates.

In order to be eligible to receive a degree on one of the above official graduation dates, students must complete all degree requirements (including coursework, experiential education, instructional requirements, and financial clearance) by the following deadlines:

May	Last day of spring semester final exam period*
September	Last day of summer 12-week semester
December	Last day of fall semester final exam period*

Students who have completed degree requirements by the last day of the spring semester final exam period, or who earned their degree the previous September or December, are eligible to participate in the formal May Commencement ceremony. Students who will complete all degree requirements by the last day of summer-12 week semester are eligible to participate.

Students are eligible to participate in the Commencement ceremony only as noted above. In the event of incomplete requirements (including outstanding financial balances), the school dean will make a change in the student's date of graduation (via the Change of Year of Graduation form). It is the responsibility of the individual student to ensure that they meet all degree requirements on schedule or risk delay in graduation.

Graduation with Honors

Summa cum laude	3.86–4.00
Magna cum laude	3.70–3.85
Cum laude	3.50–3.69

The determination of honors is based on the graduate's final cumulative grade point average. Only students seeking a bachelor's degree or Doctor of Pharmacy who have completed at least 60 credits at MCPHS, or such number of credits that is applicable for completion of a given degree program, are eligible for honors. Honors designations appear on the student's final grade transcript but not on the diploma.

First honor graduates are recognized during the Commencement ceremony. In order to be considered a first honor graduate, one must be a student in a full-time undergraduate or entry-level program with at least three years of residency (except accelerated and/or fast track degree programs) and must not have earned any graduate or other advanced degree.

Petition to Graduate
Students must file a Petition to Graduate form online. Upon determination of completed requirements, students will be approved for graduation. In the event of incomplete requirements, the school dean will make a change in the student's year of graduation (YOG) via the Program Evaluation Update form. The student will be notified of this change and encouraged to meet with his or her program director and/or the Center for Academic Success and Enrichment (Boston) to ensure satisfactory program completion within the new YOG. All tuition and fees must be paid to the University prior to graduation.

Year of Graduation
Whenever a student falls out of sequence in the curriculum of an academic program, takes a leave of absence, or changes program, a change to year of graduation (YOG) may occur. If requesting to change programs, a student must complete a Change of Program form as part of the request to the school dean. The program director and school dean will review the request for change of YOG as part of the acceptance process. The completed and signed Change of Program form will be distributed to (1) the school dean, (2) the student, (3) the Office of the Registrar, (4) Student Financial Services, (5) the program director, and (6) the Center for Academic Success and Enrichment (Boston, Worcester/Manchester).

Residency Requirement
Students must complete (1) at least half of the required credits for a degree and (2) all professional course requirements in the respective degree program in residence at MCPHS. In special cases, the school dean may allow transfer credit for professional courses provided the student is able to demonstrate competency in the subject. If a program does not have specified professional courses, then half of all credits must be taken in residence. At least one-half of the courses required for a minor must be completed while in residence at MCPHS. "In residence" is defined as being registered for and enrolled in MCPHS courses, whether the courses are delivered using traditional, hybrid, distance delivery, or online methods. Colleges of the Fenway courses are credited as MCPHS courses (including the number of credits). An exception to the residency requirement is granted to those who hold licensure in a discipline and are enrolled in an MCPHS baccalaureate degree completion option. The residency requirement for such students is a minimum of 30 semester credits of MCPHS-approved courses.

Bachelor of Science Completion Policy
In order to graduate with a Bachelor of Science degree at MCPHS, a student must complete the final 30 credits of their degree program enrolled in MCPHS courses or through an MCPHS approved articulation agreement.

Internships, Licensure, and Certification

Students graduating from the Acupuncture, Dental Hygiene, Nursing, Occupational Therapy, Optometry, Pharmacy, Physical Therapy, and Physician Assistant programs at MCPHS will seek professional licensure in conjunction with a national examination in order to practice in their chosen profession. Regulations governing licensure (and internship) differ from state to state and country to country. The Registrar's Office completes application materials for licensure candidates and assists students in navigating the overall licensing process. Licensure application preparation sessions are offered for students prior to graduation.

Licensure application materials for all programs will not be released by the Registrar's Office until the degree and date awarded have been posted to student records. Only materials with a submission deadline required for specific state board testing will be released prior to degree posting.

Students enrolled in the Doctor of Pharmacy program will take part in practical experience overseen by a registered pharmacist. National Association of Boards of Pharmacy guidelines require that pharmacy students complete 1,500 clock hours of practical pharmacy experience prior to applying for licensure. Students completing their practical experience must register as a pharmacy intern (as applicable) with the state in which they complete their internship experience. Internship hours must be documented as specified on the internship application form or state board of pharmacy website. As with licensure, intern eligibility criteria and paperwork differ from state to state. Mandatory intern preparation sessions are scheduled for students before they can apply for internship.

Further information regarding the licensure and internship process can be found on the Registrar's Office page of the University website.

ACADEMICS

University Learning Outcomes

With a tradition of excellence in health care and science education since its founding in 1823, MCPHS offers its students degree programs and co-curricular activities that are focused on knowledge and skills development. The University's mission statement affirms its primary goal of preparing students for successful careers in health care through excellence in teaching, scholarship, professional service and community engagement.

MCPHS prepares its graduates to:

- Possess interpersonal, oral, and written communication skills to effectively interact with a diverse population including patients, clients, customers, and colleagues.
- Create and sustain positive and productive professional relationships with patients, clients, customers, and colleagues.
- Apply technical knowledge, information literacy, cultural sensitivity, critical thinking skills, and problem-solving strategies necessary in professional settings to provide comprehensive services to patients, clients, and others.
- Collaborate effectively as a team member to bring projects to successful completion.
- Behave in a responsible manner and hold oneself and colleagues to the professional and ethical standards of their profession.
- Engage in lifelong learning and regular self-assessment to achieve continuous professional growth.

Interprofessional Practice and Education

Success of MCPHS graduates depends on their ability to collaborate effectively as members of the health care team. For more than a decade, MCPHS has advanced interprofessional experiences in the classroom, in the patient care environment, and in the communities they serve.

Interprofessional Practice and Education (IPE) has been fully adopted by key stakeholders across the University as essential to academic programs. Leadership is provided by Working Groups in Boston and in Worcester/Manchester and by the Center for Interprofessional Practice and Education.

The IPE Working Groups have created a unified IPE model across the University which provides a common framework and foundation for IPE initiatives. The Academic Affairs Leadership is committed to supporting the faculty, staff, and students in advancing IPE experiences in curricular and co-curricular settings.

General Education Requirements

Preprofessional, general education and liberal arts distribution requirements for all baccalaureate and first professional degree programs are summarized below. Course sequences for the preprofessional and professional curriculum in a particular degree program may be found in the specific sections pertaining to each of the University's schools.

Placement in Mathematics Courses
Students are placed in mathematics courses based on their math placement exam scores, SAT or ACT scores, and degree program requirements. Any changes in assigned mathematics courses must be discussed with and approved by the coordinator of mathematics**,** an Associate Dean or the Dean in the School of Arts and Sciences before the end of the add/drop period at the beginning of the fall semester.

Oral Proficiency Requirement—Boston
All students who enter the University in any bachelor of science, bachelor of arts, or first professional degree program must, as a requirement for graduation, demonstrate oral proficiency. In order to satisfy this requirement, students must meet the MCPHS Oral Proficiency Minimum Threshold as determined by oral communication faculty. Incoming students whose skills do not meet University standards must take LIB 253 Fundamentals of Oral Communication in Healthcare within the first year of matriculation. Placement is determined by an evaluation of their skills, using the oral proficiency rubric. Successful completion of LIB 253 Fundamentals of Oral Communication in Healthcare satisfies the oral proficiency requirement. This course carries general elective credit (but not humanities credit).

OPE Exemption
Students are exempt from the OPE requirement only if they are matriculated in a program that requires a baccalaureate degree as a condition of admission, or if they are in a certificate program.

Writing Proficiency Requirement—Boston
Students who enter the University without credit for LIB 111 (primarily first-year students) will select either a skills-building course, LIB 110 (Introduction to Academic Reading and Writing) or LIB 111 (Academic Writing and Research) during the summer before matriculation; students who do not make course choices will be placed into one of the two courses. To meet the writing proficiency (WP) requirement, these students must complete either the LIB 110, LIB 111, LIB 112 sequence or the LIB 111, LIB 112 sequence, and they must continue to meet WP standards as these are monitored across the curriculum. Students placed in LIB 110 will earn general elective credit.

All students who have entered the University in any bachelor of science, bachelor of arts or first professional degree program *and* have credit for LIB 111 and LIB 112 (primarily transfer students) must meet WP standards as these are monitored across the curriculum.

To ensure all students achieve and maintain WP, the School of Arts and Sciences has developed guidelines for writing-intensive (WI) courses and a system for WP referrals. In addition, faculty are encouraged to incorporate writing emphases in their classes wherever possible.

In the School of Arts and Sciences, LIB 110, LIB 111, LIB 112, and all HUM courses are designated as WI. WI courses meet the following criteria:

- The amount of required writing should be significant, approximately 3,750–5,000 words (15–20 pages) of graded writing. The total words/pages should be divided among two or more assignments, and at least one assignment should include a draft that students revise with instructor feedback. A single term paper / project is an option, but the project should include several smaller assignments (e.g., a project proposal, followed by a literature review or annotated bibliography, a completed draft, and a revised final project).
- Faculty should devote class time to instruction on writing practices in their disciplines (e.g., abstracts, writing style, citation conventions, and formats) and on strategies for successful completion of assignments; they should provide detailed writing assignment instructions and evaluation criteria.
- Faculty teaching WI courses should set aside a portion of the course grade (minimum of 40%) to be based on writing assignments (this is not grading for writing skills per se but for writing assignments that include demonstration of content learning).
- WI courses should have enrollments capped at 30 or fewer students.
- WI course faculty across the curriculum should employ shared proficiency and grading rubrics when assessing students' WP or evaluating writing assignments.

To continually reinforce WP standards, faculty across the curriculum use a shared WP rubric to identify students who appear to

need additional skills development to meet WP standards. These students are referred to the University Writing Center, where the staff makes proficiency determinations. Based on individual situations, students may be assigned to writing tutors or workshops to address specific writing problems. Failure to complete an assigned workshop or activity could result in a grading penalty or an incomplete grade in the referring course (based on syllabus requirements).

The intent of the WP referral system is to integrate writing expectations, instruction, and development in disciplinary/professional contexts that build on foundations established in the general education curriculum.

Information Literacy Requirements—Boston
As a requirement for graduation, all undergraduate, preprofessional, and transfer students must demonstrate proficiency in information literacy by passing a series of three non-credit online courses - INF 110: Introduction to Research Essentials, INF 220: Intermediate Research Skills, and INF 330: Advanced Research Skills. INF 110 must be completed during the student's first year at MCPHS; most students will complete this course as a required part of Introduction to the Major. INF 220 is typically assigned during the student's second year, and INF 330 is assigned during the third year. Each information literacy course is to be completed by the student during the year it is assigned.

Exemptions from General Education Requirements—Boston
Students enrolled in a certificate program or in a degree program for which a baccalaureate degree is an admission requirement are exempted from the core curriculum, oral and writing proficiency, and library module requirements. Students in the 30-month Physician Assistant Studies program (Boston) are an exception in that they are required to complete the library module requirement though they are exempt from the core curriculum and oral and writing proficiency requirements.

Exemptions from General Education Requirements—Worcester/Manchester
Students enrolled in degree programs on the Worcester and Manchester campuses are exempt from general education requirements, provided they have completed a baccalaureate degree at an accredited institution of higher education in the United States. (Applicants must still fulfill all prerequisite courses required for admission to their degree program.)

Medical Terminology Requirement
Competency in medical terminology is required of students in certain degree programs. Students usually meet this competency within their programs. A medical terminology course taken off campus is not awarded general elective credit in any program. All School of Medical Imaging and Therapeutics students in accelerated baccalaureate programs are required to pass (with a grade of C+ or higher) RSC 250 Elements of Clinical Care for the Radiologic Sciences prior to progressing into their first clinical internship course (NMT 330C or MRI 402 or RAD 201C or RTT 325C).

Students who are unsuccessful in their first attempt to pass RSC 250 may be delayed in progression in their curriculum while repeating the course. Note that students are allowed only two attempts to successfully complete a course. Failure to successfully achieve a grade of C+ or higher in the second attempt of RSC 250, therefore, will result in dismissal from the School of Medical Imaging and Therapeutics program.

Medical terminology is a prerequisite for admission to all fast-track School of Medical Imaging and Therapeutics programs excluding MRI. Students may take this course online through the School of Professional Studies.

Introduction to the Major
All students entering the University as first-year students (including first-year transfer students) must take a 1-semester-hour Introduction to the Major (ITM) during the fall semester. The seminar is designed to ease the transition from high school to college by orienting students to MCPHS resources, career opportunities, and the academic skills needed for classroom success.

Arts and Sciences Core Curriculum
The General Education Core Curriculum mission, courses, and learning outcomes represent MCPHS's definition of what it means to be a college educated person. The core curriculum prepares the graduates of MCPHS to be effective professionals and active participants in civic and community life.

The focus and importance of general education has shifted and expanded over time. In our increasingly technological global society, significant attention to the development of knowledge, skills, and dispositions is required for students to be successful in their fields and in the wide variety of human interactions and technological advancements they will encounter throughout their lives and careers.

Core Curriculum Mission
The General Education Core Curriculum cultivates students' aptitudes for knowing about and interacting in the world. Classroom experiences support students in building important knowledge and skills critical to academic program success and in life after

graduation. The skills and perspectives prepare students to contribute to their professions and society, make connections to various dimensions of illness, health and healthcare, and engage in a lifetime of personal and professional growth.

Core Curriculum Courses
The Core Curriculum consists of 40 credit hours (c.h.) in six different academic domains; Behavioral Sciences, Communication, Humanities, Natural Sciences, Numeracy, Social Sciences. Each academic domain consists of 2 categories of courses (***e.g.***, Composition, Ethics, Statistics). Students are required to pass one course in each of the 12 categories, with the exception of Composition, which requires two courses. All students in baccalaureate and first professional degree programs are required to complete the Core Curriculum. Many degree programs specify which courses must be taken in specific disciplines.

Behavioral Sciences

Introduction to Behavioral Sciences (1 course, 3 c.h.)
LIB.120 Introduction to Psychology

Behavioral Sciences Elective (1 course, 3 c.h.)
BEH.XXX Behavioral Sciences

Communication

Composition (2 courses, 6 c.h.)
LIB.111 Academic Writing and Research
AND
LIB.112 Writing in the Humanities

Communication Studies (1 course, 3 c.h.)
LIB.220 Introduction to Interpersonal
Communication for Health Professionals
LIB.252 Introduction to Speech

Humanities

Ethics (1 course, 3 c.h.)
LIB.512 Healthcare Ethics

Humanities elective (1 course, 3 c.h.)
HUM.XXX Humanities

Natural Sciences

Life Sciences (1 course, 3 c.h.)
BIO.105 Concepts in Biology
BIO.110 Anatomy and Physiology I
BIO.151 Cell and Molecular Biology

Chemistry, with lab (1 course, 4 c.h.)
CHE.110/L Basic Chemistry I, with lab
CHE.113/L Chemistry and Society, with lab
CHE.131/L Chemical Principles I, with lab

Numeracy

Mathematics (1 course, 3 c.h.)
MAT.141 Algebra and Trigonometry
MAT.142 Mathematics for Nurses
MAT.143 Foundations of Algebra and Trigonometry
MAT.144 Business Mathematics and Computer Applications
MAT.150 Precalculus
MAT.151 Calculus I
MAT.171 Calculus I (Advanced)

Statistics (1 course, 3 c.h.)
MAT.261 Statistics

Social Sciences

Introduction to Social Sciences (1 course, 3 c.h.)
LIB.133 Introduction to the Social Sciences

Social Sciences Elective (1 course, 3 c.h.)
SSC.XXX Social Sciences

Core Curriculum Learning Outcomes
Upon successful completion of the MCPHS General Education Core Curriculum students will be able to:

1. Apply basic critical reasoning skills (e.g., analysis, evaluation of assumptions, and selecting and using evidence to form logical conclusions) to content across disciplines.
2. Identify and critically evaluate ethical positions and arguments, apply theories and principles to real and hypothetical cases, and reflect on their own ethical beliefs.
3. Interpret quantitative problems and information, represent information in various mathematical forms, and apply analytical reasoning to arrive at solutions; evaluate the strengths and limitations of quantitative approaches.
4. Apply problem-solving methodologies, protocols, technological tools, lab techniques, and/or theoretical models to questions appropriate to each discipline.
5. Actively read and listen with comprehension, speak, write, and communicate in a variety of genres, demonstrating an attention to audience, purpose, accurate language usage, and organization.
6. Identify information needs; search for and retrieve information; evaluate that information for accuracy, reliability, and credibility; and use the information ethically, including appropriate attribution.

7. Collaborate with others toward a goal, demonstrate respectful behavior and adaptability, address conflict constructively, and invite participation from all collaborators.
8. Analyze how power relationships (e.g. privilege, oppression, opportunity), social identities, and different life experiences intersect in local and global contexts.
9. Apply prior learning, new knowledge, and skills to different contexts; articulate strengths and challenges in their own learning and development over time.

Minors

For those who desire further study in specialty areas, minors are available in American Studies, Applied Statistics, Biology, Black Studies, Chemistry, Gerontology, Health Education and Promotion, Health Humanities, Health Psychology, Nutrition, Performing Arts, Premedical Studies, Public Health, Social Justice, Women's and Gender Studies and Sustainability.

Students complete at least three (3) courses that are only applied to one minor; these courses may not be used to fulfill requirements for the major or another minor. Students declare minors by completing a Declaration of Minor form, and they must fulfill the minor requirements defined for their program, if different from below.

Requirements for completion of some minors vary for students in the Premedical Health Studies degree program. These students declare minors by completing a Declaration of Minor form, and they must fulfill the minor requirements defined for their program.

American Studies

Coordinator: Dr. Martha Gardner

The American Studies minor is designed to offer students an opportunity to coordinate liberal arts electives in several disciplines—behavioral sciences, literature, history, social and political sciences, and public health in the United States—to form a coherent body of knowledge in the study of American culture.

Required Courses

COURSE	TITLE	CREDIT HOURS
LIB 530	Undergraduate Research Project	3
	(following completion of at least 12 credit hours in the minor)	
SSC 430	The Fifties: Introduction to American Studies or	
SSC 431	The Sixties: Introduction to American Studies	3
TOTAL		6

Elective Courses

Three courses selected from the following list for a total of 9 credit hours:

COURSE	TITLE	CREDIT HOURS
HUM 252	The Short Story	3
HUM 291	Introduction to Film	3
HUM 353	Literary Boston in the 19th Century	3
HUM 357O	Immigrant Literature	3
HUM 458	Modern American Writers	3
PBH 435	Public Policy and Public Health	3
SSC 230	Cultural Anthropology	3
SSC 340	Survey of Modern American History	3
SSC 345	Immigrant Experience	3
SSC 353	Shattering the Glass Slipper: The Evolution of the Fairy Tale Heroine	
	in American Culture	3
SSC 365	The Politics of Food	3
SSC 420	20th Century Pop Music and Culture	3
SSC 430*	The Fifties: Introduction to American Studies	3
SSC 431*	The Sixties: Introduction to American Studies	3
SSC 440	Women in History	3
SSC 444	Cigarettes in American Culture	3
SSC 445O	The Irish in America	3
SSC 464	Social Justice Movements in the U.S.	3
SSC 495	Evolution of the Health Professions	3
TOTAL credit hours for minor		15

*If not taken for the required course

**Students may petition the minor coordinators to have HUM 450 and SSC 475 Selected Topic courses accepted to fulfill elective requirements.

Applied Statistics

Coordinator: Dr. Magdalena Luca

The Applied Statistics minor complements any undergraduate degree at MCPHS as it allows students to gain in-depth knowledge of advanced statistical methods and conceptual understanding of applied statistics within their studies. Students in this Minor will complete five courses (15 credits) focusing on biostatistics, statistical programming and research methods.

Required Courses

COURSE	TITLE	CREDIT HOURS
MAT 461	Biostatistics	3
Select one (1) Research Methods course:		
BEH 451	Research Methods in Health and Behavior	3
HSC 410	Health Research Methods	3
PBH 260	Public Health Research Methods	3
Select one (1) Statistical Programming course:		
MAT 4XX	Applied Biostatistics	3
PBH 360O	Data Collection Management	3
PBH 440	Intro to SAS Programming	3
DSC 215	Data Analysis with R	3

Elective Courses

COURSE	TITLE	CREDIT HOURS
Select two (2) elective courses:		
MAT 152	Calculus II or MAT172 Advanced Calculus II	3
MAT 4XX	Applied Biostatistics	3
MAT XXX	Linear Algebra	3
MAT 530	Undergraduate Research Project	3
MAT 532	Directed Study	4
MAT 763	Advanced Statistics	3
PBH 360O	Data Collection Management	3
PBH 440	Intro to SAS Programming	3
DSC 110	Intro to Data Science & Programming	3
DSC 215	Data Analysis with R	3
DSC 220	Programming	3
DSC 230	Programming II	3

Biology

Coordinator: Dr. Crystal Ellis

The Biology minor is designed to offer students an opportunity for additional and advanced-level study in the biological sciences. The minor will prepare students for postgraduate study in biological and medical sciences.

Required Courses

Four advanced-level courses from the following list that are not required for the student's degree (or, for Premedical Health Studies majors, fulfill an advanced Biology elective):

COURSE	TITLE	CREDIT HOURS
BEH 341	Biological Psychology	3
BIO 260	Molecular Biology	3
BIO 321	Nutrition Science	3
BIO 332	Genetics	3
BIO 345	Exercise Physiology	4
BIO 346	Applied Concepts in Public Health	3
BIO 405	Plagues of the Past, Present, and Future	3
BIO 430	Molecular Biology of Cancer	3

BIO 434	Immunology	3
BIO 440	Cell Biology	3
BIO 445	Applied Human Physiology	4
BIO 465	Medical Parasitology	3
BIO 455	Advanced Microbiology (with lab)	4
PBH 335	Human Sexuality	3
PBH 340	Environment and Public Health	3
PSB 328	Physiology/Pathophysiology I or BIO 351 Advanced Anatomy & Physiology I	4
PSB 329	Physiology/Pathophysiology II or BIO 352 Advanced Anatomy & Physiology II	4
PSB 440	Molecular Biotechnology	3
TOTAL		12–15

Black Studies

Coordinator: Dr. Mary Potorti

The Black Studies minor offers an interdisciplinary examination of Black life, history, culture, and politics, drawing on scholarship in the fields of social sciences, humanities, health sciences, and public health. Centering the experiences and contributions of people of African ancestry to the United States and the world, this minor enhances students' understanding of the social construction of race, systemic racism, and racial inequity, highlighting the significance of race in the history and practice of health and health care. A Black studies perspective equips students to work to address racial health disparities and promote racial equity and justice in myriad intersecting realms of society.

The Black Studies minor will be comprised of 15 credit hours. Two required courses will constitute six credit hours. The remaining nine credits will be distributed among elective courses, of which at least three credit hours must be from courses with an HSC or PBH designation.

Required Courses

COURSE	TITLE	CREDIT HOURS
SSC 330	Introduction to Black Studies	3
SSC 343	The Black Freedom Struggle in the United States	3

Elective Courses

COURSE	TITLE	CREDIT HOURS
HUM 454	Speculative Fiction Film, Literature, & Popular Culture	3
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 460	Health Communication, Literacy & Disparities	3
HSC 532	Directed Study	3
LIB 530	Undergraduate Research Project	3
LIB 532	Directed Study	3
PBH 250	Introduction to Public Health	3
PBH 350	Global Health	3
PBH 377	Introduction to Maternal and Child Health	3
PBH 420	Community Health	3
PBH 432	Epidemiology of Chronic Diseases	3
PBH 435	Public Policy and Public Health	3
PBH 460	Field Placement	3
PBH 532	Directed Stud	3
SSC 349	Introduction to Women's & Gender Studies Perspectives	3
SSC 440	Women in History	3
SSC 464	Social Justice Movements in the U.S.	3

Students may also petition the minor coordinator for approval of relevant special topics courses (HSC.450, HUM.450, PBH.450, or SSC.475) or courses offered through the COF Consortium to fulfill elective requirements.

Business

Coordinator: Dr. Francis Melaragni

The Business minor includes three required courses that provide a general foundation in business. In addition to the required courses, students would choose two courses from a list of electives.

Required Courses

COURSE	TITLE	CREDIT HOURS
Required Courses:		
PSB 377	Healthcare Management	3
PSB 416	Managerial Accounting or PSB 415 Financial Accounting	3
PSB 429	Operations Management	3
TOTAL		9

Elective Courses

Two courses selected from the following list for a minimum of 6 credit hours:

PSB 210 Macroeconomics (3); PSB 215 Microeconomics (3); PSB 320 Healthcare Delivery (3); PSB 376 Healthcare Marketing (3); PSB 445 Sales of Pharmaceutical & Healthcare Products (3); PSB 456 Entrepreneurship (3); PSB 447 Fundamentals of Business Law (3) or PSB 411 Pharmacy Law (3); LIB 512 Healthcare Ethics (3); HSC 310 Healthcare Informatics (3); PSB 380 Applied Business Techniques (3); PSB 434 Managed Healthcare Management & Administration (3); PSB 447 Fundamentals of Business Law (3).

Chemistry

Coordinator: Dr. Songwen Xie

The Chemistry minor is designed to offer students an opportunity for additional and advanced-level study in the chemical sciences.

Required Courses

COURSE	TITLE	CREDIT HOURS
CHE 234L	Organic Chemistry II Laboratory	1
CHE 314	Analytical Chemistry (with lab)	4
CHE 717	Instrumental Analysis (with lab) or	
CHE 340	Inorganic Chemistry (with lab)	4
PHY 272L	Foundations of Physics I Laboratory	1
PHY 274	Foundations of Physics II	3
PHY 274	Foundations of Physics II Lab	1
TOTAL		14

Gerontology

Coordinator: Dr. Devan Hawkins

The Gerontology minor seeks to (1) encourage students to develop an understanding of the complex meaning of aging, (2) provide students with a foundational understanding of the impact that an increasingly aging population will have on society, particularly the healthcare system, and (3) prepare students for clinical fields that involve care for older adults.

Required Courses

COURSE	TITLE	CREDIT HOURS
PBH 375	Survey of Gerontology	3
BIO 455	Applied Human Physiology	4
SSC/HUM/ BEH/PBH 532/530	Directed Study or Undergraduate Research	3
TOTAL		10

Elective Courses

Six credits from the following courses:

COURSE	TITLE	CREDIT HOURS
PBH 380	Aging, Place & Health	3
PBH 450	Disability & Health	3
BEH 362	Aging & Adult Development	3
BEH 254	Death & Dying	3
BEH 352	Human Development through the Life Cycle	3
BEH 344	Integrative Therapies & Mental Health in Aging	3
PPB 534	Clinical Care for Aging Patients	3
PBH 432	Epidemiology of Chronic Disease	3
TOTAL		15

Health Education and Promotion

Coordinator: Dr. Lisa Johnson

The HEP Minor pairs well with any undergraduate degree at MCPHS as it allows students to guide and complement health education and promotion within their studies. Students in this Minor will complete six courses in total that touch on the eight "Areas of Responsibility" of the Certified Health Education Specialist (CHES) exam: assessment of needs and capacity; planning; implementation; evaluation and research; advocacy; communication; leadership and management; and ethics and professionalism. Students who wish to sit for the CHES credential are encouraged to meet with the Minor Coordinator to discuss specific classes to complete.

Required Courses

COURSE	TITLE	CREDIT HOURS
HSC 301	Health Promotion	3
PBH 250	Introduction to Public Health	3
Total		6

Elective Courses

Group 1: Select two CHES-aligned courses*:

COURSE	TITLE	CREDIT HOURS
HSC 315	Planning Health Education and Promotion Programs	3
HSC 330	Advocacy and Leadership in Health Education and Promotion	3
HSC 421	Assessing Community Health Needs	3
HSC 460	Health Communication, Literacy, and Disparities	3

Group 2: Select two topic-focuses courses (this is not an exhaustive list)

COURSE	TITLE	CREDIT HOURS
Additional courses from Group 1		
HSC 220	Personal Health and Wellness	3
HSC 355	Contemporary Topics in Health Education and Promotion	3
HSC 401	Public Health and Policy	3
HSC 410	Health Research Methods or PBH 260 Public Health Research Methods	3
HSC 470	Health Sciences Practicum or PBH 460 Field Placement	3
HSC 490	Health Sciences Capstone or PBH 480 Public Health Capstone	3
HSC 532	Health Sciences Directed Study	3
PBH 230	Peer Health Education	3
PBH 310	Public Health Surveillance	3
PBH 335	Human Sexuality	3
PBH 377O	Maternal and Child Health	3
PBH 380O	Aging, Place, and Health	3
PBH 420	Community Health	3

PBH 450	Community-Based Participatory Research	3
PBH 450	Occupational Health	3
SSC 464	Social Justice Movements in the US	3
BIO 321	Nutrition Science	3
BIO 345	Exercise Physiology	3
BIO 346	Applied Concepts in Public Health	3
BIO 405	Plagues & Pandemics	3
BIO 420	Communication in the Biological Sciences	3
BIO 470	The Biology of Obesity	3

Other courses will be evaluated on a case-by-case basis by Minor Coordinator
*Students wishing to take the CHES exam will complete all four courses from Group 1.

Health Humanities

Coordinator: Dr. A. David Lewis

The Health Humanities minor provides a coordinated curriculum of study that emphasizes the relevance of humanistic perspectives to illness experiences and the healthcare professions. Students must earn a minimum of 15 credit hours.

Required Courses

COURSE	TITLE	CREDIT HOURS
HUM 345	Healthcare Humanities	3
HUM 456	Narrative and Medicine	3
Total		6

Elective Courses

Three courses from the following lists, including at least one HUM and one SSC course:

Humanities

COURSE	TITLE	CREDIT HOURS
HUM 355	Science, Technology, and Values	3
HUM 452	Women Writers	3

Social Sciences

COURSE	TITLE	CREDIT HOURS
SSC 432	Medical Anthropology (requires Cultural Anthropology prerequisite)	3
SSC 444	Cigarettes in American Culture	3
SSC 495	Evolution of the Health Professions	3

Behavioral Sciences

COURSE	TITLE	CREDIT HOURS
BEH 254	Death and Dying	3
BEH 260	Lifestyle Medicine	3
BEH 405	Mind/Body Medicine	3
BEH 454	Stress and Illness	3

Health Psychology

Coordinator: Dr. Stacie Spencer

The Health Psychology minor is designed to offer students a solid foundation in the theories, approaches, and methods of psychology as they relate to real-world issues, including health and well-being. Students must earn a minimum of 15 credit hours.

Required Courses

COURSE	TITLE	CREDIT HOURS
BEH 250	Health Psychology	3
BEH 451	Research Methods in Health and Behavior	3
TOTAL		6

Elective Courses

Three additional BEH courses with at least one basic (traditional areas not directly associated with health issues) and one applied (courses that have a specific health-related focus) course. Lists of basic and applied courses may be found on the MCPHS website and at the Center for Academic Success and Enrichment and will be provided to students when they are accepted into the minor.

Nutrition

Coordinator: Dr. Mary Potorti

As good nutrition is a foundation of health, MCPHS students may minor in Nutrition. This minor course of study will support all undergraduate programs at MCPHS as an enriching educational experience to study nutrition from a biopsychosocial perspective. It is interdisciplinary by design. It will provide a foundation in nutrition, especially for students who desire more knowledge in the field before deciding whether to further pursue nutrition through graduate study and/or professional development.

The minor will comprise 15 credit hours; 9 credit hours are from required courses, and 6 are from electives.

Required Courses

COURSE	TITLE	CREDIT HOURS
BEH 353	Nutrition and Health	3
BIO 321	Nutrition Science	3
SSC 356	The Politics of Food	3
TOTAL		9

Elective Courses

Two courses selected from the following list for a total of 6 credit hours:

COURSE	TITLE	CREDIT HOURS
BEH 260	Lifestyle Medicine	3
BIO 470	Biology of Obesity	3
HSC 301	Health Promotion	3
HSC 315	Planning Health Education and Promotion Programs	3
PBH 230	Peer Health Education	3
PBH 250	Introduction to Public Health	3
PBH 350	Global Health	3
PBH 432	Epidemiology of Chronic Diseases	3
LIB 530	Undergraduate Research	3
LIB 532	Directed Study	3

Students may also petition to apply credit from nutrition courses completed through the Colleges of the Fenway toward elective credits in this minor course of study.

Performing Arts (Colleges of the Fenway)

Coordinator: Dr. A. David Lewis

The Colleges of the Fenway minor in Performing Arts integrates performing experiences with classroom study of the performing arts: dance, music, theater, and performance art. The minor includes study, observation, and practice of the performing arts. It consists of Introduction to Performing Arts; three discipline-specific courses (dance, music, and theater); and one upper-level course, as well as three semesters of an approved performance ensemble.

Requirements

Four academic courses as follows:

- Introduction to the Performing Arts
- Three courses, one each in music, dance, and theater

One upper-level elective course

Three semesters of participation in an approved co-curricular (noncredit) performing arts activity from the following:

- COF Orchestra
- COF Chorus
- COF Dance Project
- COF Theater Project
- Emmanuel Theater Guild
- Simmons Chorale

Information on available performing arts courses, the performance ensembles, and completion of the minor is available from Dr. Virginia Briggs, MCPHS advisor for the Minor in Performing Arts, in the School of Arts and Sciences; and Raymond Fahrner, Director, Office of Performing Arts, Colleges of the Fenway (tel.: 617.521.2075).

Premedical

Coordinator: Dr. Jennifer Wade

MCPHS offers solid preparation for entrance into medical, dental, optometry, podiatry, or veterinary schools. Majors in Chemistry and Pharmacology/Toxicology follow a curriculum that meets or exceeds the minimum requirements of most medical schools. Majors in Medical and Molecular Biology, Pharmaceutical Sciences, Pharmacy, and Public Health may choose electives that also fulfill premedical requirements. Majors in Health Psychology who would like to fulfill premedical requirements do so through the BS Health Psychology with Premedical (MD) Track and are not eligible for the Premedical minor.

Medical schools vary in their recommendations beyond the minimum requirements. Students who choose the Premedical minor may tailor their preparation for specific medical schools by selecting appropriate electives. Opportunities also are available for excellent students to do research in a laboratory or clinical setting, thereby improving their skills and increasing the chance of admission to a medical school.

The Premedical minor is *not* appropriate for students who wish to pursue professional study in the Physician Assistant, Physical Therapy, or Occupational Therapy fields.

Required Courses

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
MAT 151*	Calculus I	3
PHY 270*	Foundations of Physics I	3
PHY 272L*	Foundations of Physics I Laboratory	1
PHY 274*	Foundations of Physics II	3
PHY 274L	Foundations of Physics II Laboratory	1
BIO 360**	Cellular Biochemistry or PSB331/332 Biochemistry I and II	4 or 6

* MAT 171 and PHY 280 and 284 may be substituted for these courses.
** Students may complete BIO 360 Cellular Biochemistry (4) in place of PSB 331/332.

Elective Courses

In addition to required courses, students seeking to earn a Premedical minor must complete three electives (each worth three credits) from the following list. The three electives must have three different prefixes.

Any BEH course
Any 200- 300-, or 400-level BIO course
Any HUM course
Any 300- or 400-level PBH course
Any SSC course

Public Health

Coordinator: Dr. Keri J. Griffin

The Public Health minor provides a coherent curriculum in the foundational areas of public health: the population health perspective, biostatistics, and epidemiology. Students choose additional studies in public health areas of their interest (e.g., health promotion, community health, medical anthropology, health policy, or environmental health). The minor provides a complementary area of study for majors in Health Psychology, Medical and Molecular Biology, and Premedical Health Studies. It is available to other programs with general elective options.

Required Courses

COURSE	TITLE	CREDIT HOURS
MAT 461	Biostatistics	3
PBH 250	Introduction to Public Health	3
PBH 330	Introduction to Epidemiology	3
TOTAL		9

Elective Courses

Two electives from the following list:

COURSE	TITLE	CREDIT HOURS
PBH 260	Public Health Research Methods	3
PBH 335	Global Health	3
PBH 340	Environment and Public Health	3
PBH 335	Human Sexuality	3
PBH 420	Community Health	3
PBH 435	Public Policy and Public Health	3
PBH 380	Aging, Place, and Health	3
PBH 432	Chronic Disease Epidemiology	3
	Field Epidemiology	3
PBH 360	Health Data Collection and Management	3
PBH 430	Infectious Disease Epidemiology	3
PBH 440	Introduction to SAS Programming	3
PBH 377O	Introduction to Maternal and Child Health	3
	Occupational Health	3
PBH 310O	Public Health Surveillance	3
PBH 375	Survey of Gerontology	3
PSB 377	Healthcare Management	3
SSC 230	Cultural Anthropology	3
SSC 444	Cigarettes in American Culture	3
SSC 464	Social Justice Movements in the US	3

Social Justice

Coordinator: Dr. Mary Potorti

The Social Justice minor provides students with an interdisciplinary foundation for understanding systems of power, oppression, and social stratification as well as their ramifications for the lived experiences of historically disadvantaged and oppressed groups. Viewing access to public goods like education, housing, safety, food, and healthcare as a right for all people, a social justice perspective equips students to work to address health disparities and promote health equity in myriad intersecting realms,

including race, ethnicity, sex, gender, sexual orientation, socioeconomic class, and ability.

The social justice minor will be comprised of 15 credit hours. One required course will constitute three credit hours. The remaining twelve credits will be distributed among elective courses, of which at least six credit hours must be from courses with an HSC or PBH designation and at least three credit hours must be from courses with an HUM or SSC designation.

Required Courses

COURSE	TITLE	CREDIT HOURS
SSC 464	Social Justice Movements in the U.S	3

Elective Courses

COURSE	TITLE	CREDIT HOURS
Students must take at least TWO courses from the following:		
HSC 301	Health Promotion	3
HSC 330	Advocacy and Leadership in Health Education and Promotion	3
HSC 355	Contemporary Topics in Health Education and Promotion	3
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 421	Assessing Community Health Needs	3
HSC 460	Health Communication, Literacy & Disparities	3
HSC 532	Directed Study	3
PBH.250	Introduction to Public Health	3
PBH 350	Global Health	3
PBH 377	Introduction to Maternal and Child Health	3
PBH 420	Community Health	3
PBH 432	Epidemiology of Chronic Diseases	3
PBH 435	Public Policy and Public Health	3
PBH 460	Field Placement	3
PBH 532	Directed Study	3
Students must take at least ONE course from the following:		
HUM 357	Immigrant Literature	3
HUM 425	Applied Ethics	3
SSC 343	The Black Freedom Struggle in the United States	3
SSC 345	Immigrant Experience	3
SSC 349	Introduction to Women's & Gender Studies	3
SSC 355	Persuasion and Social Influence	3
SSC 356	The Politics of Food	3
SSC 435	Cultural Geography	3
SSC 440	Women in History	3
Additional Elective Options:		
LIB.530	Undergraduate Research Project	3
LIB.532	Directed Study	3

Students may also petition the minor coordinator for approval of relevant special topics courses (HSC.450, HUM.450, PBH.450, or SSC.475) or courses offered through the COF Consortium to fulfill elective requirements.

Sustainability (Colleges of the Fenway)

Coordinator: Dr. Lana Dvorkin Camiel

The Colleges of the Fenway minor in Sustainability encourages students outside of environmental science itself to explore the connections of their career-directed studies to the linked issues of the natural world, finite resources and social justice. The minor is purposely designed for breadth of coverage with the intent for the student to explore various dimensions of sustainability that will inform their view of their major. The selection of specific courses within the minor is meant to be undertaken in consultation with the student's major advisor or another faculty member with an interest in issues of sustainability.

Requirements

A. **One academic course (taken twice) as follows:**

ENVI 201 Environmental Forum (taken twice), 3 credit hours

B. A total of 16 to 20 credits (depending on the college and credits), are required for the minor, with students taking four courses from at least two of the following groups:

Environmental Technology and Science

MCPHS:

HSC 301O	Health Promotion
PPB 540E	Complementary and Alternative Medicine
PPB 535	Herbal Supplements
CHE 435	Green Chemistry
BEH 454	Stress and Illness

WIT:

ARC 550	Urban Studies
ARCH 482	Site Planning and Landscape
ARCH 528	Environmental Systems
ENVM 580	Energy Resources and Conservation
ENVM 280	Environmental Ecology
CHEM 400	Environmental Chemistry
CHEM 550	Environmental Chemistry
CIVT 350	Environmental Topics Design/Construction
CCEV 417	Design for the Environment
CIVT 600	Environmental Design and Construction
CCEV 215	Water Resources Design/Management
CCEV 350	Env Topics in Design Construction Ind
CCEV 420	Sustainability in Built Environment
MECH 540	Energy Analysis/CoGen Build Facilities

Simmons:

BIOL 104	Introduction to Environmental Science
BIOL 245	Ecology
CHEM 109	Chemistry and Consumption
CHEM 227	Energy and Global Warming
HON 308	Sustainability and Global Warming
PHYS105	Science and Technology in the Everyday World

Emmanuel:

BIOL1112	Biology and Society
BIOL 1211	Emerging Infectious Diseases
BIOL 2105	Plant Biology
BIOL 2107	Ecology
BIOL 2151	Marine Biology
CHEM 1104	Chemistry of Everyday Life
CHEM 1111	Chemistry: World of Choices
CHEM 1112	Chemistry: World of Choices
CHEM 2113	Chemistry of Boston Waterways
PHYS 1121	Energy and the Environment
PHYS 1222	Energy and the Environment

MassArt:

EDAD 202	Methods and Materials
EDAD 312	Net Zero House
EDAD 302	Sustainable Architecture
LAMS 320	Environmental Science

Policy/Economics

MCPHS:

PBH 435	Public Policy and Public Health
SSC 495	Evolution of the Health Professions

Simmons:

ECON 247	Environmental Economics
ECON 239	Government Regulation of Industry
POLS 239	American Public Policy
POLS 245M	Politics of Newly Industrialized States

Emmanuel:

ECON 2112	Politics of International Economic Relations
ECON 3103	International Economy
ECON 3109	Emerging Economies
ECON 3113	Economics of Health Care
ECON 3115	Economics and the Environment
POLS 2203	Political Socialization

	POLS 3303	Street Democracy
	POLS 3305	Women in Global Politics

MassArt:

	LASS 299	Global Black Studies
	LASS 357	Civil Liberties

Social Equity

MCPHS:

	NUR 702	Human Diversity, Social, and Policy Issues
	PPB 538	Global Infectious Diseases
	SSC 230	Cultural Anthropology
	SSC 240	Social Science Problems
	SSC 345	Immigrant Experiences
	SSC 432	Medical Anthropology

Simmons:

	HIST 205	Global Environmental History
	MGMT 224	Socially Minded Leadership
	SJ 220	Working for Social Issues
	SOCI 241	Health Illness and Society
	SOCI	International Health

Emmanuel:

	ART 2202	Art History
	ART 2204	From Globalization to Transnationalism
	PHIL 1115	Recent Moral Issues
	PHIL 1201	Global Ethics
	PHIL 3201	Race, Ethnicity and Ethics
	SOC 1111	Introduction to Sociology
	SOC 2105	Race, Ethnicity and Group Relations
	SOC 2107	The Urban World
	SOC 2127	Social Class, and Inequity
	SOC 2129	Cultural Geography
	THRS 2108	Religion and the Environment
	THRS 2301	Healthcare: Social Justice and Economics
	THRS 3133	Social Justice and Religious Traditions

MassArt:

	HART 375	Landscape: Space and Place
	HART 404	Protecting Cultural Heritage

Women's and Gender Studies

Coordinator: Dr. Kristen Petersen

The interdisciplinary Women's and Gender Studies minor presents students with an understanding of gender across disciplines, maximizing the School's strengths in the social sciences, health and behavioral sciences, public health, biology, and the humanities. Women and men experience the world differently because socially constructed gender roles determine their spheres of influence, expectations for behavior**,** and health issues. Since MCPHS students are trained for occupations in healthcare fields, an understanding of the influence of gender in women's and men's lives is particularly relevant to their education.

Required Courses

COURSE	TITLE	CREDIT HOURS
SSC 349	Introduction to Women's and Gender Studies	3

Two of the Following Courses

BEH 356	Gender Roles	3
PBH 335	Human Sexuality	3
SSC 230	Cultural Anthropology	3
SSC 440	Women in History	3

Two of the Following Elective Courses

BEH 351	Social Psychology	3
BEH 352	Human Development through the Life Cycle	3
BEH 458	Child and Adolescent Development	3
BIO 532	Directed Study	3
HUM 357	Immigrant Literature	3
HUM 458	Modern American Writers	3

LIB 532	Directed Study	3
PBH 435	Public Policy and Public Health	3
PBH 450J	Women and Public Health	3
PBH 805	Maternal and Child Health	3
SSC 353	Shattering the Glass Slipper: Evolution of Fairy Tale Heroine in American Culture	3
SSC 432	Medical Anthropology	3
SSC 440	Women in History	3
SSC 464	Social Justice Movements in the US	3
SSC 495	Evolution of the Health Professions	3
TOTAL		15

*These courses may also be used to fulfill Elective course requirements.

**Students may petition the Minor Coordinator to have HUM 450 and SSC 475 Selected Topics courses accepted to fulfill elective requirements

STUDENT SERVICES

Student Supports

Center for Academic Success and Enrichment (CASE)
The goal of the Center for Academic Success and Enrichment (CASE) on all three campuses is to assist students in maximizing their potential to be more efficient, effective, and independent learners. The CASE seeks to develop the whole student by enhancing integrity, professionalism, and self-responsibility. Students who are willing to make a commitment to their academic success and are serious about pursuing their educational and professional goals will learn how academic support outside the classroom contributes to that success. These University resources are designed to provide students with the tools that they will need to succeed in their academic programs and that they can ultimately use to enhance their professional careers. Services are described below, and more information is available on the MCPHS website.

The **CASE Boston** offers several key services to assist students with exploring majors, minors and careers, managing course registration each semester, and acquiring new learning and study strategies. At the CASE Boston, students can interact regularly with their MAC Team, which consists of a Faculty Mentor (M) and an Academic Coach (AC).

Faculty Mentoring (CASE Boston)
The Faculty Mentor program on the Boston campus was created to provide additional support for our students in the areas of career discernment, long-term course planning and goal-setting. Faculty Mentors are full-time faculty members who have weekly office hours within the CASE. The Mentors represent each major at MCPHS and students are paired with a Faculty Mentor within their own major. The Mentors work in conjunction with the Academic Coaches to make up MAC teams, which work together to provide more well-rounded guidance and support for our students.

Academic Coach (CASE Boston)
Academic Coaches are committed to shaping a dynamic advising environment designed to meet the educational and developmental needs of the student body. The professional staff who work in the center are available to assist students with goal setting, course registration, referral to campus resources, and other services designed to contribute to their academic experience. They provide focused advising for each degree program by helping students understand their specific program requirements and policies.

The **CASE Worcester and Manchester** works in collaboration with faculty and deans to provide students with the tools they need to succeed in the accelerated professional programs. Academic coaches on both campuses hold workshops on study skills, time management, test-taking strategies, academic reading, and critical thinking to help students maximize their performance. All students are encouraged to meet with an academic coach with any questions concerning the curriculum or if they are looking for academic assistance with their coursework.

The CASE also offers support to students in the Boston, Worcester, and Manchester programs and online via the University Learning Network (ULN), which provides Subject Tutoring (Peer and Professional), Supplemental Instruction, the English Language Resource Center (ELRC), and the Writing Center.

Academic Success Plans
Each student on probation is required to meet with a designated member of the CASE on their home campus by the end of the second week of the probationary semester to develop and agree to—in writing—an Academic success plan (ASP). The ASP may include mandatory study/advising sessions, mandatory class attendance, or other stipulations aimed at encouraging and supporting student success. For more information about probation, please view the Academic Probation section under Academic Policies and Procedures.

The University Learning Network – ULN
The ULN centralizes key academic support resources such as Subject Tutoring, Supplemental Instruction, **the English Language Resource Center (ELRC), and the Writing Center. All services offered through the University Learning Network come at no additional cost to students.**
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Subject Tutoring (Boston, Worcester and Manchester)
Subject tutoring is one tool available to students interested in reinforcing the material presented in the classroom. Peer and Professional Tutors provide expertise, experience, and encouragement to help students navigate challenging content. They do not provide "answers," but rather assist in problem solving, help focus on assignments and help foster understanding of course content. Students are able to meet with a tutor one to one or in small group settings. During these tutoring sessions, students

meet regularly with a student peer tutor to clarify and reinforce course materials in many of the more challenging courses at the University. The CASE staff members work in collaboration with faculty to provide tutoring that facilitates and enriches students' learning and understanding of course content. Peer tutors are students who excel in their areas of study and who enjoy helping their fellow students achieve academic success.

Peer Mentoring (Boston, Worcester and Manchester)
Peer Mentors are upper-level students who work with first-year students to acquaint them with the University and to help them make a smooth transition to MCPHS. On the Worcester and Manchester campuses, Peer Mentors begin working with new students shortly after acceptance. On the Boston campus, Peer Mentors are an integral part in the Introduction to the Major (ITM) course required for all first-year students in the fall semester providing insight into campus life, class structures, location of campus resources, and other advice regarding the day to day activities that students participate in.

English Language Resource Center (All Campuses)
The English Language Resource Center (ELRC) provides support in studying effectively in English to multilingual students. ESL faculty members offer tutoring, workshops, and other forms of support to students in writing, understanding texts/reading, pronunciation, presentation preparation, test prep, and other areas of need. For more information, email: uln@mcphs.edu.

Writing Center (All Campuses)
The Writing Center offers free individual consultation on an appointment or basis to MCPHS students, staff, and faculty. The Writing Center is staffed by professionals with extensive experience in classroom teaching, writing, and editing. Clients include first-year students in the required writing sequence; upper-division students writing course papers and preparing for essay exams. In addition to in person meetings, the Writing Center has the capability of meeting with students online. For more information, email uln@mcphs.edu.

Pharmacy Learning Groups (Worcester and Manchester)
Worcester and Manchester pharmacy students are organized into assigned learning groups, which are designed to enhance learning and group support. Each learning group consists of students who remain together as a unit throughout the curriculum, and each group is assigned a faculty member as an academic mentor. Peer Mentors are assigned to learning groups to further facilitate peer support.

Career Services
Career Services provides all students with individualized advising, industry-specific information and resources, development of job search skills, and the opportunity for hands-on professional experiences to support personal goals and career success. Through workshops, events, alumni and community networking, and employer partnerships, students have access to a range of programs to meet their needs and their schedules. The department works in collaboration with academic departments, student services, student organizations, and professional associations to ensure quality engagements and timely information. By utilizing Career Services, students will become proficient in defining their goals and equipping themselves with the tools to gain access to industries and careers of their choice.

Office of Student Access and Accommodations (All Campuses)
The Office of Student Access and Accommodations (OSAA) is a part of the Division of Student Affairs and provides accommodations to eligible students. Students who are eligible for accommodations must present documentation to demonstrate evidence of a current condition that interferes with one or more major life functions as defined by the ADAA 2008 and/or Section 504 of the Rehabilitation Act of 1973.

Determination of reasonable accommodations is a deliberative and collaborative process between the student and the OSAA. Documentation must present evidence that the student may have current functional limitations and/or may currently experience accessibility barriers in the educational or physical environment. The OSAA will consider the student's disability, history, experiences, request for services, as well as the unique characteristics of the course and program requirements, in order to determine if a specific accommodation is reasonable. MCPHS ensures FERPA compliance and therefore all information submitted to OSAA will remain confidential. To learn more about our services or to request a meeting with an OSAA staff member, please email OSAA@mcphs.edu or call 617.879.5995.

Food and Financial Insecurity Resources (All Campuses)
The Dean of Students office strives to provide basic need items. All three campuses have a Care Closet with free toiletries and items for basic needs care.

Boston offers free meal swipes and small emergency loans. In order to see if you qualify for these items please contact the dean of students office. A 20 minute consultation is needed to determine if you qualify.

In case you are unsure if you are facing food or financial insecurity here are some definitions:

Food Insecurity is the limited or uncertain availability of nutritionally adequate and safe foods, or the inability to acquire such foods in a socially acceptable manner.

Financial Insecurity: Uncertain where your next paycheck is coming from, or how you will be paying a bill, the inability to pay for needed items.

Housing Insecurity includes a broader set of challenges such as the inability to pay rent/utilities or a need to move frequently.

It's OK to ask for help, please do! Students on all campuses can contact the Office of Student Affairs, Located on the third floor of the Fennell building or via email to student_affairs@mcphs.edu.

Counseling and Health Services

Counseling Services
The mission of Counseling Services is to support the intellectual, emotional, social, and cultural development of students in a multicultural environment. Counseling Services offers varied services to students of the Boston, Worcester, and Manchester campuses. These include short-term counseling (four to eight sessions); crisis management; psychoeducational workshops and programs; a resource and referral service; and consultation to student groups, faculty, and the University community. The staff values an atmosphere that is welcoming and comfortable for all students regardless of race, gender, ethnic background, age, sexual orientation, religion, citizenship, or disability.

In the case of a serious mental health emergency on the Boston Campus:
If you are experiencing a mental health emergency during regular business hours (M-F 8:30am-4:30pm) come to our office at Fennell 3rd floor, or call us at 617-732-2837. **Outside of business hours, please call 617-732-2837 and press 9 to be directly connected to the after-hours counselor. Additionally, for emergencies, call 911, or go to your local emergency room.**

In the case of a serious mental health emergency on the Worcester Campus:
If you are experiencing a mental health emergency during regular business hours (M-F 8:30am-4:30pm) come to our office at 40 Foster Street, 1st Floor. At any hour, any day call us at 508.373.5718 **and press 9 to be put in touch with a mental health counselor. Additionally, for physical emergencies, contact Public Safety, call 911, or go to your local emergency room.**

In the case of a serious mental health emergency on the Manchester Campus:
If you are experiencing a mental health emergency during regular business hours come to our office at BASC 118, Lower Level, Student Affairs Suite, or call us at 603.314.1781 or 603.314.1783. **Outside of business hours, please call 603-314-1781 and press 9 to be directly connected to the after-hours counselor. Additionally, for emergencies, you can call Manchester Mental Health at 603-668-4111, call 911, or go to your local emergency room.**

If you are worried about another student, please follow the same protocol listed above in order to ensure the safety of that student.

If you are experiencing a period of increased difficulties or a change in your emotional well-being, please contact MCPHS Counseling Services to set up an appointment to discuss these concerns with a mental health care professional.

Please refer to https://www.mcphs.edu/student-life/counseling-servicesfor more detailed information about services available at each campus, as well as interactive screenings, questions, and answers about Counseling Services, and other helpful links.

Health Insurance
According to the Commonwealth of Massachusetts and MCPHS policy, all matriculated students (regardless of enrollment) must be covered by a health insurance program. The University makes available a general health insurance program that meets these standards. This policy is provided by an independent carrier beginning September 1 and continuing for 12 months. University student health insurance information is located on the MCPHS website under Student Health. Students will be automatically enrolled in this plan unless a waiver is completed and received by Student Financial Services prior to the first day of classes. Students registering late must submit the waiver at that time. The waiver stipulates that personal coverage will be maintained during the enrollment period. **If Student Financial Services does not receive the waiver prior to the first day of classes, the student will be billed for the insurance premium and will remain responsible for payment of said premium. The waiver must be renewed annually.**

All international students will be enrolled in the University student health insurance plan automatically, with the exception of those international students whose sponsoring institutions have a signed agreement with MCPHS that complies with the University's health insurance waiver requirements, or international students with a plan for which the insurer's primary home office is based in the United States *and* the policy provides comparable coverage to the University student health insurance plan. International students who do not fall under one of the two conditions above *must* purchase the University student health insurance plan.

Financial Responsibility of Students Following an Injury, Accident, Exposure, or Needle Stick
Students are responsible for all costs and expenses resulting from any injuries, accidents, exposures, including exposure to communicable diseases (such as COVID-19), or needle sticks in which they are involved on campus or during any clinical rotation.

When seeking treatment for any such injury, accident, exposure, including exposure to communicable diseases (such as COVID-19), or needle stick, a student must present their own health insurance information to the healthcare provider. Any deductible or copayment is the student's responsibility. All students must follow the claims procedures required by their respective insurance companies.

Students are not eligible for workers' compensation benefits from MCPHS or any affiliated teaching hospital or clinical site to which they are assigned while completing their clinical requirements, unless required by applicable state law, because students are not employees of either the University or such clinical facilities.

Student Health Services (Boston only)
For routine healthcare while on the Boston campus, MCPHS students utilize the Student Health Services located on the second floor of 578 Huntington Avenue, in the Treehouse residence hall. Students utilize their personal health insurance for these visits. Student Health Services accepts a large number of health insurance plans. For more information about the array of medical services, please call 617.879.5220.

Health Services for Worcester and Manchester students are available through many local healthcare providers.

Campus Life

Identification Policy
For reasons of safety and security, all students must be readily identifiable while they are on campus and/or engaged in required off-campus activities, including internships and clinical rotations. Therefore, any head covering that obscures a student's face may not be worn, either on campus or at clinical sites, except when required for medical or religious reasons. In addition, all students are required to wear their University-issued ID at all times when on campus and/or engaged in required off-campus activities, and to show it upon request of a properly identified official or member of the MCPHS staff, and to remove any covering that obscures the student's face in order to verify the student's identity for security purposes.

Loss of an ID card should be reported immediately to the MCPHS Department of Public Safety. The fee to replace an ID card—for any reason—is $25; application and payment for replacement is made at the Office of Student Financial Services. The ID card also serves as the University library card.

Residence Life (Boston)
For a description of the Boston residence halls, see the Facilities section. For additional information regarding residence life in Boston, refer to the website at https://www.mcphs.edu/student-life/boston/housing.

Residence Life (Worcester)
For a description of the Worcester residence halls, see the Facilities section. For additional information regarding residence life in Worcester, refer to the website at https://www.mcphs.edu/student-life/worcester/housing.

Off Campus Housing (Manchester)
For a description of off campus housing options, please refer to https://www.mcphs.edu/student-life/manchester/living-in-manchester.

Schumann Fitness Center (Boston)
The Schumann Fitness Center, located in the Flanagan Campus Center on the Wentworth Institute of Technology (WIT) campus, offers fitness opportunities to MCPHS, WIT, and Massachusetts College of Art and Design students. The Schumann Fitness Center offers an array of Nautilus, cardiovascular, and free-weight equipment. In addition, group exercise and wellness classes such as kickboxing, Pilates, yoga, and Zumba are offered to meet campus needs.

The Schumann Fitness Center houses the Colleges of the Fenway (COF) intramurals program, which promotes team sports activities between and among the five COF campuses. Students participate in recreational sports, including basketball, volleyball, flag football, and soccer (for both men and women). The COF intramural program achieves the benefits of a large university setting while still catering to the diverse needs of each institution. For more information, refer to the COF website at www.colleges-fenway.org.

Recreation and Wellness (Worcester)
All students have free 24 hours, 7 day a week access to the University wellness center located at 25 Foster St. The gym includes cardio and strength training equipment and a state-of-the-art computerized Fitness-On-Demand space for interactive classes tailored to individual needs.

Recreation and Wellness (Manchester)
The Manchester Student Government Association is exploring local fitness options and should have updates late fall.

Campus Life/Student Activities (All Campuses)
Campus Life/Student Activities enhances and supports the academic mission of the University. Through participation in cultural, educational, and social programming, as well as a variety of student groups and clubs, students can develop leadership and organizational skills to function in a diverse society.

The office strategically coordinates programs that foster a campus environment that recognizes, celebrates, and values diversity of religion, race, ethnicity, gender, age, disability, sexual orientation, and nationality. Students at MCPHS–Boston are members of the Colleges of the Fenway Consortium and have access to the resources at the other four colleges in the area. Check out the Cardinal Pride portal for daily updates.

Orientation (All Campuses)
The University holds mandatory Orientation programs during the summer and in January on the Boston, Manchester, and Worcester campuses for newly enrolled students. Orientation provides an opportunity for students to be introduced to the University's facilities, faculty, and staff, and to their new peers. The mission of student Orientation is to prepare incoming students to be successful members of the MCPHS community. Orientation programs emphasize academic excellence, successful transition to the healthcare profession, and an opportunity to familiarize oneself with campus resources and meet colleagues early on in the

program.

Student Clubs and Organizations (All Campuses)
There are more than 125 recognized student clubs and organizations at the University that provide the campus communities with many options for activities and programming. Contact resources for student organizations are the Center for Campus Life and Leadership in Boston, the Office of Campus Life in Worcester, and the Office of Student Affairs in Manchester. The University encourages and promotes participation in student organizations. Involvement in cocurricular programs and activities helps students develop leadership skills that support the achievement of personal and professional goals. MCPHS recognizes, appreciates, and supports the contributions made by student organizations to enhance the quality of student life at the University.

UNIVERSITY POLICIES

Student Code of Conduct and Community Standards System

PREFACE

Massachusetts College of Pharmacy and Health Sciences (MCPHS or University) expects its students to act in a mature and responsible manner. The MCPHS Community Standards System prioritizes acceptance, integrity, equity, and scholarly work, and its primary goal is to support the educational mission of the University by ensuring an orderly University environment conducive to learning and teaching. It is an educational tool with the purposes of holding students accountable for Code of Conduct violations, educating students regarding their behaviors in the MCPHS community, and guiding students towards a greater sense of personal responsibility.

A. MCPHS recognizes that students are entitled to respect and consideration. MCPHS further recognizes students' rights within the institution to freedom of inquiry and to responsibly use University services and facilities.

B. Students at MCPHS have a responsibility to act in a manner that promotes the wellbeing, respect, safety, inclusion, and security of all members of the University community.

C. It is the responsibility of MCPHS students to know and understand individual department policies as well as University policies that apply to them, as published in the Student Handbook, as updated throughout the academic year, or as otherwise provided or made available to them.

D. The Student Code of Conduct is applicable to any student accepted into or enrolled in any MCPHS academic program, regardless of the number of credits carried or whether the program is in-person or online, and also applies to any recognized student organization approved through the Office of Campus Life.

E. The Student Code of Conduct applies to student conduct that occurs on the MCPHS campus, in any MCPHS-leased spaces, in relation to any University-offered academic program, or at any University-sponsored event regardless of location. The Student Code of Conduct applies to student conduct at off-campus locations when the security, integrity, or reputation of the University may be impacted by the student's behavior. The Dean of Students or their designee will determine, in their sole discretion and on a case-by-case basis, when the Student Code of Conduct is applied to off-campus student behavior. Students are expected to comply with the Student Code of Conduct from the time of admission through graduation.

F. Students who allegedly engage in conduct that may be a violation of the Student Code of Conduct or other University policies or procedures will become subject to disciplinary review and action through the Community Standards System.

G. Conduct that constitutes a violation of the Student Code of Conduct or other University policies may also constitute a violation of federal, state, or local law. University disciplinary procedures may be carried out prior to, simultaneously with, or following civil or criminal proceedings off-campus at the sole discretion of the Dean of Students or their designee. University disciplinary proceedings will not be subject to challenge on the ground that civil or criminal charges involving the same incident have been dismissed, reduced, or are pending.

H. The Student Code of Conduct and Community Standards System are published in the Student Handbook, and students are on notice of prohibited conduct. The Student Code of Conduct should be read broadly and is not designed to exhaustively describe misconduct.

I. The Student Code of Conduct and Community Standards System are not to be regarded as contracts between students and MCPHS. MCPHS reserves the right to amend any provision of the Student Code of Conduct and Community Standards System at any time. MCPHS will publish amendments in relevant campus publications.

J. Any conduct which may have been influenced by a student's mental state or the use of alcohol or other drugs shall not in any way limit the responsibility of the student for their actions.

K. In accordance with applicable law, a "disciplinary hold" may be placed on a student's academic record at the University prior to a disciplinary hearing. Students with a disciplinary hold may not be permitted to register for classes, request transcripts, receive a diploma, add or drop courses, or participate in other University activities without permission from the Dean of Students or their designee. When a student withdraws, takes a leave of absence, or becomes inactive from

the University after engaging in conduct that may violate any of the University's policies, rules, regulations, or standards of conduct, but before the alleged violation has been adjudicated through the conduct process, a hold will be placed on the student's record. The hold will prevent a student from re-enrolling at the University until the alleged violations have been resolved.

L. A business day is defined as a day when MCPHS administrative offices are open.

M. The term ''complainant'' means any person who submits a complaint alleging that a student violated this Code of Conduct.

N. The term ''respondent'' means any person who allegedly has engaged in conduct that violates the Student Code of Conduct or any other MCPHS policies.

O. The term "hearing officer" means a University employee acting as a neutral factfinder who is authorized to determine the appropriate resolution of an alleged violation of the Student Code of Conduct and/or to impose sanctions or affect other remedies as appropriate.

P. The standard of proof used in the Community Standards System is the preponderance of the evidence, which is defined as the totality of the evidence offered in support of a fact is greater or more convincing than the evidence which is offered in opposition to it; in other words, the evidence (which consists of the full totality of the circumstances) must establish that it was more likely than not that the student committed the alleged violation. Preponderance of the evidence is understood to require more than 50% certainty to determine responsibility for a policy violation (51% or greater).

Q. Every student enters the University with a discipline status "in good standing." However, if a student is involved in the Community Standards System and issued a sanction as set forth in Sections 4(g), (h), (i), (j), (k), (m), (p), or (q) of the Sanctions section this document the student forfeits their good standing status during the term of the probation, suspension, or removal. A student who is not in good standing may not be eligible for certain University leadership roles, employment, or other University programs, including study abroad and retreat programs. Whether a student will be eligible for such roles, employment, or programs is determined on a case-by-case basis by the University in its sole discretion.

ACADEMIC HONESTY POLICY

Academic Honesty

The University expects that students will assume personal responsibility for and maintain personal integrity in all aspects of their education. Responsibility for academic integrity is expected of all students whether they are participating in-person and/or through a remote learning environment. Dishonest actions in the execution of an examination, report, academic assignment, and/or academic coursework requirement, including clinical rotations, constitute violations of the MCPHS Academic Honesty Policy. Such violations are subject to specific academic sanctions, as well as to disciplinary sanctions (i.e., disciplinary warning, probation, deferred suspension, suspension, and/or expulsion).

Academic Honesty and Student Discipline Procedures

1.0 Academic violations or offenses include the following:

1.01 Receiving assistance, or attempting to receive assistance, not authorized by an instructor in the preparation of any assignment, laboratory exercise, report, or examination submitted as a requirement for an academic course or rotation. Unauthorized assistance includes the use of artificial intelligence resources for such coursework not approved by the course instructor.

1.02 Knowingly giving unauthorized assistance, or attempting to give unauthorized assistance, to another student in the preparation of any assignment, laboratory exercise, report, or examination submitted as a requirement for an academic course or rotation.

1.03 Plagiarism, or submitting another person's work (including words, images, and ideas) as one's own without the proper acknowledgment of source, or use of the words or ideas of another without crediting the source of those words or ideas. Plagiarism also includes submitting the same work for assignments in more than one class (copying from oneself) without prior permission from the instructor and/or appropriate citation, whether in the same semester or subsequent semesters.

1.04 Engaging or attempting to engage another person (student or non-student) to take one's own examination or taking or offering to take another students' exam.

1.05 Selling, giving, lending, or otherwise furnishing any material that can be shown to contain the questions or answers to any examination scheduled to be given at any subsequent date in any course of study offered by the University.

1.06 Taking or attempting to take, steal, or otherwise procure in any unauthorized manner any material pertaining to the conduct of a class, including examinations.

1.07 Falsifying or presenting fictional patient information as real to fulfill requirements for work assigned by individual faculty members or clinical preceptors.

1.08 Signing in another student or requesting to be signed in by another student on a course attendance sheet or falsely recording another student's attendance (as with the use of a "clicker"). Signing in to an assessment for another student or providing your username and password to another individual for the purpose of signing you in to an assessment is also prohibited.

1.09 Altering or attempting to alter grades or content on any assignment, laboratory exercise, report, exam, or previously completed examination as a requirement for an academic course or rotation.

1.10 Violating the Website Posting Policy Regarding Faculty Course Lectures and other Course Materials set forth in the MCPHS Student Handbook.

Implementation of the Academic Honesty Policy

1. The Dean of Students or their designee will review the Academic Honesty Policy, issues of dishonesty, and consequences of violating the Academic Honesty Policy with new students during their orientation.
2. The Academic Honesty Policy will be provided by the Office of Student Affairs to all members of the MCPHS community online through the MCPHS Student Handbook. All entering MCPHS students are expected to acknowledge they have read the Academic Honesty Policy via an online process coordinated by the Office of Student Affairs. Refusal to do so may result in more severe sanctions should a student be found responsible for an academic honesty violation.
3. In specific testing and/or evaluation situations, students may be required to present their MCPHS ID cards to verify identity, including in situations where remote proctoring tools are used.
4. Each instructor is responsible for informing students of the standards of behavior expected of students in the classroom, laboratory, and clinical sites and for consistently enforcing such standards.
5. Faculty may in their discretion require that students sign an academic honesty statement for exams and written graded assignments. This statement may be defined by each School or Program for specific requirements for in-person or remote assessment methods. The statement will read as follows:

   Academic Honesty Statement

   I pledge that I have neither given nor received unauthorized aid, and will not give or receive unauthorized aid, on any examination, paper, and/or assignment.

   Student Name (printed)_____

   Student Signature:_____ ID Number:_____

Plagiarism Prevention Service

Students are expected to abide by the University's Academic Honesty Policy. Plagiarism (see Offense 1.03 above) is considered a violation of this policy. In order to deter plagiarism and ensure the appropriate use of resources in student research and learning, the University subscribes to a plagiarism prevention service. Faculty may in their discretion require students to submit their written work electronically through this plagiarism prevention service in order to verify that when ideas of others are used, they are cited appropriately. Each course syllabus will identify student work that must be submitted electronically for such review.

Academic Honesty and Exams

The Academic Deans and Program Directors are responsible for the proper conduct of examinations in their respective schools and programs, and they will assign faculty and graduate assistants to serve as proctors for examinations. Support staff, under the supervision of the Academic Deans and Program Directors, are responsible for maintaining confidentiality in the production and reproduction of examinations.

Instructors are expected to assist in the promotion of academic honesty through the following practices:

- Access to and use of “recycled” exams should be limited.
- Students will be required to leave all unnecessary materials (e.g., backpacks, notebooks, textbooks, calculators, PDAs, cell phones, etc.) away from their seat assignment. Only required or approved materials will be allowed at the seat assignment. This requirement also applies to remote exams as implemented by the respective school or program.
- All exams, whether in person or virtually, will be proctored unless otherwise specified.
- In specific evaluation situations, students may be asked to show instructors or proctors materials being used during the exam (PDAs, cell phones, etc.) to ensure proper use of the allowed material and adherence to the Academic Honesty Policy.

Instructors are encouraged to utilize the following exam seating practices whenever possible:

- Students entering an exam room will be randomly seated.
- Seating assignments will be spaced throughout the exam room, allowing for adequate spaces between students.
- Additional requirements for integrity during remote exams will be specified by remote proctoring software and/or by the School, Program, and course instructor.

The instructor should follow the Academic Honesty Policy when giving examinations and ensure that proctors are present at all examinations in compliance with the policy. At least one (1) course coordinator for each course should be present during an examination to answer questions or to clarify issues that may arise. Exceptions to this rule must be approved by the respective Academic Dean or Program Director.

Students are expected to report violations of the Academic Honesty Policy to the instructor and/or the department/division chair or program director of the academic department for further investigation.

Additional policies for academic honesty and integrity in a remote learning environment may be further required by each School or Program.

Student Discipline Procedures for Academic Honesty Policy Violations

The University maintains a policy of open communication among all members of the University community. Hence, the first step in attempting to resolve a student’s alleged violation of the Academic Honesty Policy may be a meeting between the faculty member and the student. If the faculty member elects, in their discretion, to hold a meeting, they shall schedule it within seven (7) business days of the faculty member’s knowledge of the alleged academic dishonesty incident.

A student is not required to participate in the faculty meeting. However, if a student does not agree to participate, and therefore cannot provide a response to the faculty member’s evidence of alleged academic honesty policy violations, the faculty member may render a determination that academic dishonesty did occur and issue an appropriate sanction. The student then has the opportunity to appeal the case and the sanction as set forth below.

At the meeting, the faculty member will give the student a copy of the Academic Honesty Policy and Student Discipline Procedures and offer the Office of Student Affairs as a resource to discuss student rights and responsibilities.

The faculty member will provide the student with the information the faculty member has regarding the alleged incident and will provide the accused student the opportunity to respond to the presented information.

After listening to the student’s response, the faculty member will do one of the following:

Determine academic dishonesty did not occur and not pursue the incident further.

OR

Determine academic dishonesty did occur and discuss with the student the academic sanction the faculty member will assign (repeat of the assignment, grade reduction, failure of the assignment or exam, failure of the course). If consequences regarding academic dishonesty are listed in the course syllabus, the faculty member must adhere to the consequences as indicated in the syllabus.

The faculty member will provide the student with the option to meet with a staff member in the Office of Student Affairs to review the student’s rights and responsibilities prior to the faculty member finalizing their decision.

If the student accepts the faculty-assigned consequence, the case is closed unless the student has a prior violation of the Academic Honesty Policy or the violation is so severe that a hearing is deemed necessary by the Office of Student Affairs. *There is no option for appeal in a closed case.*

If the faculty member and the student do not agree on the determination of the case, the student can appeal the case to the academic school dean or program director (or their designee), within five (5) business days of the initial determination. The academic dean or program director (or their designee) shall meet with the involved parties either individually or jointly, to review the case within seven (7) business days of the receipt of appeal. Subsequent to the meeting and case review, the academic dean or program director (or their designee) may do one of the following:

Determine academic dishonesty did not occur and not pursue the incident further.

OR

Determine academic dishonesty did occur and discuss the academic sanction they will assign (repeat of the assignment, grade reduction, failure of the assignment or exam, or failure of the course). If consequences regarding academic dishonesty are listed in the course syllabus, the academic sanctions must adhere to the consequences as indicated in the syllabus.

The decision of the academic dean or program director will be provided to the student within five (5) business days following the final meeting. These appellate decisions are final.

Faculty and academic deans/program directors (or their designees) report, consult, and work collaboratively with the Office of Student Affairs regarding each alleged academic dishonesty incident. Students should be advised that, regardless of the academic resolution, all violations of the Academic Honesty Policy will be reported to and recorded with the Office of Student Affairs. When a student has accepted responsibility for the Academic Honest Policy violation after discussion with the course faculty member or academic dean or program director (or their designee), the Dean of Students (or their designee) will send a letter to the student, faculty member, and academic dean or program director, with a copy to the Office of Student Affairs, outlining the academic sanction agreed upon among the involved parties (e.g., loss of points, change of grade, failure of exam, etc.), along with a notification of a student conduct sanction, the minimum being a disciplinary warning, to be determined by the Dean of Students or their designee in their sole discretion. Should the Dean of Students (or their designee) determine that further action is required, based upon the disciplinary history of the student or the severity of the violation, then the matter will be processed as outlined in the Community Standards System in a hearing, as appropriate.

Complex incidents of alleged academic dishonesty that require extensive fact finding or involve a conflict of interest (e.g., the academic dean is the instructor for the course in which academic dishonesty is alleged) may be referred by the faculty member or academic dean or program director (or their designee) immediately to the Office of Student Affairs for review and disciplinary procedures as provided in the Community Standards System.

NOTE: A student may continue attending class during the resolution process for an academic dishonesty incident. If a final decision is made that a student has failed a course due to academic dishonesty, and no option for further appeal exists, the student must immediately cease attending the class in which the academic dishonesty incident occurred.

Sanctions for Academic Dishonesty

In determining a sanction, the University may consider the responsible student's past disciplinary history, the nature and severity of the offense, the severity of any resulting damage, injury, or harm, the student's cooperation throughout the process and acceptance of responsibility, and other relevant factors. Students whose behavior is contrary to the Code of Conduct are subject to the maximum sanction of dismissal from the University or any lesser sanction for any act of misconduct. Academic dishonesty sanctions include, but are not limited to, the following:

- The faculty member and the academic dean or program director (or their designee) may impose the sanction of repeating an assignment, receiving a score of zero on the exam/assignment where academic dishonesty occurred, receiving a lowered assignment/exam/course grade, or failing the course.
- The Dean of Students (or their designee) may assign the sanction of a disciplinary warning, disciplinary probation, deferred suspension, suspension, or expulsion from the University in accordance with the Academic Honesty Policy and the Community Standards System.
- The Dean of Students (or their designee) may also assign educational sanction(s) related to academic honesty, including referral to the writing center or follow up meetings. The Dean of Students (or their designee) shall communicate their decisions regarding violations of the Academic Honesty Policy, academic sanctions, and disciplinary sanctions to the student in writing once a case has been closed.

Students are subject to academic sanctions from faculty at other members of the Colleges of the Fenway (COF) should they commit academic violations while taking a COF course, and such cases are referred to the Office of Student Affairs. Such offenses will also be addressed under the MCPHS Academic Honesty Policy and Community Standards System.

STUDENT CODE OF CONDUCT VIOLATIONS

The following conduct shall constitute violations of the Student Code of Conduct:

2.0 *Personal Conduct*

2.01 Obstruction or disruption of teaching, administration, the disciplinary system, or other University activities.

2.02 Conduct, regardless of where it occurs, that is in violation of federal, state, and/or local law or University policies that brings into question one's suitability as a member of the University community.

2.03 Theft, attempted theft, wrongful utilization of goods or services, possession of stolen property, or unauthorized possession of University property or property of any member of the University community or outside individual/agency.

2.04 Damaging, destroying, or defacing, or attempting to damage, destroy, or deface University property, property related to activities of the University, property of any member of the University community, or property of outside individual/agency, including but not limited to affiliated clinical training sites.

2.05 Acting in violation of the MCPHS Protection from Discrimination and Harassment Policy.

2.06 Acting in violation of the MCPHS Protection from Sexual Harassment (Title IX) Policy.

2.07 Acting in violation of the Standards related to non-Title IX Sexual Misconduct

2.08 Conduct which is lewd, indecent, obscene, or patently offensive to an individual, the community, or in an academic or clinical practice setting.

2.09 Behavior which is disruptive or which unnecessarily infringes upon the academic and/or clinical pursuits of fellow students, faculty, proctors, or clinical preceptors, or infringing upon the privacy, rights, or privileges of other persons. Such conduct includes, but is not limited to, unwelcome physical contact, disorderly conduct which is unreasonable for the location, time, or manner in which it occurs, and/or conduct that creates a hazardous or offensive condition that serves no legitimate purpose.

2.10 Conveying confidential patient information outside the confidential space of the preceptor's practice setting without authorization by an individual faculty member or clinical preceptor.

2.11 Failure to abide by the MCPHS Solicitation Policy.

2.12 Failure to abide by the MCPHS Posting Policy, including unauthorized posting and/or distribution of flyers, bulletins, or posters (improperly posted and/or posted without approval).

2.13 Failure to abide by the MCPHS Gambling Policy.

2.14 Failure to abide by the MCPHS Good Neighbor Policy.

2.15 Failure to abide by the MCPHS Electronic Communications Policy and/or the MCPHS Email Policy.

2.16 Failure to adhere to University Guest policies.

2.17 Failure to register an event or to abide by an event plan as documented in an MCPHS Event Registration Form.

2.18 Failure to abide by the MCPHS End of the Semester Event Policy.

2.19 Failure to abide by the MCPHS Parking Policy.

2.20 Failure to follow University policies and/or guidelines with respect to health and safety.

2.21 Retaliation by any student against any individual who reports a perceived violation of the Student Code of Conduct, any other MCPHS policy, or any federal, state, or local law by that student.

2.22 Making, attempting to make, sharing, or distributing an audio or visual recording of any person(s) without the knowledge and consent of all participants subject to such recordings, in locations where there is a reasonable expectation of privacy, or when the action is likely to cause injury, distress, or damage to one's reputation.

3.0 *Physical Safety and Environmental Health*

3.01 Physical assault or abuse of another person.

3.02 Verbal abuse, threats, intimidation, harassment, or coercion, including, but not limited to, any conduct that threatens or endangers the emotional or physical health or safety of another person, including oneself.

3.03 Possession, storage, or discharge of any weapons, including firearms, knives, or other weapons of any nature or description as outlined in Massachusetts General Laws, Chapter 269, Section 10 (i.e., bows, arrows, slingshots, airguns, martial arts devices, etc.); explosives, including but not limited to fireworks; or other dangerous items or substances.

3.04 Creating a fire hazard, bomb or other explosive device, or a dangerous situation which endangers others, including but not limited to making false reports of fire or bombs, failing to evacuate, and tampering with, damaging, or removing fire safety equipment.

3.05 Failure to abide by the MCPHS Hazing Policy.

3.06 Trespassing or other unauthorized entry into any University building, structure, or facility related to University activities, or any attempt to do the same.

3.07 Using, making, or causing to be made any key or keys for any building, laboratory facility, or room of the University, or room on premises related to University activities unless authorized by an administrator in charge, or any attempt to do the same.

3.08 Failure to abide by the MCPHS Smoking Policy.

3.09 Engaging in sports or sporting activities in locations where such activity is not permitted.

4.0 *Personal Identification and Representation*

4.01 Falsification of one's identity or that of another.

4.02 Failure to abide by the MCPHS Identification Policy, including but not limited to failure to wear and/or show student identification and/or failure to verbally state one's identity upon request to a properly identified official or member of the MCPHS staff (including RAs, Food Service, Bookstore, and Security staff).

4.03 Misuse of student identification, including allowing others to use one's student identification and/or utilizing another student's identification.

4.04 Misrepresenting oneself or another as a University official or representative of a campus organization.

4.05 Altering, transferring, forging, tampering with, or falsifying any University or affiliated clinical practice site record or document or knowingly submitting false information for incorporation into such records.

4.06 Failure to comply with a disciplinary action or cooperate, meet with, or respond to a reasonable request of a University official (including student employees while performing the duties of their job).

4.07 Lying or falsification within the process of the Student Discipline System, including but not limited to filing a false complaint.

4.08 Conduct that disrupts an investigation, meeting, or hearing within the Student Discipline System.

4.09 Attempting to discourage participation in or use of the reporting, investigation, and/or disciplinary processes.

4.10 Unauthorized use of the University name.

5.0 *Residence Life Policies*

5.01 Possession of prohibited items in the residence halls as set forth in the MCPHS Residence Hall Agreement/Contract.

5.02 Failure to maintain community health and living standards as set forth in the MCPHS Residence Hall Agreement/Contract.

5.03 Failure to abide by the University policy prohibiting pets in the residence halls.

5.04 Failure to adhere to the MCPHS Residential Guest Policy.

5.05 Failure to abide by Residence Hall "Courtesy Hours" or "Quiet Hours" policies.

5.06 Failure to abide by the Letting for Value Policy outlined in the MCPHS Residence Hall Agreement/Contract.

5.07 Failure to abide by the terms of the applicable MCPHS Residence Hall Agreement/Contract.

6.0 *Alcohol and Drug Use Policies*

6.01 Being in the presence of alcohol in any University-owned or leased residence hall in Boston, regardless of age, and/or being in the presence of alcohol at a University function where alcohol has not been authorized.

6.02 Use or possession of alcohol while under the age of 21 and/or use or possession of alcohol while in a University-owned or leased residence hall in Boston, regardless of age, and/or being in the presence of alcohol at a University function where alcohol has not been authorized.

6.03 Distribution of alcohol to minors.

6.04 Being in the presence of illegal drugs, marijuana, and/or synthetic marijuana.

6.05 Use and/or possession of illegal drugs, marijuana, and/or synthetic marijuana.

6.06 Manufacturing and/or distribution of illegal drugs, marijuana, and/or synthetic marijuana.

6.07 Being under the influence of illegal drugs, marijuana, and/or synthetic marijuana, or medications prescribed to another.

6.08 Possession of alcohol paraphernalia in any University-owned or leased residence hall in Boston, regardless of the student's age.

6.09 Possession of drug paraphernalia.

6.10 Sale, distribution, and/or transfer of one's own prescribed medication to another or the possession, use, sale, and/or transfer of another's prescribed medication.

6.11 Public intoxication, regardless of age, of any student or guest of a student.

COMMUNITY STANDARDS SYSTEM

Matters Before the Community Standards System

Matters brought before the Community Standards System for review and possible action may take on a variety of forms; including but not limited to written complaints, oral complaints, grievances, and referrals from outside individuals/agencies (e.g., Police Department). Any member of the MCPHS Community or outside individual/agency may submit a complaint against a currently enrolled student. All parties who are involved in the Community Standards System process have the right to have a fair and impartial investigation, determination, and appeal

Possible Actions

All matters/complaints will be referred to the Dean of Students (or their designee), who may take one or more of the following steps in their sole discretion:

- Dismiss the matter/complaint
- Impose interim/supportive measures
- Initiate an investigation
- Enter into informal resolution
- Schedule an Administrative Conference
- Schedule a Level I Hearing
- Schedule a Level II Hearing

Dismiss the matter/complaint

If, after an initial review of a complaint or alleged violation of the Student Code of Conduct, the Dean of Students or their designee determines that the matter, even if substantiated, does not involve offenses in the Student Code of Conduct or the complaint is not accompanied by adequate information, then the matter or complaint will be dismissed from the Community Standards System.

Impose interim/supportive measures

The Dean of Students (or their designee) may impose immediate restrictions upon a student with pending disciplinary action without prior notice whenever there are sufficient facts to show that such student's continued presence on the campus endangers the physical safety or well-being of others or themselves or disrupts the educational process of the University.

Interim/supportive measures may include, but are not limited to: suspension from a particular class or the University; removal from campus housing; limitation of access to designated housing facilities and/or campus facilities at certain times; restriction of communication with named individuals within the University community; and/or requiring advanced authorization to engage in a specified activity. Interim/supportive measures may also include limiting a student's presence on campus for class attendance only.

The Dean of Students (or their designee) will communicate with a student who may be subject to interim/supportive measures directly (in a meeting, by telephone, or through a virtual platform) so that the student has the opportunity to be heard. The Dean (or their designee) will make a **final** interim/supportive measures decision based upon the best interests of campus and/or student health and safety and/or educational disruption concerns.

Violations of interim/supportive measures may result in suspension or dismissal from MCPHS.

Initiate an Investigation

The complaint or incident report will be reviewed to determine if it should proceed through the Community Standards process. The party named in the complaint will be notified. Information in addition to that provided in the complaint or incident report may be sought through an investigation. The investigation may include, but will not be limited to:

- interviewing the complainant(s), responding party(ies), and witness(es);
- gathering documentary or other information from the party(ies) and witness(es); and
- gathering relevant documents and/or other information which may be available to the University.

The information gathered during the investigation will be provided to the hearing officer(s).

Alleged violations of the Protection from Discrimination and Harassment Policy will be investigated in accordance with that policy and referred to the Dean of Students (or their designee) for informal resolution, administrative conference, and/or a hearing under this process, as outlined below.

Informal Resolution

In some cases where a complaint is related to an interpersonal conflict, the Dean of Students or their designee may determine that it is appropriate to resolve the matter via informal resolution. An informal process can include, but is not limited to, conflict coaching, educational conversations, facilitating a dialogue, mediation, restorative practices, or shuttle diplomacy.

Schedule an Administrative Conference

Students who accept responsibility for offenses they committed may first be referred to an Administrative Conference. An Administrative Conference is a discussion between the responsible student and the Dean of Students (or their designee) in which the student affirms their responsibility for the charged offenses and the Dean of Students (or their designee) assign sanctions for the offenses. If the student accepts the assigned sanctions, they must sign an Administrative Conference Document indicating acceptance of responsibility for the charged offenses and acceptance of the sanctions as assigned and detailed in the Document. By accepting responsibility and the assigned sanctions, the student waives their right to appeal, and the Administrative Conference Document is the final decision regarding the case. If, during or after the Administrative Conference, the student no longer accepts responsibility for the offense(s) as charged or does not agree to the sanctions as assigned by the Dean of Students (or their designee), the case will be assigned to either a Level I or Level II Hearing, depending on the nature of the charges.

Schedule a Level I Hearing

Incidents or complaints referred to a Level I Hearing do not involve suspension or expulsion as possible sanctions. For more detailed information regarding hearing sanctions, please go to the Sanctions section below.

Schedule a Level II Hearing

Incidents or complaints referred to a Level II Hearing involve the possible sanctions of suspension or expulsion in addition to the possible sanctions for a Level I Hearing. For more detailed information regarding hearing sanctions, please go to the Sanctions section below.

Level I Disciplinary Hearings

1. The Level I disciplinary hearing is an informal meeting chaired by a hearing officer, who is a trained Student Affairs staff member. It is an opportunity for a student to provide relevant case information to the hearing officer. The objective is to discuss the charges and to assess a student's responsibility for allegedly violating the Student Code of Conduct and to determine sanctions for responsibility as appropriate.
2. Level I Hearings will be conducted as soon as possible after an incident or complaint has been reported. Delays in the scheduling of Level I hearings may occur for the following reasons:
    a. The hearing officer and respondent agree to meet later.
    b. A later hearing date is necessitated by a large number of students involved in a case.
    c. There is an ongoing related investigation regarding the case, or new information is provided that necessitates further inquiry.
    d. The respondent may request one postponement of the Level I hearing to be granted at the discretion of the hearing officer.
3. When multiple parties are involved in the same incident, the Dean of Students, or their designee, will decide whether the cases will be heard together or separately.
4. Level I Hearings are closed to the public and confidential in nature. All information reviewed for the hearing and presented at the hearing is confidential and may not be disseminated by a party or witness.
5. Any person, including the respondent, who disrupts a Level I Hearing or who fails to adhere to the rulings of the hearing officer may be excluded from the Level I Hearing.
6. The decision of the Level I Hearing officer will be made on the basis of whether it is more likely than not the respondent violated the Student Code of Conduct based on the evidence gathered during the investigation and the hearing.
7. Level I Hearings may be recessed at any time provided all parties are notified of the reason for the recess.
8. Any new information brought forth in a Level I Hearing that allegedly violates the Code of Conduct may result in additional charges imposed on any involved student.
9. Failure to appear for the Level I Hearing will result in the hearing being conducted in the respondent's absence. If the respondent does not appear for the Level I Hearing, they lose the right to appeal.

Rights of All Parties in Level I Disciplinary Hearings

1. The respondent will be entitled to:
    a. Written notice of charges, the name of the person(s) filing the complaint, and the time and place of the Level I Hearing.
    b. The opportunity to present their case.
    c. Provide the names of witnesses. The names of witnesses must be submitted to the hearing officer two (2) business days prior to the hearing. Character witnesses are not permitted to attend hearings but may submit written statements to assist the hearing officer with determining sanctions, if necessary.
    d. Not answer any questions or make any statements during a Level I Hearing. Such silence will not be used against the charged student; however, the outcome of the Level I Hearing will be based on the information (or lack thereof) presented during the Level I Hearing.
    e. Request a hearing advisor who is a member of the MCPHS community. (See the Hearing Advisor section below).
    f. The opportunity to appeal the decision within five (5) business days from when they are notified of the decision (see the Appeals section below).

Level II Disciplinary Hearings

1. Level II Hearings are formal hearings to assess a student's responsibility for allegedly violating the Student Code of Conduct and to assess sanctions for responsibility as appropriate. Incidents or complaints referred to a Level II Hearing involve the possible sanctions of suspension or expulsion in addition to the possible sanctions for a Level I Hearing.
2. In Level II Hearings, two trained University staff or faculty members will serve as the Hearing Officers. The Level II hearing will be chaired by a different Student Affairs staff member who will administer the hearing.
3. Level II Hearings will be conducted as soon as possible after an incident or complaint has been reported. Delays in the scheduling of Level II Hearings may occur for the following reasons:
    a. The hearing officers and respondent agree to meet later.
    b. A later hearing date is necessitated by a large number of students involved in a case.
    c. There is an ongoing related investigation regarding the case, or new information is provided that necessitates further inquiry.
    d. The respondent may request one postponement of the Level II Hearing to be granted at the discretion of the hearing officer.
4. When multiple parties are involved in the same incident, the Dean of Students, or their designee, will decide whether the cases will be heard together or separately.
5. Level II Hearings are closed to the public and confidential in nature. All information reviewed for the hearing and presented at the hearing is confidential and may not be disseminated by a party or witness.
6. Only evidence introduced at the Level II Hearing will be considered in determining a respondent's responsibility.
7. The Level II Hearing officers will make their decision on the basis of whether it is more likely than not that the respondent violated the Student Code of Conduct based on the evidence gathered during the investigation and the hearing.
8. Any person, including the respondent, who disrupts a Level II Hearing or who fails to adhere to the rulings of the hearing officer may be excluded from the Level II Hearing.
9. Level II Hearings may be recessed at any time provided all parties are notified of the reason for the recess. Both the respondent and the complainant must receive written notice of the date and time the hearing will be reconvened.
10. Any new information brought forth in a Level II Hearing which allegedly violates the Code of Conduct may result in additional charges imposed on any involved student.
11. Failure to appear for the Level II Hearing will result in the hearing being conducted in the respondent's absence. If the respondent does not appear for the Level II Hearing, they lose the right to appeal.

Rights of All Parties in Level II Disciplinary Hearings

1. The respondent will be entitled to:
    a. Written notice of charges, the name of the person(s) filing the complaint (where available and permitted by law and University policy), the opportunity to review a copy of the complaint (if available), the time and place of the Level II Hearing, and the names of all witnesses who will testify.
    b. The opportunity to present their case, ask relevant questions of the complainant and witnesses (if available) through the hearing officers, and present witnesses on their behalf.
    c. The respondent will not be permitted to question the other party or the witnesses directly. All questions will be asked by the hearing officer.
    d. The opportunity to review the information being presented at the hearing two (2) business days prior to the hearing.
    e. Not answer any questions or make any statements during a Level II Hearing. Such silence will not be used against the respondent; however, the outcome of the Level II Hearing will be based on the information (or lack thereof) presented during the hearing.
    f. Request a hearing advisor to provide support during the hearing process (see the Hearing Advisor section below).
    g. The opportunity to appeal the decision within five (5) business days from when they are notified of the decision (see the Appeals section below).
    h. The respondent may provide the names of witnesses. The names of witnesses must be submitted to the hearing officer two (2) business days prior to the hearing. Character witnesses are not permitted to attend hearings but may submit written statements to assist the hearing officers with determining sanctions, if necessary.

2. The complainant(s) may be entitled to:
    a. Submit an impact statement to explain the emotional, physical, financial, educational, and/or other impact(s) the incident has had on their life.

Complainants who allege incidents of violence (including, but not limited to, assault, battery, sexual assault, domestic violence, dating violence, and stalking) will be entitled to:

a. Notice of the time and place of the Level II Hearing and the opportunity to answer questions related to the complaint.
b. The complainant(s) and respondent(s) will have the opportunity to be present (either in person or virtually) throughout the hearing, including when the Hearing Officer(s) questions the other party or witnesses. If the parties are not comfortable being in the same room together, appropriate arrangements will be made.
c. Submit an impact statement to explain the emotional, physical, financial, educational and/or other impact(s) the incident has had on their life. This statement may be read into the disciplinary hearing record by the complainant or their hearing advisor.
d. Request a hearing advisor to provide support during the hearing process (see the Hearing Advisor section below).
e. The opportunity to review the information being presented at the hearing two (2) business prior to the hearing.
f. Notice of the decision and the sanctions imposed related to their complaint.
g. Opportunity to appeal the decision five (5) days from when they are notified of the decision (see the Appeals section below).
h. See the Procedures related to Non-Title IX Sexual Misconduct section for any additional provisions for cases of alleged sexual assault, sexual harassment, domestic violence, dating violence, and stalking.

Sanctions

1. In determining a sanction, the responsible student's past disciplinary history/prior violations, the nature and severity of the offense, the severity of any resulting damage, injury, or harm, the student's cooperation throughout the process and acceptance of responsibility, and other factors may be considered.
2. Failure to fulfill sanctions may result in an administrative hold on the student's account.
3. In the event a student with a sanction imposed upon them becomes inactive or no longer a registered student, upon any re-admission to the University, any sanctions will be reinstated and served in their entirety.
4. The hearing officer may impose any one or more of the following sanctions:
    a. Disciplinary Warning. An official written notice that the behavior was inappropriate. This notice is considered part of a student's disciplinary record and will be considered in the determination of any future disciplinary action.
    b. Fine. A fine imposed for alcohol and/or other drug violations, for failure to attend mandatory meetings, or for other offenses. The fines for alcohol or any other drug violations will be used towards alcohol and/or other drug education and alternative programming.
    c. Restitution. Compensation to the University for loss, damage, or injury. This may take the form of monetary or material replacement.
    d. University/Educational Community Service. Assignment of an appropriate project or attendance at an educational workshop that will benefit the University community, the responsible student, or others.
    e. Referral. A student may be referred to Counseling Services, CASE, Health Services or other appropriate offices or local agencies (e.g., law enforcement agencies, licensure boards) when deemed appropriate by the Dean of Students (or their designee).
    f. Restriction. Denial of access to any campus facility, activity, class, or program, or denial of student privileges.
    g. Disciplinary Probation. A period of time during which the student or student organization is given the opportunity to modify their behavior and demonstrate a positive contribution to the University community. Any violation of University policy during the probation period will be deemed to be a violation of disciplinary probation and will result in further disciplinary action.
    h. Housing Probation. A period of time during which the student will be subject to removal from the residence halls if the student is found responsible for any additional violations of the Student Code of Conduct. A student's disciplinary standing may also affect their current housing status and ability to enter the Returning Student Housing selection process.

i. University Probation. University probation is a higher level probationary status and is a period of time where the student or student organization is given the opportunity to modify their behavior and demonstrate a positive contribution to the University community in an effort regain privileges within the University community. University probation differs from disciplinary probation in that students on University probation are prohibited from holding any student leadership position or elected or appointed office in any recognized student organization. Any violation of University policy during the University probation period will be a deemed to be violation of University probation and will result in further disciplinary action.

j. Housing Relocation. Termination of a student's residence hall assignment and assignment to a new housing assignment in a new residence hall.

k. Deferred Loss of Residence. A delayed removal from University-operated residence halls for a designated period of time. Any proven offense during this period may result in immediate loss of residence.

l. Loss of Residence. Removal from the University's residence halls.

m. Deferred Suspension. A delayed removal from a class or the University. Any proven violation during this period may result in immediate suspension for a specific period of time.

n. Deferred Loss of Recognition. A delayed removal of recognition as a recognized student organization. Any proven violation during this period may result in the immediate loss of recognition for a specified period of time.

o. Loss of Recognition. During this time, a recognized student organization may not associate itself with the University by using the University name, facilities, funds, and/or other rights and privileges of recognized student organizations. The expiration of the loss of recognition period does not guarantee that the organization will be recognized again by the University.

p. Suspension.* Removal from a class or the University for a specified period of time. Suspended students must remove themselves completely from the University. Students suspended from the University may not attend classes or participate in University-sponsored programs during their suspensions. The expiration of the suspension period is not a guarantee that the student will be permitted to again attend the University.

q. Expulsion.* Permanent removal from the University.

r. Other sanctions. Other sanctions may be imposed, as determined to be warranted and appropriate by the University in its sole discretion, instead of or in addition to those specified above.

**These sanctions may be imposed only as a result of an Administrative Conference or a Level II Hearing.*

Prescribed Sanctions

Sanctions for Violations of the Alcohol and Drug Policies

The following sanctions for violations of the Alcohol and Drug Policies have been developed to educate students and ensure an environment that supports the academic mission of the University. Students who are found responsible for violating either the alcohol or drug policies more than once or multiple times within one incident may be subject to higher level sanctions, as determined to be appropriate by the University in its sole discretion. The sanctions may include, but are not limited to the following:

- Disciplinary Warning, Disciplinary Probation, Housing Probation, Deferred Removal from Housing, University Probation, Removal from Housing, Deferred Suspension, Suspension, or Expulsion
- Online education and/or assessment courses
- Educational sanctions and/or community service
- Fines/Fees of no more than $300.00
- Notice letter to the student's parents or guardians if the student is under the age of 21
- Selling or providing drugs to anyone, even on the first offense, may result in dismissal from the University.

Sanctions for Recognized Student Organizations

The University's response to recognized student organizations found in violation of the Alcohol Policy will result in any of the following minimum sanctions, to be determined by the University in its sole discretion:

Deferred Loss of Recognition

A delayed loss of recognition as a recognized student organization. Any proven violation during this period of deferred loss may result in immediate loss of recognition for a specified period of time.

Loss of Recognition

During this period of time, a recognized student organization may not associate itself with the University by using the University name, facilities, funds, and/or other rights and privileges of recognized student organizations. The expiration of the loss of recognition period does not guarantee that the organization will be recognized again by the University. A student organization desiring to gain re-recognition must submit the request for re-recognition in writing as outlined in the Student Handbook.

Educational/University Service

Recognized student organizations will be assigned an appropriate project or attendance at an alcohol education workshop.

Other Sanctions

The University may impose additional sanctions as appropriate, including notification to National Chapters of Fraternities.

Hearing Advisors

The complainant(s) and respondent(s) can have an advisor present at a hearing. A list of faculty/staff hearing advisors who have offered to serve in this role is available from the Office of Student Affairs. A party may also ask another member of the MCPHS community to serve as a hearing advisor, though no faculty or staff member is required to accept a request from a party to serve as a hearing advisor. The hearing advisor may assist the party before the hearing in preparing a statement, reviewing the process, and seeking answers to any questions that the party may have. Except where provided otherwise herein, attorneys, parents/guardians, or other non-MCPHS community members are not permitted to be hearing advisors. Hearing advisors are present for support only and are not permitted to ask or answer questions, present evidence, or make any statements during the hearing, except that the hearing advisor may read a complainant's impact statement upon the request of the complainant. The University does not warrant the competency or ability of any hearing advisor. Advisor availability is not sufficient grounds for unreasonably postponing a meeting or disciplinary proceeding.

Appeals

1. Students wishing to appeal a decision must do so in writing, via an on-line link, within five (5) business days of receiving notice of the results of the hearing.
2. All requests for an appeal are to be submitted to the Dean of Students, or their designee.
3. Appeals for all Level I Hearings will be forwarded to the appropriate appellate officer (the Dean of Students, Senior Associate Dean of Students, Associate Dean of Students, Assistant Dean of Students, or Director of Residence Life) in a hierarchical manner. Appeals for Level II Hearings will be forwarded to the appropriate appellate officer (the Vice President of Academic Affairs/Provost or their designee or the Dean of Students) in a hierarchical manner.
4. Appeals will be considered based on the following criteria:
    a. If the student can demonstrate that significant procedural errors occurred in the Code process occurred that were substantial enough to effectively and detrimentally affect the outcome.
    b. If the student can demonstrate that new and significant evidence not previously known to the appealing student has been discovered, is newly available during the appeal process, and would substantially alter the findings of fact. The new evidence could not have been discovered through the exercise of reasonable diligence, and its absence must have been so significant as to materially affect the outcome.
    c. If the student can demonstrate a clear conflict of interest, or bias, by either the investigator or a hearing officer that is sufficient to materially influence and affect the outcome of the case.
5. The appellate officer will review the information from the previous hearing.
6. The appellate officer may determine that:
    a. There are no grounds for the appeal, thus upholding the decision.
    b. The sanction is excessive, inappropriate, or inadequate. The appellate officer may then alter the sanction accordingly.
    c. Return a case to the prior level for further appropriate proceedings.
    d. Conduct another hearing and render a new decision.

7. Should an appellate officer determine that conducting a hearing is appropriate, a formal appeal hearing will be conducted in accordance with the same system as set forth for disciplinary hearings.
8. The decision of the appellate officer will be communicated in writing.
9. A party is allowed only one appeal, and the decision of the appellate officer is final.

Records

Disciplinary records are not considered to be part of a student's permanent record maintained by the University. Disciplinary records mean the printed, written, or electronic file which may include all information obtained as part of an investigation, including any determination regarding responsibility and any audio or audiovisual recording or transcript; any disciplinary sanctions and/or remedies; any appeal, including the result of the appeal, where a student was charged and found responsible for violating the Student Code of Conduct. Interim measure(s) are not part of a student's conduct record unless there is a finding of responsibility under the Student Conduct Code from when the interim measure is imposed. and any informal resolution and the result therefrom. Disciplinary records, including those resulting in a finding of "responsible" for violations of the Student Code of Conduct, are maintained by the Office of Student Affairs for seven (7) years from the date of resolution of the incident, or, if an incident is unresolved, from the date the incident was reported to the University. The University reserves the right to retain student disciplinary records for a longer period of time when the University deems necessary or appropriate. For cases resulting in a student's disciplinary separation from the University (i.e. expulsion), the records are kept indefinitely. The University may also keep records of student conduct matters that remain unresolved or pending at the time a student left or withdrew from (or otherwise ceases enrollment with) the University.

Although student disciplinary records maintained by the Office of Student Affairs are protected under the Family Educational Rights and Privacy Act of 1974, as amended ("FERPA"), certain information may be provided to individuals within or outside the University who have a legitimate legal or educational interest in obtaining it, in accordance with the requirements and limitations of FERPA. A student who is looking to review their disciplinary record must put the request in writing using the form provided by the Office of Student Affairs and submit it to the Office of Student Affairs. The Dean of Students or their designee will make arrangements for access and contact the student to set up an appointment to review their record.

MCPHS transcripts do not indicate student disciplinary actions, excluding expulsion, which shall remain on the student's educational record permanently, and suspension, which shall remain on the student's educational record during the term of the suspension. For cases where the sanction might be expulsion or suspension, the University may, in its sole discretion, make notations on a student's transcript that a disciplinary case is pending.

Documented Absence Policy

ATTENDANCE
Students pursuing a degree at Massachusetts College of Pharmacy and Health Sciences (MCPHS) are professionals in training who are expected to meet the standards of professional conduct and responsibility. No matter the field, consistent attendance and on-time arrival are the very least of what is expected of a healthcare professional. As such, MCPHS requires attendance in various components of the curriculum. Preparation, on-time arrival, and active participation in all scheduled classes, laboratories (including clinicals), learning experiences, and assessments (including quizzes and examinations) are a student's professional obligation and demonstrate respect for the educational environment. Attendance requirements are stated in each course syllabus and available to students throughout the duration of a course.

ABSENCES
When it is necessary for students to be absent from a required program or course activity, students must approach these absences with the same standard of responsibility required of a professional in their field of study. **Students absent for any reason must notify the faculty member who coordinates the course as soon as possible and refer to the course syllabus for course-specific information related to attendance**. **Students must contact their preceptor and clinical coordinator if their absence(s) will affect their clinical rotations.** Notification to clinical preceptors and clinical coordinators must comply with the expectations outlined in each department's clinical rotation syllabus and the program handbooks. In addition, if an absence meets the requirements for a Documented Absence
, the protocol described below must be followed before it will be categorized as such.

Students should refer to the following sections (below) for specific information on:

- Absences that **<u>are not</u>** covered by the Documented Absence Policy
    - Absences due to professional development activities
    - Absences due to other circumstances
- Absences that **<u>are</u>** covered by the Documented Absence Policy
    - Absences due to urgent/medical/immutable circumstances
    - Absences due to religious observance
    - Absences due to military service

Absences Due to Professional Development Activities:
Absences due to student professional development activities require approval from the Academic Dean/Program Director as follows:

- The student must consult with their Academic Dean/Program Director before planning to participate in any professional development activity (e.g., meeting/conference, residency/ fellowship/job interview, professional organization activity) that could result in an absence;
- No registration or travel arrangements should be made prior to approval for an absence being granted;
- Required documentation may include: meeting registration or meeting agenda outlining student research/participation; other documentation as appropriate;
- Each program will provide additional specific information and instructions regarding student requests for absences due to professional development activities.

Absences Due to Other Circumstances That <u>Are Not</u> Covered by the Documented Absence Policy:
For missed coursework, clinical/rotation hours, or an assessment due to the circumstances listed immediately below, students should refer to their course syllabus and/or the academic program's policy and procedure manual. Regardless of the reason for the absence, students who need to be absent from class or for an assessment should notify the appropriate faculty member(s) as soon as possible and refer to their course syllabus for additional information.

- Weather conditions/Unsafe travel conditions to campus: Students should follow the MCPHS inclement weather policy, when appropriate
- Transportation/commuter issues
- Connectivity issues for online or remote classes/activities
- Illness lasting one class day

Please note: approval for making up assessments, course/lab work or assignments, clinical/rotation hours, or any other academic work typically **will not** be granted for absences due to plane reservations/travel, poor time management, social events (e.g., weddings, parties, reunions, etc.), failure to be in compliance with protocols for pathogens of concern (e.g., COVID) or required immunizations, or work commitments.

DOCUMENTED ABSENCE POLICY

Purpose
MCPHS recognizes that there are occasions when student attendance at course activities is neither possible nor prudent. The Documented Absence policy formalizes the administrative process for requesting absences while a student is enrolled in coursework to maintain quality and integrity in the learning environment.

Policy
The Documented Absence Policy describes **absences that are covered** under the policy and the procedures for submitting a Documented Absence request. ***Please note:*** though a Documented Absence may be granted as a reasonable allowance, a Documented Absence may not exempt a student from making up academic work, nor does it guarantee that missed work/clinical hours can be replicated. The scheduling and format of make-up work is at the course instructor's discretion. Students who need to be absent from class or for an assessment for any reason should notify the appropriate faculty member(s) as soon as possible and refer to their course syllabus for additional information. Students are expected to abide by the Documented Absence Policy; students who fail to do so may be ineligible to receive a Documented Absence approval, regardless of the reason.

Absences that ARE covered under the Documented Absence Policy may include, but are not limited to:

- Bereavement Leave (e.g., death a family member*)
- Religious observance**
- Medical emergencies/issues lasting more than one day
- Immutable appointment (e.g., consulate/immigration, jury duty, specialty medical appointments)
- Accidents, the victim of a crime, or other similar events
- Military service***

REQUESTING APPROVAL FOR A DOCUMENTED ABSENCE
Students seeking an absence for circumstances covered under the Documented Absence Policy are required to complete the online Documented Absence Request Form in its entirety and attach valid documentation per the documentation guidance. More information regarding the procedure for submitting the online Documented Absence Request Form for circumstances covered under the Documented Absence Policy can be found below.

Supporting Documentation Guidance
Students are expected to provide supporting documentation when submitting an online Documented Absence Request Form. A guide of supporting documentation is provided in the table below. Photos of events or letters from parents/guardians do not constitute supporting documentation and will not be accepted. Questions about documentation can be directed to the Office of Student Affairs [Student_affairs@mcphs.edu or call 617.732.2929 (Boston), 508.373.5646 (Worcester), 603.314-1783 (Manchester)].

Event	Supporting Documentation
Bereavement Leave*	A copy of an obituary or link to the obituary; prayer card
Religious observance**	**See “Absences due to religious observance”
Medical reason for yourself or a dependent (child, elder)	Signed and dated documentation on official letterhead from a licensed healthcare provider. If the student requires recovery time, these dates should be included. Signed and dated documentation on official letterhead from a licensed healthcare provider documenting you attended with a dependent (also referred to as a companion letter).
Immutable appointment	Jury duty card, court document, etc.
Accident, victim of a crime, or other similar events	Police report, insurance claim/report, or other related documentation
Military Service***	***See “Absences due to military service”

NOTE: *Any alterations to documentation will result in a referral to the Student Code of Conduct.*

*Bereavement/Death Leave
MCPHS values the diversity of our students. Our students may have different bereavement observances, ceremonies and/or traditions and may define family members differently. We encourage MCPHS students requesting bereavement leave to complete the online Documented Absence Request Form and meet with Student Affairs regarding their request for and absence due to bereavement leave.

****Absences due to Religious Observance**
Students requesting an absence due to a religious observance are required to follow the procedure for submitting a Documented Absence request. It is strongly encouraged that students notify their course faculty and submit an Documented Absence Request Form for a religious observance within 3 days after the start of the semester. This request should be submitted using the online Documented Absence Request Form as early as possible, but not less than 3 business days before the day of the religious observance in order to ensure that the faculty member and the student can adequately determine an appropriate accommodation.

Massachusetts law (see below) and MCPHS policy require faculty and staff members to accommodate students who are absent from a class activity due to religious observance and to provide them with a reasonable opportunity to make up course work (e.g., assessments, labs, clinical activities) missed due to religious observance, if such accommodation does not create an unreasonable burden on the part of the University. To avoid misunderstanding, the faculty and the student should put the agreed-upon arrangement in writing (e.g., via email). All religious observances, within all religious traditions, are subject to this accommodation.

The following excerpt from Massachusetts General Laws Chapter 151C, Section 2B will apply to all students, regardless of campus and including online students:

> *"Any student in an educational or vocational training institution, other than a religious or denominational educational or vocational training institution, who is unable, because of their religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirement, and shall be provided with an opportunity to make up such examination, study, or work requirement which they may have missed because of such absence on any particular day; provided, however, that such make-up examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged by the institution for making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of them availing*
> *themself of the provisions of this section."*

*****Absences due to Military Service**
MCPHS recognizes the important contributions made by the U.S. Armed Forces, consisting of Active Duty, U.S. Military, Veteran, Armed Forces, U.S. Reserves, National Guard, the Reserve Officer Training Corps (ROTC), U.S. Public Health Service and military students in service to their home country. MCPHS understands that students may be called into active military service and may be required to be absent from class to fulfill military obligations.

Once the student is aware of a call to duty, they must discuss their circumstances with their faculty and Academic Dean/Program Director, and notify the Office of Student Affairs at Student_affairs@mcphs.edu or call 617.732.2929 (Boston), 508.373.5646 (Worcester), 603.314-1783 (Manchester).

Examples of Active-Duty Military Absence include, but are not limited to:
- Individual or unit calls to active duty for deployment
- Natural disaster response
- Receipt of permanent military change of station orders
- Funeral honor guard details
- Periodic training/drill obligations
- Field training exercises

Documentation for Absences Due to Military Service
Students must provide maximal advance notice of absences and provide copies of their official military documentation, such as:
- Paper or electronic orders
- Leave and earning statement
- A unit's memorandum

It is the responsibility of the student to notify their faculty, Academic Dean/Program Director, and Student Affairs as soon as possible. Student Affairs will work with the student, faculty members, Academic Dean/Program Director, and other relevant MCPHS offices to best support the student.

Please note: if a student is fulfilling military obligations for a country other than the United States, the Center for International Studies (CIS) may be notified.

Procedure for Submitting a Documented Absence Request for Circumstances Covered Under the Documented Absence Policy
Students seeking an absence for circumstances covered under the Documented Absence Policy are required to complete the online Documented Absence Request Form in its entirety and attach valid documentation. For unexpected absences, the form should be submitted as soon as possible, but no later than three (3) days following the date of absence. Failure to submit all information requested on the form (e.g., failure to list faculty member's name, course number) within the allotted timeframe could result in a denied request.

Students with absences on three (3) or more days in one semester may be required to meet with a member of Student Affairs on their respective campus and/or their Academic Dean or Program Director. Students who submit Documented Absence requests due to hospitalizations will be contacted to meet with a member of Student Affairs. Students with three (3) or more approved absences in one semester may be ineligible to receive additional Documented Absence approval, regardless of the reason.

For questions about the Documented Absence Policy, please contact the Office of Student Affairs for all campuses at Student_affairs@mcphs.edu or call 617.732.2929 (Boston), 508.373.5646 (Worcester), 603.314-1783 (Manchester).

Online Documented Absence Request Form
To complete the Documented Absence Request Form for circumstances covered under the Documented Absence Policy, please visit: https://mcphs.edu/departments/student-affairs/documented-absence. All absence requests must be submitted via the electronic Documented Absence Request Form for review. Email submissions are not accepted.

Notification from the Office of Student Affairs
The Office of Student Affairs will notify the student of the decision on their request within five (5) business days via their MCPHS student email.

In addition to notifying course faculty members as soon as possible of an absence, the student **must** contact the course faculty member, course coordinator, or preceptor within 24 hours of receiving notification of approval or denial regarding their Documented Absence request.

Withdrawal and Leave of Absence Policies

Administrative Withdrawal

Section 1: Administrative Withdrawal

An administrative withdrawal will mean that a student's registration, housing, meal plan, and financial aid for the current semester will be canceled. The student will be unable to register or preregister for any subsequent semester until the administrative withdrawal is resolved.

A student may be administratively withdrawn by the University if any of the following conditions apply:

a. If, after due notice, the student fails to satisfy an overdue financial obligation to the University, consisting of tuition, loans, board, room fees, library charges, or other student charges, including student activities, health insurance, graduation fees, and other such fees as may be established by the University
b. If the student fails to comply with certain administrative requirements, including, without limitation, the submission of immunization forms, satisfaction of technical standards, or completion of SEVIS registration
c. If the student fails to attend classes during the first two weeks of the semester
d. If the student fails to register for the coming semester

Section 2: Effects of Administrative Withdrawal

If a student is administratively withdrawn, their record will indicate the withdrawal date and the reason for administrative withdrawal. All courses for which a student is registered at the time of withdrawal will receive a grade of W until or unless the student is reinstated.

The student shall not be allowed to register for a future semester. Students who do not return from a University leave will be administratively withdrawn. If a student has already preregistered at the time of withdrawal, all preregistration course requests will be canceled.

The student shall receive no further material or notification from the registrar concerning University affairs once administratively withdrawn.

Section 3: Procedures for Implementing Administrative Withdrawal

The Registrar's Office will send a letter to a student administratively withdrawn from the University. The administrative withdrawal must be based on one of the grounds set forth in Section 1. Administrative withdrawal notifications are sent to the students via MCPHS email and a hard copy is also mailed to the home address on file.

Section 4: Appeals and Reinstatement

Administrative withdrawal reinstatements must be resolved within two weeks of receipt of the administrative withdrawal notification letter. Appeals must be submitted by the student to the Associate Provost for Student Achievement and Success (provostoffice@mcphs.edu) within one week of receiving the notification by completing this online appeal form: https://forms.office.com/r/K9bWzrHP6H. The appeal should include a description of the actions the student has taken to resolve the matter and the reasons why the student is entitled to reinstatement

Appeals will be reviewed for reinstatement. The Associate Provost for Student Achievement and Success in conjunction with the Academic Dean or Program Director, Student Financial Services and Immigration Services (if applicable) will approve or deny the reinstatement within 1 week after receiving the student appeal letter.

After the two weeks from which the student was administratively withdrawn, the student may be required to file a readmission application by the stated deadline for enrollment in the next available semester.

Return from Hospitalization

A student is required to meet with a representative from the Office of Student Affairs before returning to campus following treatment for a health condition that required hospitalization. Hospitalization is determined when a student has been admitted to a hospital and/or a healthcare facility. A student who has been hospitalized cannot be on campus, return to class, or participate in any University related activity until cleared by the Office of Student Affairs. It is the responsibility of the student to contact the Office of Student Affairs to set up the Return from Hospitalization meeting.

A representative from the Office of Student Affairs will meet with the student and review all documentation obtained by the student. The student must obtain and have ready for the return meeting(s) the post-hospitalization discharge summary, along with any other documentation that was given to the student by the facility where the hospitalization occurred. The representative from Student Affairs will make a determination if the student is able to return to campus. The decision of the representative from Student Affairs will be delivered to the student in writing following the meeting.

If the health condition is related to mental health, the student will also be required to meet with a representative from Counseling Services. The Office of Student Affairs will coordinate with Counseling Services to schedule the return meetings. The student must obtain and have ready for the return meeting(s) the post-hospitalization discharge summary, along with any other documentation that was given to the student by the facility where the hospitalization occurred. A representative from Counseling Services will meet with the student and review the documentation obtained by the student from the facility where the hospitalization occurred. After this meeting, the representative from Counseling Services will make a recommendation to the Office of Student Affairs on whether or not the student is able to return to class. A representative from the Office of Student Affairs will then meet with the student, and based on the outcome of the meeting and the recommendation from Counseling Services, the representative from Student Affairs will make a determination if the student is able to return to campus. The decision of the representative from Student Affairs will be delivered to the student in writing following the meeting.

Health/Medical Leave of Absence
A Health/Medical Leave of Absence may be appropriate when a student's current physical or behavioral health condition precludes successful complete of their educational program. In addition to following the steps outlined for a general Leave of Absence, a student seeking a Health/Medical Leave of Absence must submit medical documentation from the student's medical provider to the Office of Student Affairs. This documentation must indicate the medical reasons the student is unable to attend classes for the requested time period. In conjunction with submitting this documentation, the student must meet with representatives from Student Affairs on their respective campus and complete appropriate paperwork. At least one full academic semester must have passed before returning to the University under a Health/Medical Leave of Absence.

Return from Health/Medical Leave of Absence
In addition to the general Leave of Absence steps for returning to the University, a student will provide to the Office of Student Affairs, on their respective campus, documentation from the student's medical provider that indicates the student's readiness to return to class, that includes:

- a diagnosis of the condition that led to the student's leave;
- the student's length and course of treatment;
- the student's current medical health status;
- recommendations necessary for ongoing care;
- recommendation that student can safely return to classes with either full-time status or a reduced course load;
- any noted restrictions including those related to technical requirements of the student's academic program.

A student will also need to meet with a representative from the Office of Student Affairs to finalize the return process.

Involuntary Health/Medical Leave of Absence
The Dean of Students or designee may issue an involuntary health withdrawal, whether or not the student's behavior violates the Student Code of Conduct.

An involuntary health leave of absence must involve a strong likelihood of

a. serious risk of physical harm to the student themself, manifested by evidence of threats of suicide or attempts at suicide or other serious bodily harm;
b. serious risk of physical harm to other persons in the community, including an infectious condition or evidence of homicidal or other violent behavior; and/or
c. reasonable risk of physical impairment or injury to the student themself because of impaired judgment that would not allow the student to live independently or protect them in the community or not allow the student to perform the essential functions of an educational program without requiring substantial modification of the program.

Process for Involuntary Leave of Absence
Report and Initial Meeting
Upon receiving a report documenting the behavior(s) that indicate why a student should be put on involuntary health leave, the Dean of Students or designee will meet with the student regarding the report.

Suspension Pending Determination
The student may be suspended immediately from the University or University residence hall pending the determination of the involuntary health leave of absence when, on the basis of the information available, the University reasonably believes that the student's continued presence on campus endangers the physical safety or well-being of themselves or others or seriously disrupts the educational process of the University. Either before suspension or as promptly as is feasible, the student will be given the opportunity to be heard and present evidence as to why they should not be immediately suspended.

Evaluation
The Dean of Students or designee may inform the student orally or in writing that they must participate in a medical or mental health evaluation conducted by one of the following:

a. MCPHS Executive Director of Counseling Services or designee (in the case of psychological disorder)

b. An independent evaluator (licensed social worker, licensed mental health counselor, licensed psychologist [including psychiatrist], or licensed medical doctor) selected by the student at the student's expense

The student must sign a release of information form authorizing the evaluator to consult with MCPHS staff regarding the evaluation.

The evaluation must be completed within 24 hours of the date of written or verbal notice or as soon as reasonable, as determined by the Dean of Students or designee. The Dean of Students or designee may grant an extension for completion.

If the student fails to complete or refuses to participate in an evaluation when referred, they may be issued an involuntary health leave of absence.

Determination
Upon completion of the evaluation, the MCPHS staff member who conducts or consults in the evaluation will make a recommendation to the Dean of Students or designee. An opportunity must be provided for the student to discuss the recommendations with the MCPHS staff member who conducted or consulted in the evaluation and with the Dean of Students or designee.

The student will be given the opportunity to be heard and present evidence as to why they should not be issued an involuntary health leave of absence. The Dean of Students or designee will make a determination and inform the student in writing.

Effective Date
Once the involuntary health leave of absence is issued, the terms of the leave become effective immediately. A student's record will indicate the leave date and the reason for involuntary health leave. All courses for which a student is registered at the time of leave will receive a grade of W, and the refund policy as outlined in the University catalog will be followed. Requests for special consideration regarding the refund policy (e.g., leave date beyond the refund date) may be made to the Dean of Students.

The safety of the student while on campus must be assured. Advance notice of an involuntary health leave is recommended only when the safety of the student while on campus is assured. In the case of emergencies, no advance notice may be possible.

Appeal
A student who has been issued an involuntary health leave of absence may appeal the decision to the Vice President for Academic Affairs in writing within five business days of receiving the decision. The student's reasons for the appeal and the desired resolution must be indicated in the letter. The Vice President for Academic Affairs will consider the case within five business days of the request for an appeal. The decision of the Vice President for Academic Affairs is final and will be communicated to the student in writing.

Return after Leave of Absence
In order to remove the conditions of the leave of absence, the student must present medical documentation that the reason for the involuntary health leave of absence no longer precludes successful completion of an educational program. The student also must participate in an evaluation conducted by University staff, by an established deadline, and write a letter to the Dean of Students or designee detailing the student's readiness to return to the University. In most cases, at least one academic semester must have passed before readmission under an involuntary health leave may be considered.

Deviations from Established Policies
Reasonable deviations from this policy will not invalidate a decision or proceeding unless significant prejudice to a student may result.

Withdrawal from a Course
Students may withdraw from a course by the deadline published on the Academic Calendar for each respective semester. No refunds are given after the end of the official add/drop period. After the official add/drop period, students who choose to withdraw receive a grade of W for the course. The withdrawal slip must be signed by the student's academic coach. Every registered student who remains in a course is given a grade. Simply failing to attend classes does not constitute course withdrawal.

Students taking self-paced prerequisite courses in the School of Professional Studies may request to be withdrawn through the end of the 16th week. Once a final grade is given, a withdrawal will not be considered. Withdrawal requests must be submitted in the Student Gateway or by emailing professionalstudies@mcphs.edu. If the withdrawal is approved, students will be withdrawn from their course and receive a W on their transcript. No refunds will be given.

University Withdrawal
A student must complete an exit interview prior to withdrawing from the University. Boston, Worcester, and Manchester students must meet with a CASE representative. Online students must meet with their program director. The withdrawal process includes an exit interview with a designated University representative, the completion of a withdrawal form, and acquiring signatures from

Student Financial Services and Immigration Services (if applicable). Failure to complete the withdrawal process results in automatic failure in all courses in which the student is currently enrolled and forfeiture of any prorated tuition refund. Withdrawn students are not eligible for University services.

Immunization Policy

In accordance with state law and University policy, all undergraduate and graduate students are required to provide proof of immunization or demonstrate their immunity to specific vaccine-preventable diseases ("State Requirements"). Students preparing for a clinical rotation or professional practice phase must comply with the immunization requirements of this policy and any additional requirements mandated by the clinical site ("Clinical Requirements").

Non-compliance with University immunization requirements will result in adverse action up to and including administrative withdrawal from the University and may negatively impact progression in an academic program.

The following MCPHS students must show proof of required immunizations:

- All full-time students, including students attending MCPHS while on a visa who will be on campus;
- All part-time students, including students attending MCPHS while on a visa who will be on campus;
- All online students who might be in contact with patients;
- All online students whose program involves an on-campus component; and
- All students who attend or visit MCPHS as part of a formal academic visitation or exchange program.

How and when to report your immunizations to MCPHS:

Students are required to provide documentation that shows they meet the MCPHS Immunization Policy before the first day of their first semester at the University. Those who are about to begin a clinical rotation or a professional practice phase must submit their documentation one semester in advance of starting these clinical experiences. For more information about immunization documentation and scheduling, please visit the CDC website: https://www.cdc.gov/vaccines/hcp/imz-schedules/adult-age.html

MCPHS University does not collect or store immunization records directly. Instead, MCPHS works with a confidential health information service, CastleBranch, to maintain and process all student immunization records and to monitor compliance with state immunization laws. Therefore, students must submit their records electronically through the CastleBranch platform. Authorized MCPHS officials have access to these records to ensure compliance.

Immunization Documentation Deadlines

	STATE Requirements Deadline	CLINICAL Requirements Deadline
Fall Admitted Students	August 1	1 semester before embarking on clinical rotation or professional practice phase
Spring Admitted Students	December 1	1 semester before embarking on clinical rotation or professional practice phase
Summer Admitted Students	April 1	1 semester before embarking on clinical rotation or professional practice phase

Waivers and Exemptions

If a student is unable to receive one or more immunizations for medical or religious reasons, they may upload the Student Vaccine Exemption Request Form to CastleBranch. Students seeking a medical exemption must also submit a letter from their health care provider, written on official letterhead and signed, stating that the provider has personally examined the student and believes that receiving the immunization would endanger the student's health. Both medical and religious exemptions must be renewed annually at the beginning of each academic year.

In addition to the medical and religious exemptions described above, students may be exempt from the meningococcal immunization requirement if they (or their parent or legal guardian, if the student is a minor) sign a waiver. The waiver confirms that the student has received and reviewed information about the risks of meningococcal disease and has chosen to decline the vaccine. A copy of this waiver can be downloaded from the student's "MyCB" CastleBranch account.

Requirements for clinical rotations are determined by clinical sites, and MCPHS does not have the authority to override these requirements. Medical and religious exemptions may be accepted at the discretion of clinical sites. Failure to obtain all required immunizations for participation in clinical rotations or other activities involving patient contact may

negatively impact a student's progress in certain academic programs. Students are advised to contact their Clinical Coordinator for their academic program to discuss how waivers/exemptions may affect their clinical rotation requirements.

Additional Information

Certain health care agencies, clinical training sites, and service learning locations may have additional immunization requirements. To be eligible for clinical placements or service learning experiences, students must meet both all University immunization requirements and any additional requirements set by the site. If the site does not pay for any additional immunizations, students are responsible for any associated costs not covered by their personal health insurance. Students who have not fulfilled all University and site immunization requirements will not be permitted to begin clinical or service learning placements and therefore may not be able to meet program requirements.

Students who change academic programs must comply with the immunization requirements of their new program. Students should contact their Program Director or Clinical Coordinator to review and update their immunization compliance as needed.

For assistance with creating a MyCB account in CastleBranch, record uploads, and general questions, please contact:

Student Immunization Compliance Office
Division of Student Affairs
Phone: 617.735.1105
Email: immunization@mcphs.edu

MCPHS Immunization Requirements Listed By Program

ACUPUNCTURE

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday is required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual Tuberculosis skin test or Tuberculosis blood test. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- COVID-19 vaccinations: Students participating in clinical rotations at the New England School of Acupuncture Treatment Centers (Boston and Worcester campuses) must remain current with COVID-19 vaccine doses as they become available. Students seeking exemptions must follow the MCPHS Waiver/Exemptions process.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

DENTAL HYGIENE

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday is required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Tuberculosis skin test or Tuberculosis blood test within the past 12 months. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- COVID-19 vaccinations: Students participating in clinical rotations at the MCPHS Forsyth Dental Hygiene Clinics (Boston and Worcester) must remain current with COVID-19 vaccine doses as they become available, in compliance with Massachusetts Department of Public Health mandates for Healthcare Personnel. Students seeking exemptions must follow the MCPHS Waiver/Exemptions process.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

DOCTOR OF PHARMACY

State Requirements

- Measles vaccinations (2 immunizations at least 4 weeks apart; first dose must be received on or after the student's 1st birthday) or laboratory evidence of immunity.
- Mumps vaccinations (2 immunizations at least 4 weeks apart; first dose must be received on or after the student's 1st birthday) or laboratory evidence of immunity.
- Rubella vaccinations (2 immunizations at least 4 weeks apart; first dose must be received on or after the student's 1st birthday) or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap given ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was given earlier as part of a catch-up schedule. Td should be given if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series (3 doses) followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart, first dose must be received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual Tuberculosis skin test or Tuberculosis blood test. If results are positive, a clear chest x-ray with laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year. (See comment below.)

- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall. (See comment below.)
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

Comment: Doctor of Pharmacy - Boston students must complete these requirements during Year III (First Professional Year of the curriculum) and annually thereafter.

Non-Traditional Doctor of Pharmacy students must complete these requirements by the start of the first semester and annually thereafter.

DIAGNOSTIC MEDICAL SONOGRAPHY, MAGNETIC RESONANCE IMAGING, NUCLEAR MEDICINE TECHNOLOGY, RADIATION THERAPY, AND RADIOGRAPHY

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16^{th} birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual Tuberculosis skin test or Tuberculosis blood test. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

MEDICAL IMAGING AND THERAPEUTICS

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28

days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.

- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual Tuberculosis skin test or Tuberculosis blood test. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

NURSING

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual two-step Tuberculosis skin test: two tests within the last 12 months, completed 1-3 weeks apart; or Tuberculosis blood test within the past 12 months. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year. (See comment below.)
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall. (See comment below.)
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

Comment: Bachelor of Science in Nursing - Boston students must complete these requirements before entering the professional practice phase of the program and repeat it at least annually, or more frequently as required by the clinical site.

OCCUPATIONAL THERAPY

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after

the student's 1st birthday; or laboratory evidence of immunity.

- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual two-step Tuberculosis skin test (two tests within the last 12 months, completed 1-3 weeks apart) or Tuberculosis blood test. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

OPTOMETRY

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual Tuberculosis skin test or Tuberculosis blood test within the past 12 months. If results are positive, a clear chest x-ray with a laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

PHYSICAL THERAPY

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.

- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16th birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Two-step Tuberculosis skin test (meaning two tests within the last 12 months, completed 1-3 weeks apart) or Tuberculosis blood test within the past 12 months; followed by an annual one-step TB test. If results are positive, a clear chest x-ray with laboratory report with physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- COVID-19 vaccinations: Students participating in clinical rotations at the Balance Wellness and Movement Center (Worcester campus) must remain current with COVID-19 vaccine doses as they become available, in compliance with Massachusetts Department of Public Health mandates for Healthcare Personnel. Students seeking exemptions must follow the MCPHS Waiver/Exemptions process.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

PHYSICIAN ASSISTANT STUDIES

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16^{th} birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.

Clinical Requirements

- Annual Tuberculosis skin test or Tuberculosis blood test. If results are positive, a clear chest x-ray with laboratory report or physician verification of results; or a physician letter verifying the student is symptom free is required each year.
- An annual influenza shot must be obtained when the vaccine for the annual flu season becomes available each fall.
- Certain health care agencies, clinical training sites, and service learning locations that host student rotations may require additional immunizations or testing. Students are advised to contact their Clinical Coordinator for further information about meeting those requirements.

ALL OTHER PROGRAMS

State Requirements

- Measles vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Mumps vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Rubella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity.
- Tetanus Diphtheria Pertussis vaccinations: 1 dose of Tdap and either a history of DTaP primary series or age-appropriate catch-up vaccination. Tdap received ≥ 7 years may be counted, but a dose at age 11-12 is recommended if Tdap was received earlier as part of a catch-up schedule. Td should be received if it has been ≥10 years since last Tdap.
- Hepatitis B immunization series: 3 doses followed by laboratory evidence of immunity; or Heplisav-B vaccine (2 doses, first dose must be given on or after the student's 18th birthday, and the second dose must be given at least 28 days after the first dose) followed by laboratory evidence of immunity. Laboratory evidence of immunity alone is also acceptable.
- Varicella vaccinations: 2 immunizations at least 4 weeks apart and the first dose must have been received on or after the student's 1st birthday; or laboratory evidence of immunity; or physician diagnosis of varicella.
- Meningococcal vaccination: 1 dose of MenACWY (formerly MCV4) received on or after the student's 16^{th} birthday required only for students under the age of 22. Meningococcal B vaccine does not meet this requirement.
- An annual influenza shot is not required. However, it is recommended that students consult their health care provider about receiving the vaccine.

Protection from Discrimination and Harassment Policy

I. POLICY STATEMENT

Massachusetts College of Pharmacy and Health Sciences ("MCPHS" or the "University") does not discriminate in admission, treatment, or access to its programs or activities or in employment in its programs or activities on the basis of race, color, national origin, sex, pregnancy, age, physical or mental disability, creed, religion, sexual orientation, gender identity, gender expression, ancestry, genetic information, military service, marital status, familial status, or veteran status and actively complies with the requirements of Federal Executive Orders 11246 and 11375 as amended; the Civil Rights Act of 1964 as amended; Title IX of the Education Amendments of 1972 as amended; Sections 503 and 504 of the Rehabilitation Act of 1973; Section 402, Vietnam Era Veterans Readjustment Assistance Act of 1974; the Age Discrimination Act of 1975; the Americans with Disabilities Act of 1990 (as amended by the ADA Amendments Act of 2008); and all other applicable federal, state, and local laws, regulations, and executive directives.

The University will not tolerate acts of discrimination or harassment based upon Protected Classes, or related retaliation against any individual for complaining of or participating in an investigation or proceeding relating to a complaint of discrimination or harassment based upon a Protected Class. For purposes of this policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, physical or mental disability, creed, religion, ethnicity, sexual orientation, gender, gender identity, gender expression, ancestry, genetic information, military service, marital status, familial status, veteran status and any other characteristic protected by law.

Discrimination: Treating individuals or groups less favorably because of their Protected Class.

Harassment: Unwelcome and/or offensive behavior, based on one or more of the Protected Classes, that subjects an individual to inferior terms, conditions or privileges of education or employment. Harassing conduct rises above the level of what a similarly situated reasonable person would consider petty slights or trivial inconveniences. Harassment can take many forms, such as words, visual images, gestures, or other verbal or physical conduct by any means. Harassment may include, but is not limited to:

- Epithets, slurs, or negative stereotyping;
- Threatening, intimidating, or hostile acts; and
- The circulation or display of written or graphic material that belittles or shows hostility or aversion toward an individual or group including through e-mail and other electronic media.

Retaliation: Retaliation is taking or threatening any adverse action against an individual (or group of individuals) because of their participation in any manner in an investigation or proceeding under this Policy, including individuals who file a report, are interviewed, or otherwise provide evidence in the investigation. Retaliation includes threatening, intimidating, harassing, or any other conduct that would discourage a reasonable person from engaging in activity protected under this Policy.

The process outlined in this policy applies to all complaints of unlawful discrimination or harassment, except those alleging any form of Sexual Harassment. Any person alleging Sexual Harassment, including sexual assault, domestic violence, dating violence and stalking, on the part of any University student, faculty or staff member, affiliate (e.g. visitor, vendor, etc.) or non-affiliate, should refer to the University's Protection from Sexual Harassment (Title IX) Policy. Allegations of Sexual Harassment must be evaluated by the Title IX Coordinator to determine whether the conduct falls within the definition of Title IX. Allegations that do not fall within the jurisdiction of the Title IX policy, as determined by the Title IX Coordinator, may be referred for investigation and adjudication pursuant to the procedures set forth below.

Inquiries regarding the University's compliance with Equal Opportunity and Affirmative Action laws may be directed to the Chief Human Resources Officer, Kevin Dolan, at Kevin.Dolan@mcphs.edu or 617.732.2144.

II. REPORTING

In order to take appropriate corrective action, the University must be aware of discrimination, harassment, and related retaliation that occurs in University employment, educational programs, and activities. MCPHS strongly encourages anyone who believes that they have experienced or witnessed discrimination, harassment, or related retaliation to report such behavior immediately.

Where to Report. Allegations or complaints may be directed to the Chief Human Resources Officer and/or the Dean of Students (in either case, the individual receiving the complaint is referred to herein as the "Designated Officer"). In cases involving complaints or allegations against either the Chief Human Resources Officer or the Dean of Students, complaints or allegations should be directed to the President. Any complaint regarding the President should be directed to the Chair of the Board of Trustees.

Concerns and complaints may also be registered online here: https://www.lighthouse-services.com/MCPHS/incident-V3-mcphs.asp.

When to Report. All reports or complaints should be made as promptly as possible after the occurrence.

Mandated Reporters: Although all community members are strongly encouraged to report any conduct that violates this policy, the following individuals have a duty to notify the Chief Human Resources Officer (Kevin.Dolan@mcphs.edu) or the Dean of Students (Jacinda.FelixHaro@mcphs.edu) promptly upon witnessing, receiving notification of, or otherwise learning of an incident of that may constitute discrimination, harassment, or related retaliation that occurred in the course of University employment, educational programs, or activities.

- All University Officers (i.e., President, Chief Executive Officer, Vice President(s), Secretary, Assistant Secretary, Treasurer, and Assistant Treasurer);
- All Deans, Department Heads/Chairs, and Program Directors;
- The Title IX Coordinator;
- All employees with managerial or supervisory authority;
- All employees in Human Resources; and
- All employees in Public Safety.

The failure of a mandated reporter hereunder to report a potential violation promptly to the Chief Human Resources Officer or Dean of Students is, itself, a violation of this Policy, except in the case of an individual whose profession and University responsibilities requires them to keep certain communications confidential (e.g., a professional counselor). Such an individual is not required to report confidential communications received while performing those privileged responsibilities.

Right to file criminal complaint. A complainant has the right to file a criminal complaint regarding any conduct that may constitute a crime at any time before, during or after the University's investigation.

Amnesty Policy. The University encourages the reporting of all potential violations of this policy. Sometimes individuals are hesitant to report because they fear being charged with other policy violations. Because the University has a paramount interest in protecting the well-being of its community and remedying Discrimination and Harassment, other policy violations will be considered, if necessary, separately from allegations under the Policy and the circumstances under which the other policy violations became known will be considered as a mitigating factor.

Confidentiality. The University will maintain the privacy of the complaint, and the privacy of the persons involved, to the greatest extent possible, consistent with its goal of conducting a thorough and complete investigation and to the extent permitted by law. It is important to understand that while the University will treat information it has received with appropriate sensitivity, nonetheless there may be a need to share certain information within the University for the purposes of investigating, stopping, or preventing Discrimination and Harassment.

Zero-Tolerance for Retaliation. The University will not tolerate retaliation against any employee or student based upon such individual's filing of a complaint of discrimination or harassment or participation in the investigation or adjudication of such a complaint. Retaliation is a serious violation of this policy, as well as of federal, state, and local law. Anyone who believes they are a victim of retaliation should report the matter immediately according to the same procedure provided in this policy for making complaints of discrimination or harassment.

III. INTERIM MEASURES

The Designated Officer, at their discretion, may impose interim measures or provide supportive accommodations while the complaint is pending, which may include, but are not limited to: no contact orders, adjustments to class or work schedules, temporary reassignment, restricting access to certain buildings, temporary suspension, etc.

IV. INFORMAL RESOLUTION

In certain circumstances, it may be possible for a concern to be resolved through an informal resolution procedure. When the Designated Officer deems appropriate, MCPHS will offer an informal resolution option to the parties, in which the Designated Officer will appoint a neutral third party, who may facilitate a dialogue between the parties or suggest a resolution to the parties, which they may accept or reject. Participation in the informal resolution process is entirely voluntary, and parties may choose to withdraw from the process at any time. If either party elects to withdraw from the informal resolution process, the concern or complaint will be addressed through the formal resolution process. However, once both parties have agreed to a resolution, that resolution will be considered final.

V. FORMAL RESOLUTION

A. Investigation Procedures

1. **Initiating the investigation**. The Designated Officer will review the allegations and determine whether the alleged conduct could constitute a violation of this policy. If so, the Designated Officer will assign a trained investigator to

conduct a prompt, thorough, and impartial investigation. The investigator will contact the complainant (the person bringing the complaint) and the respondent (the person who is accused of misconduct) to arrange interviews at the appropriate time.

If the Designated Officer determines that the alleged conduct is not prohibited by this policy, the Designated Officer may dismiss the complaint or may take steps to address the complaint under a different policy or means.

2. **Collecting information**. The investigator will conduct prompt, thorough, and impartial interviews of the complainant, the respondent, and any witnesses. The investigator will review evidence and consider information relevant to the complaint. Throughout the investigation both parties will have an equal opportunity to identify witnesses and provide other information, but the investigator has discretion to determine whether to interview a witness and what evidence is relevant.
3. **Standard of proof**. The "preponderance of the evidence" standard is applied to the investigator's findings to determine whether the respondent is responsible. The standard requires a finding that it is more likely than not that discrimination or harassment occurred in order to assign responsibility to the respondent.
4. **Investigation Report**. At the conclusion of the investigation, the investigator shall prepare a written report that shall include a statement of factual findings and a recommendation as to whether the evidence supports a finding of a policy violation.
5. **Withdrawing a complaint**. Prior to the conclusion of a discrimination or harassment investigation, the complainant may withdraw their complaint. Withdrawal of the complaint may end the investigation and resolution process. However, the University reserves the right to proceed with the complaint, even after the complainant withdraws it, to protect the interests and safety of the University community, as necessary.
6. **Timeframe**. An investigation will be concluded within reasonable timeframes and a determination finalized within sixty (60) business days after the commencement of the investigation, absent extenuating circumstances.

B. Adjudication Procedures

1. **Procedures for Student Respondents**[1]: In cases in which the Respondent is a student, the investigation report will be transmitted to the Dean of Students or their designee. The complaint will be adjudicated, including any appeals, in accordance with the Community Standards System as set forth in the Student Code of Conduct and Community Standards System, which can be found in the MCPHS Student Handbook (available on the MCPHS website). In the case of a student respondent(s), records will be retained according to policies administered by the Office of the Dean of Students.
2. **Procedures for Employee Respondents:** In cases in which the Respondent is an employee (faculty or staff), the investigation report will be transmitted to the Chief Human Resources Officer or their designee, who may accept the recommendation of the investigator in whole or in part or determine that additional information is needed and consult with the investigator and/or the parties or request that the same, or another investigator, do further investigation. Once the Chief Human Resources Officer or their designee is satisfied that the investigation is complete, the Chief Human Resources Officer or designee will make a finding as to whether the policy was violated and, in consultation with MCPHS Legal Affairs and/or the Respondent's supervisor or program or department head, determine the appropriate remedies. The Chief Human Resources Officer or their designee will then notify the Complainant and Respondent of the finding to the extent permitted by law. The Complainant will not be notified as to any discipline imposed unless it has a direct impact on the complainant, e.g., a no-contact order.
3. **Vendor or Visitor Respondents:** When the Respondent is a vendor or contractor, the investigation report will be provided to the MCPHS employee responsible for managing the vendor relationship who will take appropriate action in accordance with the vendor contract. When the Respondent is a visitor, the investigation report will be provided to the appropriate MCPHS office depending on the identity of the visitor and the nature of the visit.

C. Document Retention

In all cases, the Designated Officer shall retain records relating to the complaint for a minimum of three (3) years or for such longer period as (a) the complainant and/or respondent remains employed at MCPHS or (b) any administrative or legal action, arising out of the complaint is pending. All records of discrimination and harassment and related retaliation reports and investigations shall be considered private and shall not be disclosed publicly except to the extent required by law.

[1] Some individuals are both students and employees of MCPHS. The University will determine, at its sole discretion, whether the employee or student procedures should be utilized in a given circumstance.

VI. COMPLAINTS BY AND AGAINST UNIVERSITY EMPLOYEES AND STUDENTS ARISING IN AN AFFILIATED ENTITY.

University employees and students sometimes work or study at the worksite or program of another organization affiliated with MCPHS. When a student or employee involved in an off-site program is alleged to have been subjected to or engaged in conduct that violates this Policy, the conduct should be reported in accordance with the complaint procedures set forth above. The University will investigate and address the alleged violation in coordination with affiliated entity to the extent possible. In circumstances in which the Respondent is a University employee or student, the complaint will be addressed in accordance with the procedures set forth above. The affiliated entity may also choose to address the alleged violation through its own procedures.

VII. ACCOMMODATION

The University is committed to fostering an inclusive and accessible community. To that end, and in accordance with federal, state and local law, the University provides reasonable accommodations to qualified students and employees on the basis of: disability; pregnancy, childbirth and related conditions; and religion.

Students who require reasonable accommodations based on disability should contact the Office of Student Access and Accommodations for assistance. https://www.mcphs.edu/academics/academic-support-and-resources/office-of-student-access-and-accommodations

Students who require reasonable accommodation based upon religion, pregnancy, childbirth or related conditions (including lactation) should contact the Division of Student Affairs (student_affairs@mcphs.edu).

Employees who require reasonable accommodations based on disability, pregnancy, childbirth and related conditions (including lactation) or religion should contact the Office of Human Resources at HR@mcphs.edu.

VIII. EDUCATION

MCPHS will broadly disseminate this policy, distribute a list of resources available to respond to concerns of Protected Class discrimination, harassment, and related retaliation and develop and present appropriate educational programs for students and employees.

IX. STATE AND FEDERAL REMEDIES

MCPHS encourages community members to bring any concerns to the University's attention, so that appropriate steps can be taken promptly to address them. However, using the University's complaint process does not prohibit a student or employee from filing a complaint with federal or state agencies.

Home | U.S. Equal Employment Opportunity Commission
https://www.eeoc.gov/

Office for Civil Rights | U.S. Department of Education
https://www2.ed.gov/about/offices/list/ocr/index.html

Massachusetts Commission Against Discrimination
https://www.mass.gov/orgs/massachusetts-commission-against-discrimination

New Hampshire Commission for Human Rights
https://www.nh.gov/hrc/

X. RELATED POLICIES

MCPHS Protection from Sexual Harassment (Title IX) Policy prohibits sexual harassment and sets forth the complaint, investigation, and adjudication procedures for addressing alleged violations of the policy.

MCPHS Professional Conduct in the Workplace Policy Statement provides that the University expects its employees to respect the dignity of others and show the same respect and concern for all community members.

MCPHS Student Conduct Policies and Procedures addresses student conduct that occurs on or as it relates to university property, or at official functions and university-sponsored programs conducted away from the campus. For related complaint, grievance or disciplinary processes see the Student Code of Conduct and Community Standards System.

Protection from Sexual Harassment (Title IX) Policy

1. MCPHS Statement on Nondiscrimination

MCPHS University ("MCPHS" or the "University") is firmly committed to ensuring that all who work, study, visit, or seek treatment in our clinics may do so in an environment free of harassment and/or discrimination.

In support of this commitment, MCPHS does not discriminate based on race, color, religion, caste, creed, sex, age, marital status, national origin, mental or physical disability, political belief or affiliation, pregnancy and pregnancy-related condition(s), veteran status, sexual orientation, gender identity and expression, genetic information, natural and protective hairstyle and any other protected characteristic/class of individuals protected from discrimination under applicable state or federal law in employment, admissions, participation in its programs, services, and activities, and selection of vendors who provide services or products to MCPHS. MCPHS actively complies with the applicable requirements of the Civil Rights Act of 1964 as amended; Title IX of the Educational Amendments of 1972 and applicable regulations; Sections 503 and 504 of the Rehabilitation Act of 1973; Section 402, Vietnam Era Veterans Readjustment Assistance Act of 1974; the Age Discrimination Act of 1975; the Americans with Disabilities Act of 1990 (as amended by the ADA Amendments Act of 2008); and pertinent laws, regulations, and executive directives of the Commonwealth of Massachusetts and the state of New Hampshire and other applicable state and federal statutes.

2. Overview of this Policy

MCPHS prioritizes creating and sustaining a climate of excellence, as it is vital to our collective success and commitment to a thriving, engaged community. The University is firmly committed to providing a workplace and educational environment and other benefits, programs, and activities free from sexual harassment and retaliation for engaging in a protected activity.

Our values of respect, kindness, and compassion anchor our commitment to fostering a welcoming and respectful learning and working environment for all applicants for admission or employment, employees, students, and persons authorized to conduct business with and/or perform other services on behalf of the university. MCPHS values and upholds the dignity of all members of its community and strives to balance the parties' rights in the resolution process during what is often a difficult time for all involved.

As provided for in Title IX of the Higher Education Amendments of 1972, the University prohibits sexual harassment in all its educational and employment programs and activities, including admission and employment. Additionally, this policy complies with the regulations provided for in the Violence Against Women Reauthorization Act of 2013 (“VAWA”), the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (“Clery Act”), and Title VII of the Civil Rights Act of 1964.

To ensure compliance with federal, state, and local civil rights laws and regulations and affirm its commitment to promoting fairness and equity in all aspects of the education program or activity, MCPHS has developed policies and procedures that provide a prompt, fair, and impartial process for those involved in an allegation of sexual harassment.

On January 9, 2025, the United States District Court for the Eastern District of Kentucky issued a ruling in Tennessee vs. Cardona (Case: 2:24-cv-00072-DCR-CJS Doc #: 143 Filed: 01/09/25) vacating the 2024 Title IX regulations and reinstating the 2020 Title IX regulations.

This Policy and the MCPHS Sexual Harassment Resolution Process (“Resolution Process”) apply only to qualifying allegations of Title IX Sexual Harassment (including sexual assault, dating violence, domestic violence, and stalking involving students and employees, as defined in this policy and the Resolution Process.

MCPHS also prohibits other forms of sexual misconduct, retaliation, and discrimination, including sex-based discrimination and harassment, as defined in the Protection from Discrimination and Harassment Policy and other applicable university policies, as federal and state law requires. Resolution Processes for addressing such forms of discrimination and harassment may be found in the MCPHS Student Handbook for concerns regarding student violations, the MCPHS Protection from Discrimination and Harassment Policy, the MCPHS Faculty Manual, and the MCPHS Employee Handbook for all other such concerns.[1]

If dismissal occurs under this policy’s resolution process, please see the MCPHS Protection from Discrimination and Harassment Policy for a description of the procedures for resolving other concerns of discrimination and harassment.

The MCPHS Protection from Discrimination and Harassment Policy also applies to sexual harassment (including sexual assault, dating violence, domestic violence, and stalking, as defined in Sections 16 and 17 of this policy) when jurisdiction does not fall within this policy and all concerns of retaliation, as determined by the Title IX Coordinator.[2]

This policy provides for promptly and equitably resolving such complaints in compliance with the 2020 Title IX regulations and the Massachusetts and New Hampshire law.

Under this policy, there is a presumption that a Respondent is not responsible for the alleged conduct. If, upon conclusion of the resolution process, an employee or student is found responsible for violating this policy, the University will issue appropriate sanctions to address sexual harassment, prevent its reoccurrence, and remedy its impact on the complainant and the MCPHS community.

Questions about the MCPHS Protection from Sexual Harassment (Title IX) Policy, the MCPHS Sexual Harassment Resolution Process, and other related MCPHS policies and procedures may be referred to the MCPHS Title IX Coordinator or the Office of Community Engagement, the U.S. Department of Education's Office for Civil Rights, or both. See the contact information in Section 9 of this document.

3. Purpose of the Policy

The purpose of this Policy is to:

1. explicitly prohibit sexual harassment;
2. identify and define Prohibited Conduct;
3. outline the process for reporting an allegation of sexual harassment
4. provide a fair and impartial resolution process;
5. identify on and off-campus resources and supportive measures available regardless of whether a formal complaint is filed and
6. describe ongoing prevention and awareness programs.

4. Related Policies

- MCPHS Protection from Discrimination and Harassment
- Family Education and Privacy Act (FERPA)
- Student Handbook
- Faculty Manual
- Employee Handbook

5. Definitions

Advisor means a person chosen by a party to accompany them to meetings related to the Resolution Process, advise the party on that process, and conduct questioning for the party at the live hearing, if any. The university will assign an advisor for the live hearing if the party does not have one.

Appeal Officer or Decision-Maker means the person who accepts or rejects a submitted appeal request, determines whether an error occurred that substantially affected the investigation or original determination, and directs corrective action, accordingly.

Complainant means an individual alleged to have been subjected to conduct that could constitute sexual harassment or retaliation for engaging in a protected activity covered by this policy.

Confidential Resource Provider/Advisor is an employee or other individual designated by the university to provide information on: (1) reporting options and the effects of each option; (2) counseling services available on and off campus; (3) medical and health services available on and off campus; (4) available supportive measures; (5) disciplinary process of the university; and (6) the legal process carried out through local law enforcement agencies. Confidential Resource Provider/Advisor services are available to assist parties in a Sexual Harassment matter. Their services are confidential unless a party, in writing, requests certain information be disclosed or as otherwise required by state or federal law. If requested by the Complainant and/or Respondent in an alleged sexual assault matter, the Confidential Resource Provider/Advisor may arrange

Supportive Measures. The Confidential Resource Provider/Advisor shall notify the parties of their rights and the university's responsibilities regarding a protection order, no-contact order, and any other lawful orders issued by the university or a civil, criminal, and tribal court. The party is not required to file a written complaint to receive assistance from a Confidential Resource Provider/Advisor.[3]

Decision-maker or Hearing Officer means the person(s) responsible for hearing the evidence, determining relevance, determining whether this Policy has been violated and/or assigning sanctions.

Directly Related Evidence is evidence connected to the complaint but which is neither inculpatory (tending to prove a violation) nor exculpatory (tending to disprove a violation) and cannot be relied upon by the Decision-maker(s). Compare to Relevant Evidence below.

Education Program or Activity means locations, events, or circumstances where MCPHS exercises substantial control over the Respondent and the context in which the sexual harassment and/or retaliation occurs and also includes any building owned or controlled by a student organization that the University officially recognizes.

Final Determination is a conclusion by the preponderance standard of proof that a policy violation occurred.

Finding is a conclusion by the preponderance standard of proof that the conduct did or did not occur as alleged (as in a "finding of fact").

Formal Complaint means a document submitted and signed by a Complainant or signed by the Title IX Coordinator alleging a Respondent engaged in sexual harassment or retaliation for engaging in a protected activity and requesting that the University investigate the allegation(s).

Formal Resolution Process means a method of formal resolution designated by the University to address conduct that falls within this policy, which is included in the MCPHS Sexual Harassment Resolution Process, and which complies with the requirements of the 2020 Title IX regulations (34 C.F.R. § 106.45) and the Violence Against Women Act § 304.

Informal Resolution means a complaint resolution agreed to by the Parties and approved by the Title IX Coordinator that occurs prior to a formal Final Determination being reached.

Investigator means the person(s) authorized by the University to gather facts about an alleged violation of this Policy, assess relevance and credibility, synthesize the evidence, and compile this information into an investigation report of Relevant Evidence and a file of Directly Related Evidence.

Mandated Reporter means a University employee who is obligated by policy to share knowledge, notice, and/or reports of sexual harassment and/or retaliation with the Title IX Coordinator.

Notice means that an employee, student, or third party informs the Title IX Coordinator or other Official with Authority of the alleged occurrence of sexual harassment and/or related retaliatory conduct. The University is not on notice if the only person who knows about the alleged harassment is the respondent.

Official with Authority (OWA) means an MCPHS employee who is responsible for implementing corrective measures for sexual harassment and/or retaliation on behalf of the University.

Parties means the Complainant(s) and Respondent(s), collectively.

Relevant Evidence is evidence that tends to prove (inculpatory) or disprove (exculpatory) an issue in the complaint.

Remedies are post-final Determination actions directed to the Complainant and/or the community as mechanisms to address safety, prevent recurrence, and restore access to the University's education program.

Respondent means an individual who has been reported to have engaged in conduct that could constitute sexual harassment or related retaliation for engaging in a protected activity under this Policy.

Resolution means the result of an Informal Resolution or Formal Resolution Process.

Retaliation includes intimidation, threats, coercion, or discrimination against any individual for the purpose of interfering with any right or privilege secured by this policy, or because the individual has made a report or complaint, testified, assisted, or participated or refused to participate in any manner in an investigation, proceeding, or hearing. Intimidation, threats, coercion, or discrimination, including charges against an individual for other policy violations that do not involve sex discrimination or sexual harassment, but arise out of the same facts or circumstances as a report or complaint of sex discrimination, or a report or formal complaint of sexual harassment, for the purpose of interfering with any right or privilege secured by this policy, constitutes retaliation.

Sanction means a consequence imposed on a Respondent who is found to have violated this Policy.

Student means any individual who has accepted an offer of admission, or who is registered or enrolled for credit or non-credit bearing coursework, and who maintains an ongoing educational relationship with the University.

Title IX Coordinator is the official designated by the University to ensure compliance with Title IX. References to the Coordinator throughout this policy may also include a designee of the Coordinator for specific tasks.

Title IX Sexual Harassment is an umbrella category including the offenses of sexual harassment, sexual assault, stalking, dating violence, and domestic violence. See Sections 16 and 17 for greater detail.

6. Scope

The purpose of this policy is to prohibit sexual harassment as defined by the 2020 Title IX Regulations. When an alleged policy violation is reported, the allegations are subject to resolution using the MCPHS Sexual Harassment Resolution Process[4] as determined by the Title IX Coordinator, in consultation with the Office of Community Engagement, and as detailed below.

When the Respondent is a member of the MCPHS community, a Formal Complaint may be filed, and a resolution process will be available to the Complainant, who may also be a member of the MCPHS community. This community includes students, student organizations, faculty, administrators, staff, and third parties participating in or attempting to participate in an education or employment program or activity at the university. The MCPHS Sexual Harassment Resolution Process may be applied to incidents addressed and investigated under this Policy.

Individuals are encouraged to report any policy violation as soon as possible to maximize the University's ability to respond promptly and effectively. Reports and Complaints may be made at any time without regard to how much time has elapsed since the reported incident(s).

If the Respondent is no longer a student or employee at the time of the report or complaint, the University may not be able to take disciplinary action against the Respondent, but it will still seek to offer supportive measures for the Complainant and take steps, if necessary and possible, to end the prohibited behavior, prevent, address its recurrence and effects.

For a party to file a formal Title IX complaint, the reported conduct must have occurred within the scope of the University's programs or activities defined as locations, events, or circumstances over which MCPHS exercised substantial control over both the respondent and the context in which the sexual harassment occurs, and also includes any building owned or controlled by a student organization that is officially recognized by MCPHS.

Students who cross-register for courses at other Colleges of the Fenway institutions are expected to follow the host institution's policy and resolution process with respect to conduct that occurred on the other institution's campus or otherwise in their education program or activity.

MCPHS recognizes that reports and/or Formal Complaints under this Policy may include violations of other MCPHS policies, involve various combinations of students, employees, and other members of the MCPHS community, and may require the simultaneous attention of multiple MCPHS departments. Accordingly, all University departments will share information, combine efforts, and otherwise collaborate, to the maximum extent permitted by law and consistent with other applicable MCPHS policies, to provide uniform, consistent, efficient, and effective responses to alleged sexual harassment or retaliation.

7. Jurisdiction

Allegations of Title IX Sexual Harassment, as defined in Sections 16 and 17 of this policy, that is reported to have occurred in a University Program or activity within the United States shall proceed pursuant to this policy and the MCPHS Sexual Harassment Resolution Process.

Allegations of sex discrimination, retaliation, and/or other sexual misconduct that does not fall within the definition of Title IX sexual harassment or that did not occur in the United States will proceed pursuant to the MCPHS Protection from Discrimination and Harassment Policy and the appropriate institutionally established resolution processes.

The Title IX Coordinator is the University official designated to evaluate reports of sexual misconduct and determine whether the conduct described falls under the purview of this policy and the applicable resolution process.

Regardless of where the conduct occurred, MCPHS will address notice/complaints to determine whether it occurred in the context of its employment or education program or activity and/or has continuing effects on campus (including virtual learning and employment environments) or in an off-campus sponsored program or activity. A substantial MCPHS interest includes:

1) Any action that constitutes a criminal offense as defined by law. This includes, but is not limited to, single or repeat violations of any local, state, or federal law.

2) Any situation in which it is determined that the Respondent poses an immediate threat to the physical health or safety of any student, employee, or other individual.
3) Any situation that significantly impinges upon the rights, property, or achievements of others, significantly breaches the peace, and/or causes social disorder.
4) Any situation that substantially interferes with the educational interests or mission of MCPHS.

If the Respondent is unknown or is not a member of the MCPHS community, the Title IX Coordinator will assist the Complainant in identifying appropriate institutional and local resources and support options. If criminal conduct is alleged, the University may assist in contacting MCPHS Public Safety or the local law enforcement if the individual would like to file a police report.

Further, even when the Respondent is not a member of the MCPHS community, supportive measures, remedies, and resources may be provided to the Complainant by contacting the Title IX Coordinator or the MCPHS Confidential Resource Provider.

In addition, the University may take other actions, as appropriate, to protect the Complainant against third parties, such as barring individuals from the University's property and/or events.

All vendors serving MCPHS through third-party contracts are subject to the policies and procedures of their employers and/or to these Policies and resolution processes to which their employer has agreed to be bound by their contracts.

When the Respondent is enrolled in or employed by another institution, the Title IX Coordinator may assist the Complainant in liaising with the appropriate individual at that institution, as it may be possible to pursue action under that institution's policies.

Similarly, the Title IX Coordinator may be able to assist and support a student or employee Complainant who experiences sexual harassment or retaliation in an externship, study abroad program, or other environment external to the University, where the sexual harassment policies and procedures of the facilitating or host organization may give the Complainant recourse.

8. Title IX Coordinator

The Title IX Coordinator is responsible for implementing this Policy and the applicable resolution process and primarily coordinating MCPHS's efforts in the intake, investigation, resolution, and implementation of supportive measures to stop, remedy, and prevent sexual harassment and retaliation prohibited under this Policy.

All parties will receive information detailing options and resources, which the Title IX Coordinator may also

review with each party separately, including information regarding Conflict of Interest or Bias.

The Title IX Coordinator acts with independence and authority, free from bias and conflicts of interest. The Title IX Coordinator oversees all resolutions under this Policy and the Sexual Harassment Resolution Process. Other individuals involved in the resolution process, such as investigators, advisors, and hearing and appeal officers, are vetted and trained to ensure they are not biased for or against any party in a specific complaint or for or against Complainants and/or Respondents.

To raise any concern involving bias, conflict of interest, sexual harassment, or retaliation by the Title IX Coordinator, contact the MCPHS Chief Community Engagement Officer. Concerns of bias, sexual harassment, retaliation, or a potential conflict of interest by any other person involved in the resolution process, as specified above, should be raised with the Title IX Coordinator.

9. Administrative Contact Information

Complaints or notice of alleged policy violations, or inquiries about or concerns regarding this Policy and procedures, may be made internally to:

Rachel Andoscia Title IX Coordinator
Office of Community Engagement 179 Longwood Ave
Boston, MA 02115
617.732.1048
Email: Rachel.Andoscia@mcphs.edu
Web: https://www.mcphs.edu/about/legal/title-ix

Clara I. Reynolds
Chief Community Engagement Officer
Office of Community Engagement
10 Lincoln Square
Worcester, MA 01608
617.751.3016
Email: Clara.Reynolds@mcphs.edu
https://www.mcphs.edu/about/legal/title-ix

Dawn Ballou
MCPHS Confidential Resource Provider
179 Longwood Ave.
Boston, MA 02115
617.732.2077
dawn.ballou@mcphs.edu

To take appropriate corrective action, the University must have actual knowledge of sexual harassment and related retaliation that occurs in university employment, educational programs, and activities. The following individuals are considered officials with authority and have a duty to report whenever they witness, receive notification of, or otherwise have knowledge of an incident of sexual harassment or related retaliation that occurred during university employment, educational programs, or activities.

- All University Officers;
- Academic Deans and Program Directors, and Academic and Administrative Department Heads;
- The Title IX Coordinator

MCPHS has also classified all employees as Mandated Reporters of any knowledge they have about a member of the community who is experiencing sexual harassment and/or related retaliation. The section below on Mandated Reporting details the employees' responsibilities and duties.

Inquiries may also be made externally to:

Office for Civil Rights (OCR)

U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-1100
Customer Service Hotline #: 800.421.3481
Facsimile: 202.453.6012
TDD#: 877.521.2172
Email: OCR@ed.gov
Web: http://www.ed.gov/ocr

Office for Civil Rights (OCR) Boston Office
8th Floor, 5 Post Office Square
Boston, MA, 02109-3921
Email: OCR.Boston@ed.gov

U.S. Department of Health and Human Services
Office for Civil Rights New England Region
Government Center, J.F. Kennedy Federal Building - Room 1875
Boston, MA, 02203
Email: ocrmail@hhs.gov

For Complaints involving employee-on-employee conduct:

Equal Employment Opportunity Commission (EEOC)
https://www.eeoc.gov/

EEOC Regional Office
John F. Kennedy Federal Building, 15 New Sudbury Street, Room 475
Boston, MA, 02203
https://www.eeoc.gov/field-office/boston/location

Massachusetts Commission Against Discrimination (MCAD)
Boston Office
One Ashburton Place, Sixth Floor, Room 601 Boston, MA 02108 617.994.6000
https://www.mass.gov/orgs/massachusetts-commission-against-discrimination

Worcester Office
455 Main Street, Room 101
Worcester, MA 01608
508.779.8010
https://www.mass.gov/orgs/massachusetts-commission-against-discrimination

The New Hampshire Commission of Human Rights Intake Department
2 Industrial Park Drive
Concord, NH 03301
603.271.2767
https://www.nh.gov/hrc/

10. Notice/Complaints of Sexual Harassment and/or Retaliation

Notice or complaints of sexual harassment and/or retaliation may be made using any of the following options:

1) File a report or Formal Complaint with, or give verbal notice to, the Title IX Coordinator or an MCPHS Official with Authority. Such a report or Formal Complaint may be made at any time (including during non-business hours) using the telephone number, email address, or by mail to the office listed for the Title IX Coordinator.
2) Report online using the Sexual Harassment Reporting Form. Anonymous reports are accepted, but the University's ability to review the concerns may be limited if the parties cannot be identified, which could result in no further formal action taken by the University. However, measures intended to protect the community may be enacted. The University tries to provide supportive measures to Complainants, which may be impossible with an anonymous report that does not identify the Complainant. Because reporting carries no obligation to initiate a formal response, and because

MCPHS respects Complainants' requests to dismiss complaints unless there is a compelling threat to health and/or safety, the Complainant is largely in control and should not fear a loss of confidentiality by making a report that allows the University to discuss and/or provide supportive measures.

3) Report using the University's hotline, toll-free at 877.472.2110, 24 hours a day, 7 days a week.

As used in this Policy, the term "Formal Complaint" means a document or electronic submission (such as by electronic mail or through an online portal provided by MCPHS for this purpose) that indicates that the Complainant is the person filing the complaint and requests that MCPHS investigate the allegations. If notice is submitted in a form that does not meet this standard, the Title IX Coordinator will contact the Complainant to ensure that it is filed correctly.

11. Supportive Measures

MCPHS will offer and implement appropriate and reasonable supportive measures to the parties upon notice of alleged sexual harassment and/or related retaliation, regardless of whether or not a formal complaint has been filed. Supportive measures are non-disciplinary, non-punitive individualized services offered as appropriate and reasonably available. They are offered, without fee or charge to the parties, to restore or preserve access to the University's education program or activity, including measures designed to protect the safety of all parties and/or the MCPHS educational and work environment and/or to deter sexual harassment and/or retaliation.

When supportive measures are offered, the University will inform the Complainant, in writing, that they may file a Formal Complaint with MCPHS at that time or in the future if they have not done so already. The Title IX Coordinator works with the Complainant to ensure that their wishes are considered with respect to any planned and implemented supportive measures.

However, the University, not the Complainant, determines the appropriate supportive measures.

The University will maintain the confidentiality of the supportive measures, provided that confidentiality does not impair its ability to provide them. In addition, MCPHS will ensure that there is as minimal an academic/employment impact on the parties as possible. The University will implement measures that do not unreasonably burden the other party.

These actions may include, but are not limited to:

- Referral to counseling services
- Referral to the Employee Assistance Program
- Referral to community-based service providers
- Visa and immigration assistance
- Student financial aid counseling
- Education to the MCPHS community or community subgroup(s)
- Altering campus housing assignment(s)
- Altering work arrangements for employees or student-employees
- Safety planning
- Providing transportation assistance
- Implementing contact limitations (no-contact directives) between the parties
- Academic support, extensions of deadlines, or other course/program-related adjustments
- Trespass, Persona Non Grata (PNG), or Be-On-the-Lookout (BOLO) orders
- Timely warnings
- Class schedule modifications, withdrawals, or leaves of absence
- Increased security and monitoring of certain areas of the campus
- Any other actions deemed appropriate by MCPHS

Violations of no-contact directives or other restrictions may be referred to the appropriate student or employee disciplinary processes for enforcement.

12. Emergency Removal

MCPHS can act to remove a **student Respondent** from its education program or activities— partially or entirely—on an emergency basis when an individualized safety and risk analysis has determined that an immediate threat to the physical health or safety of any student or other individual justifies removal. The Title IX Coordinator, in conjunction with other MCPHS Officials, performs this risk analysis.

When an emergency removal is imposed, the student will be given notice of the action and the option to request to meet with the Title IX Coordinator within five (5) calendar days before such action/removal is imposed or as soon as reasonably possible thereafter, to show cause why the action/removal should not be implemented or should be modified.

This meeting is not a hearing on the merits of the allegation(s) but rather is an administrative process intended to determine solely whether the emergency removal is appropriate. When this meeting is not requested in a timely manner, objections to the emergency removal will be deemed waived. A Complainant and their Advisor may be permitted to participate in this meeting if the Title IX Coordinator determines it equitable to do so. There is no appeal process for emergency removal decisions.

Respondents may be accompanied by an Advisor of their choice when meeting with the Title IX Coordinator for the show-cause meeting. Prior to the meeting, the Respondent will be given access to a written summary of the basis for the emergency removal to allow for adequate preparation.

Under this policy, the Title IX Coordinator, in collaboration with other University Officials, can implement or modify an emergency removal and determine its conditions and duration. Violation of an emergency removal under this policy will be grounds for discipline within the student disciplinary processes, which may include expulsion.

MCPHS will implement the least restrictive emergency actions possible in light of the circumstances and safety concerns. As determined by the Title IX Coordinator, these actions could include but are not limited to removing a student from a residence hall, restricting a student's access to or use of facilities or equipment, allowing a student to withdraw or take incomplete grades without financial penalty, authorizing an administrative leave, and suspending a student's participation in extracurricular activities, student employment, student organizational leadership.

At the discretion of the Title IX Coordinator in coordination with other MCPHS Officials, alternative coursework options may be pursued to ensure as minimal an academic impact on the parties as possible.

When the Respondent is an employee or a student employee accused of sexual harassment in the course of their employment, existing provisions of the Employee Handbook and Faculty Manual for interim action are applicable at the University's discretion instead of the above emergency removal process.

13. Promptness

All allegations are promptly acted upon once MCPHS has received notice or a Formal Complaint. Complaints typically take 60-90 business days to resolve, excluding appeals. Exceptions and extenuating circumstances can cause a resolution to take longer, but the University will avoid undue delays within its control.

Any time the general timeframes for resolution outlined in the University's Resolution Process will be delayed, the Title IX Coordinator will provide written notice to the parties of the delay and the reason for the delay.

14. Confidentiality/Privacy

MCPHS makes every effort to preserve the confidentiality of reports.[5] The University will not share the identity of any individual who has made a report or Formal Complaint of sexual harassment or retaliation; any Complainant; any individual who has been reported to have engaged in sexual harassment or retaliation; or any witness, except as permitted by the Family Educational Rights and Privacy Act (FERPA)[6] or its implementing regulations;[7] or as required by law; or to carry out the purposes of 34 C.F.R. Part 106, including any investigation, hearing, or resolution proceeding arising under these policies and procedures.

MCPHS reserves the right to determine which University officials have a legitimate educational interest in being informed about incidents that fall under this Policy, pursuant to the Family Educational Rights and Privacy Act

(FERPA).

Only a small group of officials who need to know will typically be told about the complaint, including but not limited to the MCPHS President and Provost, the Office of Community Engagement, Student Affairs, Human Resources, MCPHS Public Safety, and local law enforcement agencies. Information will be shared with Investigators, Decision-makers, witnesses, and the parties as necessary. The circle of people with this knowledge will be kept as tight as possible to preserve the integrity of the process and the parties' rights and privacy.

The University may contact parents/guardians of students to inform them of situations in which there is a significant and articulable health and/or safety risk but will usually consult with the student first before doing so.

Confidentiality and mandated reporting are addressed more specifically below.

15. Time Limits on Reporting

There is no time limit on providing notice/complaints to the Title IX Coordinator. However, if the Respondent is no longer subject to the University's jurisdiction and/or significant time has passed, the ability to investigate, respond, and/or provide remedies may be more limited or impossible.

When notice/complaint is affected by significant time delay, MCPHS will typically apply the policy in place at the time of the alleged misconduct and the procedures in place at the time of notice/complaint.

16. Sexual Harassment

Students and employees are entitled to an employment and educational environment free of sexual harassment. This Policy is not meant to inhibit or prohibit educational content or discussions inside or outside of the classroom that include germane but controversial or sensitive subject matters protected by academic freedom.

The Department of Education's Office for Civil Rights (OCR), the Equal Employment Opportunity Commission (EEOC), the Massachusetts Commission Against Discrimination, and the New Hampshire, the New Hampshire Commission of Human Rights, and the U.S. Department of Housing and Urban Development (HUD/FHA) regard sexual harassment as an unlawful discriminatory practice.

The section below describes the specific forms of legally prohibited sexual harassment that are also prohibited under this Policy.[8] When speech or conduct is protected by academic freedom, it will not be considered a violation of the MCPHS Policy, though supportive measures will be offered to those impacted. All offense definitions encompass actual and/or attempted offenses.

Acts of sexual harassment may be committed by any person upon any other person, regardless of the sex of those involved.

Title IX Sexual Harassment, as an umbrella category, includes the offenses of sexual harassment, sexual assault, domestic violence, dating violence, and stalking. This definition applies to all formal complaints that fall within Title IX jurisdiction as determined by the Title IX Coordinator. Sexual harassment includes:

Conduct on the basis of sex, that satisfies one or more of the following:

1) Quid Pro Quo:
    a. an employee of the university,
    b. conditions[9] the provision of an aid, benefit, or service of the university,
    c. on an individual's participation in unwelcome sexual conduct.

2) Sexual Harassment (Hostile Environment):
    a. unwelcome conduct,
    b. determined by a reasonable person,
    c. to be so severe, and

d. pervasive, and,
e. objectively offensive,
f. that it effectively denies a Complainant equal access to the University's education program or activity

3) **Sexual Assault**, defined as:

a. Rape:
   - the penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without their consent.

b. Fondling:
   - the touching of the private body parts of another person for the purpose of sexual gratification, without their consent.

c. Incest:
   - Non-forcible sexual intercourse,
   - between persons who are related to each other,
   - within the degrees wherein marriage is prohibited by Massachusetts and New Hampshire law.

d. Statutory Rape:
   - Non-forcible sexual intercourse,
   - with a person who is under the statutory age of consent of sixteen (16).

4) **Dating Violence**, defined as:
a. violence,
b. on the basis of sex,
c. committed by a person,
d. who is in or has been in a social relationship of a romantic or intimate nature with the Complainant.
   i. The existence of such a relationship shall be determined based on the Complainant's statement and with consideration of the length of the relationship, the type of relationship, and the frequency of interaction between the persons involved in the relationship. For the purposes of this definition—
      a) Dating violence includes, but is not limited to, sexual or physical abuse or the threat of such abuse.
      b) Dating violence does not include acts covered under the definition of domestic violence.

4) **Domestic Violence**,[10] defined as:
a. violence,
b. on the basis of sex,
c. committed by a current or former spouse or intimate partner of the Complainant,
d. by a person with whom the Complainant shares a child in common or
e. by a person who is cohabitating with, or has cohabitated with, the Complainant as a spouse or intimate partner, or
f. by a person similarly situated to a spouse of the Complainant under the domestic or family violence laws of Massachusetts and New Hampshire or
g. by any other person against an adult or youth Complainant who is protected from that person's acts under the domestic or family violence laws of Massachusetts and New Hampshire.

5) **Stalking**, defined as:
a. engaging in a course of conduct,
b. on the basis of sex,
c. directed at the Complainant, that
   i. would cause a reasonable person to fear for the person's safety, or
   ii. the safety of others; or
   iii. Suffer substantial emotional distress.

For the purposes of this definition—

- Course of conduct means two or more acts, including, but not limited to, acts in which the Respondent directly, indirectly, or through third parties, by any action, method, device, or means, follows, monitors, observes, surveils, threatens, or communicates to or about a person, or interferes with a person's property.
- Reasonable person means a reasonable person under similar circumstances and with similar identities to the Complainant.
- Substantial emotional distress means significant mental suffering or anguish that may but does not necessarily require medical or other professional treatment or counseling.

MCPHS reserves the right to impose any level of sanction, ranging from a reprimand up to and including suspension or expulsion/termination, for any offense under this Policy. The most serious offenses are likely to result in suspension/expulsion/termination.

A. Force, Coercion, Consent, and Incapacitation

As used in the offenses above, the following definitions and understandings apply:

Force: Force is the use of physical violence and/or physical imposition to gain sexual access. Force also includes threats, intimidation (implied threats), and coercion that is intended to overcome resistance or produce consent.

Sexual activity that is forced is, by definition, non-consensual, but non-consensual sexual activity is not necessarily forced. Silence or the absence of resistance alone is not consent. Consent is not demonstrated by the absence of resistance. While resistance is not required or necessary, it is a clear demonstration of non-consent.

Coercion: Coercion is unreasonable pressure for sexual activity. Coercive conduct differs from seductive conduct based on factors such as the type and/or extent of the pressure used to obtain consent. When someone makes clear that they do not want to engage in certain sexual activity, that they want to stop, or that they do not want to go past a certain point of sexual interaction, continued pressure beyond that point can be coercive.

Consent is:

- knowing, and
- voluntary, and
- clear permission
- by word or action
- to engage in sexual activity.

Individuals may perceive and experience the same interaction in different ways. Therefore, it is the responsibility of each party to determine that the other has consented before engaging in the activity.

If consent is not clearly provided before engaging in the activity, consent may be ratified by word or action at some point during the interaction or thereafter, but clear communication from the outset is strongly encouraged.

For consent to be valid, there must be a clear expression in words or actions that the other individual consented to that specific sexual conduct. Reasonable reciprocation can be implied consent.

Consent can also be withdrawn once given, as long as the withdrawal is reasonably and clearly communicated. If consent is withdrawn, that sexual activity should cease within a reasonably immediate time.

Consent to some sexual contact (such as kissing or fondling) cannot be presumed to be consent for other sexual activity (such as intercourse). A current or previous intimate relationship is not sufficient to constitute consent. If an individual expresses conditions on their willingness to consent

(e.g., use of a condom) or limitations on the scope of their consent, those conditions and limitations must be respected.

Proof of consent or non-consent is not a burden placed on either party involved in a complaint. Instead, the burden remains on the University to determine whether its policy has been violated. The existence of consent is based on the totality of the circumstances evaluated from the perspective of a reasonable person in the same or similar circumstances, including the context in which the alleged misconduct occurred and any similar and previous patterns that may be evidenced.

Incapacitation: A person cannot consent if they are unable to understand what is happening or are disoriented, helpless, asleep, or unconscious for any reason, including due to alcohol or other drug consumption. As stated above, a Respondent violates this Policy if they engage in sexual activity with someone incapable of giving consent.

It is a defense to a sexual assault policy violation that the Respondent neither knew nor should have known the Complainant to be physically or mentally incapacitated. "Should have known" is an objective, reasonable person standard that assumes that a reasonable person is sober and exercising sound judgment.

Incapacitation occurs when someone cannot make rational, reasonable decisions because they lack the capacity to give knowing/informed consent (e.g., to understand the "who, what, when, where, why, and how" of their sexual interaction).

Incapacitation is determined through consideration of all relevant indicators of an individual's state and is not synonymous with intoxication, impairment, blackout, and/or being drunk. This Policy also covers a person whose incapacity results from a temporary or permanent physical or mental health condition, involuntary physical restraint, and/or the consumption of incapacitating substances.

17. Online Sexual Harassment and/or Retaliation

MCPHS policies are written and interpreted broadly to include online manifestations of any of the behaviors prohibited below, when those behaviors occur in or have an effect on the University's education program and activities, or when they involve the use of MCPHS networks, technology, or equipment.

Although MCPHS may not control websites, social media, and other venues through which sexually harassing communications are made, when such communications are reported to the University, it will engage in various means to address and mitigate the effects.

Members of the community are encouraged to be good digital citizens and to refrain from online misconduct, such as feeding anonymous gossip sites; sharing inappropriate content via social media; unwelcome sexual messaging; distributing, or threatening to distribute, nude or semi- nude photos or recordings; breaches of privacy; or otherwise using the ease of transmission and/or anonymity of the Internet or other technology to harm another member of the MCPHS community.

18. Retaliation[11]

Protected activity under this Policy includes reporting alleged misconduct that may implicate this Policy, participating in the resolution process, supporting a Complainant or Respondent, assisting in providing information relevant to an investigation, and/or acting in good faith to oppose conduct that constitutes a violation of this Policy. See the definition of retaliation here.

Acts of alleged retaliation should be reported immediately to the Title IX Coordinator and will be promptly investigated. MCPHS will take appropriate and available steps to protect individuals who fear that they may be subjected to retaliation.

MCPHS and any member of the University's community are prohibited from taking or attempting to take materially adverse action by intimidating, threatening, coercing, harassing, or discriminating against any individual to interfere with any right or privilege secured by law or policy or because the individual has made a report or complaint, testified, assisted, or participated or refused to participate in any manner in an

investigation, proceeding, or hearing under this Policy and the applicable resolution process.

Pursuing a violation for making a materially false statement in bad faith in the course of a resolution proceeding under this Policy and applicable resolution process does not constitute retaliation, provided that the determination of responsibility, by itself, is not sufficient to conclude that any party has made a materially false statement in bad faith.

19. Mandated Reporting

All MCPHS employees (faculty, staff, administrators) are expected to report actual or suspected sexual harassment or retaliation to appropriate University Officials with Authority immediately, although there are some limited exceptions.

It is important to know confidentiality and mandatory reporting requirements when consulting the university's resources to make informed choices. Within the MCPHS, some resources may maintain confidentiality and are not required to report actual or suspected sexual harassment or retaliation in a way that identifies the parties. They may offer options and resources without obligation to inform an outside agency or institution official unless a Complainant has requested the information be shared. Please see section A below to learn more about confidential resources.

If a Complainant expects formal action in response to their allegations, reporting to any Mandated Reporter can connect them with resources to report alleged crimes and/or policy violations. These employees will immediately pass reports to the Title IX Coordinator (and/or Public Safety, if desired by the Complainant or required by law), who will act when an incident is reported to them.

The following sections describe the MCPHS reporting options for a Complainant or third party (including parents/guardians when appropriate):

A. Confidential Resources

If a Complainant would like the details of an incident to be kept confidential, the Complainant may speak with:

- The MCPHS Confidential Resources Provider
- On-campus licensed professional counselors and staff
- Community-based (non-employees):
    - Licensed professional counselors and other medical providers
    - Local rape crisis counselors
    - Domestic violence resources
    - Local or state assistance agencies
    - Clergy/Chaplains
    - Attorneys

All of the above-listed individuals will maintain confidentiality when acting under the scope of their licensure, professional ethics, professional credentials, or official designation, except in extreme cases of the immediacy of threat or danger or abuse of a minor/elder/individual with a disability, or when required to disclose by law or court order.

The MCPHS Counseling Services and the Employee Assistance Program are available to help free of charge and may be consulted on an emergency basis during normal business hours.

Employees with confidentiality as described above and who receive reports within the scope of their confidential roles will timely submit anonymous statistical information for Clery Act purposes unless they believe it would harm their client, patient, or parishioner.

B. Mandated Reporters and Formal Notice/Complaints

All MCPHS employees (including student employees), except those designated as Confidential Resources, are Mandated Reporters and must promptly share with the Title IX Coordinator or

designee all known details of a report made to them during their employment.

Employees must also promptly share all details of behaviors under this Policy that they observe or have knowledge of, even if not reported to them by a Complainant or third party.

Generally, disclosures in climate surveys, classroom writing assignments or discussions, human subjects research, or at events such as “Take Back the Night” marches or speak- outs do not provide notice that must be reported to the Title IX Coordinator by employees unless the Complainant clearly indicates that they desire a report to be made or seek a specific response from the University.

Supportive measures may be offered due to such disclosures without formal University action.

Failure of a Mandated Reporter, as described above in this section, to report an incident of sexual harassment or related retaliation of which they become aware is a violation of the MCPHS Policy and can be subject to disciplinary action for failure to comply/failure to report.

Finally, it is important to clarify that a Mandated Reporter who is a target of sexual harassment and/or related retaliation under this Policy is not required to report their own experience. However, they are, of course, encouraged to do so.

20. When a Complainant Does Not Wish to Proceed

If a Complainant does not wish for their name to be shared, does not wish for an investigation to take place, and/or does not want a Formal Complaint to be pursued, they may make such a request to the Title IX Coordinator, who will evaluate that request in light of the duty to ensure the safety of the institution and to comply with state or federal law.

The Title IX Coordinator has ultimate discretion over whether the University proceeds when the Complainant does not wish to do so, and the Title IX Coordinator may sign a Formal Complaint to initiate a resolution process.

The Title IX Coordinator must consider the effect of non-participation by the Complainant on the availability of evidence and the University’s ability to pursue a Formal Resolution Process fairly and effectively.

When the Title IX Coordinator executes the written complaint, they do not become the Complainant. The Complainant is the individual who is alleged to be the recipient of the alleged conduct that could constitute a violation of this Policy.

When the MCPHS proceeds, the Complainant (and/or their Advisor) may have as much or as little involvement in the process as they wish. The Complainant retains all rights of a Complainant under this Policy irrespective of their level of participation.

MCPHS's ability to remedy and respond to a notice may be limited if the Complainant does not want the University to proceed with an investigation and/or resolution process. The goal is to provide the Complainant with as much control over the process as possible while balancing the University’s obligation to protect its community.

In cases where the Complainant requests confidentiality or no formal action and the circumstances allow the University to honor that request, the University may offer Informal Resolution options, supportive measures, and remedies to the Complainant and the community but will not otherwise pursue formal action.

If the Complainant elects to take no action, they can change that decision if they decide to pursue a Formal Complaint at a later date. Upon making a Formal Complaint, a Complainant has the right, and can expect, to have allegations taken seriously by MCPHS and to have the incident(s) investigated and properly resolved through these processes. Please consider that delays may cause limitations on access to evidence or present issues with respect to the status of the parties.

21. Federal Timely Warning Obligations

MCPHS must issue timely warnings for reported incidents that pose a serious or continuing threat of bodily

harm or danger to campus community members.

MCPHS will ensure that a Complainant's name and other identifying information is not disclosed while providing enough information for community members to make safety decisions in light of the potential danger.

22. False Allegations and Evidence

Deliberately false and/or malicious accusations under this Policy are a serious offense and will be subject to appropriate disciplinary action. This does not include allegations made in good faith but are ultimately shown to be erroneous or do not result in a policy violation determination.

Additionally, witnesses and parties knowingly providing false evidence, tampering with or destroying evidence, or deliberately misleading an official conducting an investigation, hearing, or informal resolution can be subject to discipline under appropriate MCPHS policies.

23. Amnesty

The MCPHS community encourages the reporting of misconduct and crimes by Complainants and witnesses. Sometimes, Complainants or witnesses are hesitant to report to University officials or participate in resolution processes because they fear that they may be in violation of certain policies, such as underage drinking or use of illicit drugs at the time of the incident.

Respondents may hesitate to be forthcoming during the process for the same reasons.

It is in the best interests of the MCPHS community that Complainants choose to report misconduct to University officials, that witnesses come forward to share what they know, and that all parties be forthcoming during the process.

To encourage reporting and participation in the process, MCPHS maintains a policy of offering parties and witnesses amnesty from minor policy violations–such as underage consumption of alcohol related to the incident.

Amnesty does not apply to more serious allegations, such as physical abuse of another or illicit drug distribution. The decision not to offer amnesty to a Respondent is not based on sex but on the fact that collateral misconduct is typically addressed for all students and employees within a progressive discipline system, and the rationale for amnesty – the incentive to report serious misconduct – is rarely applicable to the Respondent with respect to a Complainant.

A. Students

Sometimes, students are hesitant to assist others for fear that they may get in trouble themselves (for example, an underage student who has been drinking or using marijuana might hesitate to help an individual who has experienced sexual assault report the incident to the MCPHS Public Safety).

B. Employees

Sometimes, employees are hesitant to report sexual harassment or retaliation they have experienced for fear that they may get in trouble themselves. For example, an employee who has violated another MCPHS policy and is then assaulted in the course of that relationship might hesitate to report the incident to university officials.

MCPHS may, at its discretion, offer employee Complainants amnesty from such policy violations (typically more minor policy violations) related to the incident. Amnesty may also be granted to Respondents and witnesses on a case-by-case basis.

24. Federal Statistical Reporting Obligations

Certain institutional officials–those deemed Campus Security Authorities–have a duty to report the following

for federal statistical reporting purposes (Clery Act):

1) All "primary crimes," which include criminal homicide, rape, fondling, incest, statutory rape, robbery, aggravated assault, burglary, motor vehicle theft, and arson
2) Hate crimes, which include any bias-motivated primary crime as well as any bias- motivated larceny or theft, simple assault, intimidation, or destruction/damage/vandalism of property
3) VAWA-based crimes,[12] which include sexual assault, domestic violence, dating violence, and stalking
4) Arrests and referrals for disciplinary action for weapons-related law violations, liquor- related law violations, and drug law violations

All personally identifiable information is kept private, but statistical information must be shared with MCPHS Public Safety regarding the type of incident and its general location (on or off campus or in the surrounding area, but no addresses are given) for publication in the Annual Security Report and daily campus crime log. Campus Security Authorities include Public Safety, Human Resources, Student Affairs, Residence Life, Facilities, and other University officials who have "significant responsibility" for student and campus activities, including but not limited to student housing, student discipline, and campus judicial proceedings.

25. Preservation of Evidence

The preservation of evidence in incidents of sexual assault and stalking is critical to potential criminal prosecution and to obtaining restraining/protective orders and is particularly time- sensitive. MCPHS will inform the Complainant of the importance of preserving evidence by taking actions such as the following:

Sexual Assault

- Seek forensic medical assistance at the local hospitals, ideally within 120 hours of the incident (sooner is better).
- Avoid urinating, showering, bathing, washing hands or face, or douching, if possible, but evidence may still be collected even if you do.
- If oral sexual contact took place, refrain from smoking, eating, drinking, or brushing teeth.
- If clothes are changed, place soiled clothes in a paper bag (plastic destroys evidence).
- Seeking medical treatment can be essential, even if it is not to collect forensic evidence.

Stalking

- Evidence in the form of text and voice messages will be lost in most cases if the Complainant changes their phone number.
    - Make a secondary recording of any voice messages and/or save the audio files to a cloud server.
    - Take screenshots and/or a video recording of any text messages or other electronic messages (e.g., Instagram, Snapchat, Facebook).
- Save copies of e-mail and social media correspondence, including notifications related to account access alerts.
- Take timestamped photographs of any physical evidence, including notes, gifts, etc., in place when possible.
- Save copies of any messages, including those showing any request for no further contact.
- If possible, obtain copies of call logs showing the specific phone number being used rather than a saved contact name.

If timely, the importance of taking these actions will be discussed during the initial meeting between the complainant and the Title IX Coordinator.

26. Recordkeeping

Pursuant to this policy, MCPHS will maintain, for a period of at least seven years following the conclusion of the Sexual Harassment Resolution Process, records of:

1) Each sexual harassment investigation, including any determination regarding responsibility and

any audio or audiovisual recording or transcript required under federal regulation
2) Any disciplinary sanctions imposed on the Respondent
3) Any remedies provided to the Complainant designed to restore or preserve equal access to the MCPHS's education program or activity
4) Any appeal and the result therefrom
5) Any Informal Resolution and the result therefrom
6) All materials used to train the Title IX Coordinator, Investigators, Decision-makers, and any person who facilitates an Informal Resolution process. MCPHS will make these training materials publicly available on its website.
7) Any actions, including any supportive measures, taken in response to a report or Formal Complaint of sexual harassment, including:
    a. Any measures designed to restore or preserve equal access to the MCPHS's education program or activity
    b. If no supportive measures were provided to the Complainant, document the reasons why such a response was not clearly unreasonable in light of the known circumstances

MCPHS will also maintain any and all records in accordance with state and federal laws.[13]

27. Disability Accommodations in the Resolution Process

MCPHS is committed to providing reasonable accommodations and support to qualified students, employees, or others with disabilities to ensure equal access to the University's Resolution Process.

Students needing such accommodations or support should contact the Office of Student Access and Accommodations ("OSAA") or Human Resources if the person needing accommodations, is an employee. These offices will review the request and, in consultation with the person requesting the accommodation and the Title IX Coordinator in consultation with other University officials, as needed, determine which accommodations are appropriate and necessary for full participation in the process.

28. Revision of this Policy and Procedures

The MCPHS Protection from Sexual Harassment (Title IX) Policy and the Sexual Harassment Resolution Process supersede any previous policies and procedures addressing sexual harassment and/or related retaliation under Title IX. The Title IX Coordinator, in consultation with the

Office of Community Engagement, will review them annually or as needed based on changes in the law or court decisions. MCPHS reserves the right to make changes to this policy as necessary, and once those changes are posted online, they are in effect.

The Title IX Coordinator may make minor modifications to the policy that do not materially jeopardize the fairness owed to any party, such as accommodating academic and summer schedules.

If government laws or regulations change–or court decisions alter–the requirements in a way that impacts this policy, it will be construed to comply with the most recent government laws, regulations, or court holdings.

This policy does not create legally enforceable protections beyond the protections of the background state and federal laws that generally frame such policies.

This Policy is effective on April 10, 2025.

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[1] The University's policies relating to unwelcome sexual harassment and sexual misconduct are emailed annually to all members of the MCPHS community.
[2] Throughout this document, a reference about the Title IX Coordinator includes the Title IX Coordinator or a designee.
[3] Title IX does not require the university to designate a Confidential Resource Provider/Advisor. This requirement comes from the Massachusetts General Laws, Chapter 6, Section 168E and the New Hampshire law, 188-H7.
[4] Conduct occurring before August 14, 2020 can be resolved pursuant to the MCPHS Protection from Discrimination and Harassment Policy.
[5] For the purpose of this Policy, privacy and confidentiality have distinct meanings. **Privacy** means that information related to a complaint will be shared with a limited number of MCPHS employees who "need to know" in order to assist in the assessment, investigation, and resolution of the complaint. All employees who are involved in the MCPHS response to notice under this Policy receive specific training

and guidance about sharing and safeguarding private information in accordance with state and federal law. The privacy of student education records will be protected in accordance with the Family Educational Rights and Privacy Act (FERPA), as outlined in the MCPHS Student Handbook. Employee records' privacy will be protected per Human Resources policies. **Confidentiality** exists in the context of laws (including Title IX) that protect certain relationships, including those who provide services related to counseling and by the MCPHS Confidential Resource Provider. The law creates a privilege between certain healthcare providers, mental healthcare providers, attorneys, clergy, spouses, and others with their patients, clients, parishioners, and spouses. For more information about Confidential Resources, see page 24. When information is shared by a Complainant with a Confidential Resource, the Confidential Resource cannot reveal the information to any third party except when an applicable law or a court order requires or permits disclosure of such information. For example, information may be disclosed when: (1) the individual gives written consent for its disclosure; (2) there is a concern that the individual will likely cause serious physical harm to self or others; or (3) the information concerns conduct involving suspected abuse or neglect of a minor under the age of 18, elders, or individuals with disabilities. Non-identifiable information may be shared by Confidential Resources for statistical tracking purposes as required by the federal Clery Act. Other information may be shared as required by law.

[6] 20 U.S.C. 1232g

[7] 34 C.F.R. § 99

[8] Pursuant to federal law, there are different definitions of sexual harassment. Sexual Harassment that does not fall within the definition of Title IX Sexual Harassment above may fall within the MCPHS Protection from Discrimination and Harassment Policy, which defines sexual harassment as follows: MCPHS has adopted the following definitions of sexual harassment to address the unique environment of an academic community. Two definitions are required by federal law. While they overlap, they are not identical and apply, as noted.
Title VII/FHA Sexual Harassment applies to situations where an employee is subjected to workplace sexual harassment or where a situation involves a residential Complainant in MCPHS-provided housing.

a. Unwelcome verbal, written, graphic, and/or physical conduct;
b. that is severe or pervasive or objectively offensive;
c. on the basis of sex, that
d. unreasonably interferes with, limits, or effectively denies an individual's educational or employment access, benefits, or opportunities.

[9] Implicitly or explicitly.

[10] To categorize an incident as Domestic Violence under this Policy, the relationship between the Respondent and the Complainant must be more than just two people living together as roommates. The people cohabitating must be current or former spouses or have an intimate relationship.

[11] Retaliation allegations are reviewed pursuant to the University's Protection from Discrimination and Harassment Policy.

[12] VAWA is the Violence Against Women Act, enacted in 1994 and codified in part at 42 U.S.C. sections 13701 through 14040.

MCPHS-BOSTON

MCPHS–Boston
School of Arts and Sciences

Delia Castro Anderson, PhD, Professor of Biology, Associate Provost for Undergraduate Education and Dean

Kate Bresonis, PhD, Assistant Professor of English, Associate Dean and Director of Planning and Assessment

Matthew Konieczka, PhD, Associate Professor of Philosophy and Associate Dean

Amy Clinard, MS, Assistant Professor of Psychology and Assistant Dean

Joe DeMasi, PhD, Professor of Biology and Chair of the Department of Mathematics and Natural Sciences

Susan Gorman, PhD, Professor of English and Chair of the Department of Humanities and Social Sciences

Carly Levy, DHS, MPH, CPH, Associate Professor of Public Health and Chair of the Department of Public Health, Behavioral, and Health Sciences

J. Alex Trayford, MA, MPhil, Associate Dean of Pre-Health Advising

Marc Piquette, PhD, Chemistry Instrumentation Specialist

Professors Anderson, Bodwell, Briggs, Chang, Dacey (Emerita), DeMasi, Garafalo (Emeritus), Ginsburg (Emerita), Gorman, Griffin, Hart, Harvan, Ho, Kentner, Luca, Rainchuso, Richman, Spencer; Tanner (Ermeritus), Tebbe-Grossman (Emerita), Williams (Emeritus), Xie; Associate Professors Barden, Broadbelt, Denome (Emeritus), Ellis, Foye (Emerita), Gaines, Gardner, Kelley (Emeritus), Konieczka, Levy, Lewis, Nascarella, Parkhurst, Petersen, Potorti, Shifley, Tallon, Wade; Assistant Professors Bresonis, Clinard, Davis, Ginzburg, Gochan, Gordon, Hawkins, Heising, Humiston, Jana, Johnson, L., Kale, Lacina, Lee, Schultz, Tamakloe, Van Dellen; Instructors Bouchard, Casteel, Cole-French, Cross, Cutro, Gleeson, Greene, Grandy, Habershaw, Johnson, Lewis, Macy, Poulos, Peden, Roebuck, Schneider, Stokes,, Wagner; Faculty Associates Akgun, Barasso, Clark, Cooke, DePierro, Fateh, Futhey, Kamhine, Lindboom-Broberg, Peden, Vitagliano

Degree Programs

Bachelor of Arts in Health Humanities
Bachelor of Science in Biotechnology
Bachelor of Science in Chemistry
Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry
Bachelor of Science in Health Psychology
Bachelor of Science in Health Sciences
Bachelor of Science in Health Sciences Completion*
Bachelor of Science in Medical and Molecular Biology
Bachelor of Science in Premedical Health Studies
Bachelor of Science in Public Health
Bachelor of Science in Public Health/Master of Public Health*
Master of Health Sciences*
Master of Public Health*
Doctor of Health Sciences*
Graduate Certificate in Public Health*
Undergraduate Academic Bridge Program

* Boston and Online programs

Technical Standards for the School of Arts and Sciences*

The School of Arts and Sciences has specified the following nonacademic criteria (“technical standards”), which all students are expected to meet, with or without reasonable accommodation, to participate in the educational programs of the school.

Observation

Students must be able to carry out procedures involved in the learning process that are fundamental to the courses

offered at the University. Students are expected to actively participate in all demonstrations/laboratory exercises in the basic sciences, and to learn and function in a wide variety of didactic settings in science, humanities, and social and behavioral sciences courses. Such observation and information acquisition requires the functional use of visual, auditory, and somatic sensation. Students must have sufficient vision to be able to observe demonstrations, experiments, and laboratory exercises in the sciences, including computer-assisted instruction. They must be able to view images via a microscope.

Communication
Students must be able to communicate effectively in English with faculty, students, administrators, and peers in settings where communication is typically oral or written. They should be able to speak, hear, and observe in order to be effectively involved in the didactic learning process. They are expected to acquire, assimilate, interpret, integrate, and apply information from direct observation, oral communication, written messages, films, slides, microscopes, and other media.

Motor and Sensory
Students must possess sufficient motor function, fine motor skills, and sensory skills to perform the requirements identified in their respective professional career track. They should possess sufficient motor function to execute the necessary movements to participate in the laboratory portion of the science courses. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.

* These technical standards were adapted from *Report of the Special Advisory Panel on Technical Standards for Medical School Admission,* American Association of Medical Colleges, 2008.

Bachelor of Arts in Health Humanities

There is a growing recognition of the value of interdisciplinary humanities study as preparation for advanced graduate work and professional practice. With a focus on the study of creativity, cultural expression, and key concepts organizing human experience, a degree in Health Humanities fosters:

- imagination
- empathy
- critical thinking

Health Humanities study, practiced through the skills of reading, writing, research, and artistic expression:

- promotes self-awareness;
- brings critical perspective to the discourses of illness and wellness; and
- bridges gaps in communication and understanding amongst professional and lay audiences.

Drawing from existing resources, courses, and expertise, MCPHS offers a degree program combining study of health with the humanities, construed broadly to include literature, philosophy, the arts, history, anthropology, and sociology. Our baccalaureate degree program in Health Humanities will provide students with a rigorous program that will prepare them for further study and careers in clinical healthcare, public health and policy, law, education, social work, journalism, and related fields.

Students will satisfy their general education requirements. The Health Humanities Major consists of 12 required classes - 5 program requirements and 7 program electives. Students can take additional program requirements to satisfy their elective requirements if there is no significant replication of course material from previously taken program requirement classes as agreed to by the Program Director.

The program requirements are the following (one each):

- Introduction to health humanities
- A course on global health issues
- A course on anthropology, sociology, and history of health
- A course on narrative and health/medicine
- A capstone seminar

Majors can also enroll in a Directed Study course with a suitable curriculum, if a particular required course is unavailable. Program Director can permit the enrollment in a class not listed below to satisfy degree requirements per a student's request.

The Health Humanities major has elective openings that permit completion of minors. Incoming students who are interested in adding a specialization (e.g., a pre-med minor to prepare for graduate work in medicine) should speak to the program's director to make the appropriate changes to the curriculum map.

Curriculum: Bachelor of Arts in Health Humanities

Year I-fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
PBH 250	Introduction to Public Health	3
ITM 101	Introduction to the Major	1
CHE 113	Chemistry and Society	
CHE 113L	Chemistry and Society Lab ***OR***	
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
TOTAL		14

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
MAT 1XX	Math Course (any 100 level)	3
BIO 105	Concepts in Biology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
TOTAL		15

Year II-fall

COURSE	TITLE	CREDIT HOURS
HUM 230	Introduction to Health Humanities	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
	Program Requirement	3
	Humanities Elective	3
	General Elective	3
TOTAL		15

Year II-spring

COURSE	TITLE	CREDIT HOURS
	Program Requirement	3
	Program Elective	3
	General Elective	3
	General Elective	3
	General Elective	3
TOTAL		15

Year III-fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
	Program Requirement	3
	Program Elective	3
	General Elective	3
	General Elective	3
TOTAL		15

Year III-spring

COURSE	TITLE	CREDIT HOURS
	Program Elective	3
	Program Elective	3
	BEH Elective	3
	General Elective	3
	General Elective	3
	General Elective	3
TOTAL		18

Year IV-fall

COURSE	TITLE	CREDIT HOURS
	Program Elective	3
	SSC Elective	3
	General Elective	3
	General Elective	3
	General Elective	3
TOTAL		15

Year IV-spring

COURSE	TITLE	CREDIT HOURS
HUM 480	Health Humanities Capstone	3
	Program Elective	3
	Program Elective	3
	General Elective	3
	General Elective	3
TOTAL		15

Total number of credits to complete degree requirements: 122 credit hours

Available Courses for the Major at MCPHS and other institutions of the Colleges of the Fenway

Courses that satisfy the Introduction to Health Humanities component:

MCPHS	
HUM 230	Introduction to Health Humanities

Courses that satisfy the Global Health component:

MCPHS	
PBH 350	Global Health
Simmons University	
CHEM 221	Cultural Ecology and Sustainability (a travel course to Iceland)
SOCI 245	Global Health
WGST 200	Women, Nation, Culture

Courses that satisfy the Anthropology, Sociology, and History of Health component:

MCPHS	
SSC 230	Cultural Anthropology
SSC 356	Politics of Food
SSC 432	Medical Anthropology
SSC 495	Evolution of the Health Professions
SSC 444	Cigarettes in American Culture
SSC 349	Introduction to Women's and Gender Studies
SSC 354	The Family in Society
Simmons University	
AST/SOCI/WGST 232	Race, Gender and Health
SOCI 241	Health, Illness and Society
SOCI 275	Birth and Death
SOCI 249	Inequalities
SOCI 345	Health Systems and Policy
SOC 2200	Drug and Society

Courses that satisfy the Narrative and Health/Medicine component:

MCPHS	
HUM 340O	Cancer and Comic Books
HUM 375O	Modern Novels of the Afterlife
HUM 444	Creative Writing
HUM 450.AJO	Graphic Medicine
HUM 456	Narrative and Medicine (Narrative)
Wentworth Institute of Technology	
ETHS 3800-01	Literature and Madness
HUMN3800 (Special Topics)	Illness and Metaphor

Courses that satisfy the Program Elective component (7 total):

MCPHS	
BEH 250	Health Psychology
BEH 254	Death and Dying
BEH 260	Lifestyle Medicine
BEH 340	Psychology of Aggression
BEH 345	Myths and Misconception in Psychology
BEH 350	Abnormal Psychology
BEH 351	Social Psychology
BEH 352	Human Development through the Life Cycle
BEH 356	Gender Roles
BEH 357	Positive Psychology
BEH 358	Theories of Personalities
BEH 454	Stress and Illness
BEH 458	Child and Adolescent Development
HUM 355	Science, Technology and Values
PBH 335	Human Sexuality
PBH 450D	Public Health Perspectives on Trauma
PBH 430	Infectious Disease Epidemiology
PBH 432	Chronic Disease Epidemiology
Emmanuel College	
POLSC 2801	Food Policy and Social Justice
PHIL 3110	Philosophy of Psychiatry
HONOR 2503	Ethics and Mental Health
ECON 3113	Economics of Health Care
Simmons University	
PHIL 139	Environmental Ethics
PSYC 239	Psychology of Aging
PSYC 237N	Life Span Development
SW 251	Human Behavior in the Social Environment
Wentworth Institute of Technology	
PHIL 3800	Designing the Good Life
HUMN 3800 (Special Topics)	Greek and Roman Elements of Medical Terminology
PSYC 4160	Sports Psychology

Bachelor of Science in Biotechnology

The Bachelor of Science in Biotechnology program will equip students with a competitive advantage in a field with increasing demand. Graduates will be well-prepared for research and development roles or further studies at the graduate level. Students will discover how key biological concepts lead to the development of innovative healthcare products, therapies, and technologies in our four-year program based in Boston, the global hub of biotechnology and pharmaceutical innovation. Students will collaborate with peers from various disciplines and gain hands-on experience in our state-of-the-art laboratories working with the latest industry-standard technologies. Students will also explore internship opportunities, refine their communication skills, and build an academic foundation to kickstart a career or pursue advanced studies at the graduate level.

Curriculum: Bachelor of Science in Biotechnology

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3

LIB 120	Introduction to Psychology	3
ITM 101	Introduction to the Major	1
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152L	Biology II Laboratory	1
BIO 152	Biology II: Cell and Molecular Biology	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT 151	Calculus I	3
TOTAL		14

Year II—fall

COURSE	TITLE	CREDIT HOURS
BIO 255L	Medical Microbiology Laboratory	1
BIO 255	Medical Microbiology	3
BIO 260	Molecular Biology	3
CHE 231L	Organic Chemistry I Laboratory	1
CHE 231	Organic Chemistry I	3
MAT 261	Statistics	3
TOTAL		14

Year II—spring

COURSE	TITLE	CREDIT HOURS
BIO 440	Cell Biology	3
BTC 1XX	Biotechnology Seminar I	1
CHE 232L	Organic Chemistry II Laboratory	3
CHE 232	Organic Chemistry II	3
LIB.133	American Culture	3
MAT 261	Biostatistics	3
TOTAL		16

Year III—fall

COURSE	TITLE	CREDIT HOURS
BIO 360L	Cellular Biochemistry	4
BTC 320	Techniques in Biotech Lab I	3
DSC 110	Introduction to Data Science	3
HCM 255	Business and Career Communications	3
LIB 252	Introduction to Speech	3
TOTAL		16

Year III—spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
BTC 2XX	Biotechnology Seminar II	1
BTC 2XX	Industry Research and Development	3
BTC 321	Techniques in Biotech Lab II	3
LIB 512	Healthcare Ethics	3
	Biotechnology Elective	3
TOTAL		16

Year IV—fall and spring

COURSE	TITLE	CREDIT HOURS
	Behavioral Science Elective (BEH)	3
	Humanities Elective (HUM)	3

	Social Science Elective (SSC)	3
	Biotechnology Electives (courses and/or internship)	at least 15
	General Electives	7
TOTAL		31

*** Minimum 2.0 GPA for graduation*

Total credits to complete Bachelor of Science degree requirements: 120 credit hours

Biotechnology electives

Students must complete at least 18 credits from the list below which count toward Biotechnology Elective requirements. Students should check course prerequisites to ensure they are able to register for the course.

COURSE	TITLE
BIO 430	Molecular Biology of Cancer
BIO 434	Immunology
BIO 450	Your Inner Fish
BIO 455/L	Advanced Microbiology with Lab
BIO 470	The Biology of Obesity
BIO 530	Undergraduate Research Project
BTC XXX	Biotechnology Internship I (3-15 credits)
BTC XXX	Biotechnology Internship II (3-15 credits)
CHE 314/L	Analytical Chemistry with Lab
CHE 317/L	Instrumental Analysis with Lab
PSB 238	Introduction to Life Sciences and Medical Device Organizations
PSB 240	Introduction to Health Policy
PSB 335	Pharmaceutical Technology
PSB 340	Pharmaceutics I
PSB 341	Pharmaceutics II
PSB 346	Physicochemical Properties of Drug Molecules
PSB 375	Fundamentals of Drug Development
PSB 440	Molecular Biotechnology
PSB 460	Principles of Toxicology I
PSB 461	Principles of Toxicology II

Other MCPHS courses as approved by the Program Director
COF courses as approved by the Program Director

Bachelor of Science in Chemistry

The Bachelor of Science in Chemistry program is an undergraduate degree that prepares students for a number of employment and postgraduate study opportunities. These include entry-level laboratory positions; postgraduate certificate studies leading to careers in chemical, pharmaceutical, and biotech industry; graduate studies in chemistry and biochemistry leading to careers in research, industry, and education; and medical and professional schools' applications.

The curriculum design provides a broad foundation in chemistry. Major requirements in chemistry include organic chemistry, analytical chemistry, physical chemistry, inorganic chemistry, biochemistry, and stereochemistry. Additionally, this program design takes advantage of the university's strengths in the pharmaceutical sciences. Students will obtain experience in biotechnology techniques and will learn the principles of drug design and mechanism of action. In the fourth year, a pharmaceutical chemistry course will provide a synthetic capstone experience. Students will also be encouraged to participate in undergraduate research opportunities at the university or in research laboratories in the local area.

To remain in good academic standing in the Bachelor of Science in Chemistry program, students must maintain a cumulative 2.0 grade point average (GPA). To meet the residency requirement for the BS, students must complete at least 64 credit hours at the University.

Curriculum: Bachelor of Science in Chemistry

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133*	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120*	Introduction to Psychology	3
MAT 261	Statistics	3
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
	(HUM/SSC) Distribution Elective**	3
TOTAL		17

Year II—spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
CHE 314	Analytical Chemistry (with lab)	4
INF 210	Survey of Literature of Chemistry	1
LIB 252	Introduction to Speech	3
PHY284	Physics II	3
PHY 284L	Physics II Laboratory	1
TOTAL		16

Year III—fall

COURSE	TITLE	CREDIT HOURS
CHE 317	Instrumental Analysis	3
CHE 317	Instrumental Analysis Laboratory	1
CHE 365	Thermodynamics and Kinetics (with lab)	4
LIB 512	Healthcare Ethics	3
BIO 360	Cellular Biochemistry	4
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS
CHE 340	Inorganic Chemistry (with lab)	4
CHE 367	Quantum Mechanics and Molecular Structure	3
CHE 367L	Quantum Mechanics and Molecular Structure Laboratory	1
CHE 333L	Introductory Biochemistry Laboratory	1
CHE 755	Stereochemistry	3
	Distribution Elective**	3
TOTAL		15

Year IV—fall

COURSE	TITLE	CREDIT HOURS
CHE 731	Advanced Organic Chemistry	4
CHE 714	Spectrocscopic Analysis (with lab)	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
	Distribution Elective**	3
	Advanced Course	3
TOTAL		16

Year IV—spring

COURSE	TITLE	CREDIT HOURS
CHE 410	Undergraduate Chemistry Seminar	1
CHE 450	Pharmaceutical Chemistry I	3
CHE 445L	Experimental Methods in Chemistry	3
	Advanced Courses	5–6
TOTAL		12-13

** May be taken either semester*

*** One course from each of the three categories: HUM, SSC, BEH*

Total credits to complete Bachelor of Science degree requirements: 123 credit hours

Advanced CHE/BIO/PSB courses
*At least one of the three Advanced Courses must be a CHE course from this list.

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
BIO 430	Molecular Biology of Cancer	3
BIO 434	Immunology	3
BIO 440	Cell Biology	3
BIO 470	The Biology of Obesity	3
CHE 435	Green Chemistry (with lab)	3
CHE 437	Computational Methods in Chemistry	3
CHE 470	Characterization of Solids	3
CHE 530	Undergraduate Research Project	2
CHE 810	Heterocyclic Chemistry	2
PSB 460	Principles of Toxicology I	3
PSB 461	Principles of Toxicology II	3
PSB 802	Chemistry of Macromolecules	3
PSB 815	Drug Metabolism	3
PSB 820	Advanced Medicinal Chemistry I	3
PSB 851	Bio-organic Chemistry	2

Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry

The Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry program is designed for students who are interested in a career in chemistry. It allows students to obtain a bachelor's degree and a master's degree in five years instead of the six to seven years that it would take to complete two degrees separately. The curriculum design provides a broad foundation in chemistry. Major requirements include organic chemistry, analytical chemistry, physical chemistry, inorganic chemistry, biochemistry, stereochemistry, pharmaceutical chemistry, and heterocyclic chemistry at the graduate level. Additionally, this program is designed to take advantage of the University's strengths in the pharmaceutical sciences. Students will obtain experience in biotechnology techniques and will learn the principles of drug design and mechanism of action.

To remain in good academic standing in the Bachelor of Science in Chemistry program, students must maintain a cumulative 2.0 grade point average (GPA). To progress into the Master of Science program, students must apply at the end of their third year, successfully complete an interview, and have an overall GPA of at least 3.0, as well as a 3.0 or better GPA in all BIO, CHE, MAT, and PHY courses. Students must maintain a 3.0 GPA and get a B or better grade in each graduate level course to remain in good academic standing in the MS program. To meet the residency requirement for the BS, students must complete at least 64 credit hours at the University. All fourth- and fifth-year requirements for the MS degree must be completed at the University.

The BS/MS includes both a research project and an internship, ensuring that graduates will be prepared to work in chemical, pharmaceutical, and biotech industry, or pursue a PhD in chemistry or biochemistry. Students must be enrolled for two summers in order to complete the research project. There are two options to complete the research requirement, lab-based research and literature-based research. MS students have the opportunity to be teaching assistants. Students should understand that being a TA takes time from conducting research. If a student chooses to teach, it is not guaranteed that he/she can graduate on time. Students in the sixth year and beyond should register for CHE 895 Graduate Study Extension (0 Cr) for fall and spring semesters. Students have at most five years to complete the MS program, starting from the fall of their fourth year when they are admitted to the MS program.

Curriculum: Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120*	Introduction to Psychology	3

MAT 261	Statistics	3
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
	Distribution Elective	3
TOTAL		17

Year II—spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
CHE 314	Analytical Chemistry (with lab)	4
INF 210	Survey of Literature of Chemistry	1
LIB 252	Introduction to Speech	3
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1
TOTAL		16

Year III—fall

COURSE	TITLE	CREDIT HOURS
CHE 317	Instrumental Analysis (with lab)	4
CHE 365	Thermodynamics and Kinetics (with lab)	4
LIB 512	Healthcare Ethics	3
BIO 360	Cellular Biochemistry	4
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS
CHE 340	Inorganic Chemistry (with lab)	4
CHE 367	Quantum Mechanics and Molecular Structure	3
CHE 367L	Quantum Mechanics and Molecular Structure Laboratory	1
CHE 333L	Introductory Biochemistry Laboratory	1
CHE 755	Stereochemistry	3
	Distribution Elective	3
TOTAL		15

Master of Science in Pharmaceutical Chemistry Program

Graduate Year I—fall

COURSE	TITLE	CREDIT HOURS
CHE 731	Advanced Organic Chemistry	4
CHE 714	Spectroscopic Analysis (with lab)	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
	Distribution Elective	3
	Advanced Course	3
TOTAL		16

Graduate Year I—spring

COURSE	TITLE	CREDIT HOURS
CHE 445L	Experimental Methods in Chemistry	3
CHE 450	Pharmaceutical Chemistry I	3
CHE 710	Seminar	1
CHE 880	Research ***OR***	

CHE 885	Literature Based Research	3
	Advanced Courses (2)	4-6
TOTAL		14-16

*Graduate Year I—summer**

COURSE	TITLE	CREDIT HOURS
CHE 880	Research ***OR***	
CHE 885	Literature Based Research	3

Graduate Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 711	Seminar	1
CHE 751	Pharmaceutical Chemistry II (with lab)	4
CHE 810	Heterocyclic Chemistry	2
CHE 880	Research ***OR***	
CHE 885	Literature Based Research	3
TOTAL		10

*Graduate Year II—spring**

COURSE	TITLE	CREDIT HOURS
CHE825	Internship	9

*Graduate Year II—summer**

COURSE	TITLE	CREDIT HOURS
CHE 880	Research ***OR***	
CHE 885	Literature Based Research	3

**CHE 825 internship could be taken in either of the three semesters, G1–summer, G2–spring, or G2-summer. Research will be taken in the other two semesters.*

Total credits to complete BS/MS degree requirements: 150 credit hours

Advanced CHE/BIO/PSB Courses
*At least one of the three Advanced Courses must be a CHE course from this list.

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
BIO 430	Molecular Biology of Cancer	3
BIO 434	Immunology	3
BIO 440	Cell Biology	3
BIO 470	The Biology of Obesity	3
CHE 435	Green Chemistry (with lab)	3
CHE 437	Computational Methods in Chemistry	3
CHE 470	Characterization of Solids	3
CHE 530	Undergraduate Research Project	2
PSB 460	Principles of Toxicology I	3
PSB 461	Principles of Toxicology II	3
PSB 802	Chemistry of Macromolecules	3
PSB 815	Drug Metabolism	3
PSB 820	Advanced Medicinal Chemistry I	3
PSB 851	Bio-organic Chemistry	2

Bachelor of Science in Health Psychology

The role of behavioral factors in health promotion, disease prevention, treatment of illness, and health policy has become one of the most interesting and fast-developing topics in the arena of healthcare. In response to this phenomenon, the four-year Bachelor of Science in Health Psychology program was developed.

The Health Psychology major allows students the flexibility to prepare for bachelor-level careers across a variety of health-related and other occupational areas, or for further study in psychology, occupational therapy, physical therapy, public health, social work, medicine, and other professions. Through a three-course seminar series, students in the Health Psychology program explore career options; identify occupations that best fit their values, skills, and interests; and learn how to market themselves to potential employers and graduate admission committees.

One of only a few in the country, the MCPHS Health Psychology major produces graduates with a range of knowledge in psychology, a strong preparation in the basic sciences and liberal arts, and an informed sense of healthcare issues from other fields such as sociology, law, ethics, literature, history, and healthcare administration. Students receive training in research methods and statistics. In their last year, Health Psychology majors engage in individually tailored field placements in settings that allow students to apply their knowledge and receive practical experience.

Health Psychology majors have the option of choosing one of several minors. These minors develop depth of knowledge in a focal area that complements the interdisciplinary design of the degree program.

Curriculum: Bachelor of Science in Health Psychology (General Program)

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 151*	Biology I: Cell and Molecular Biology	3
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
MAT	Math course determined by placement	3
TOTAL		13

** After consultation with the program director, students may substitute BIO 110 and 210 (Anatomy and Physiology I and II) for BIO 151 and 152.*

Year I—spring

COURSE	TITLE	CREDIT HOURS
BEH 250	Health Psychology	3
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 197	Computer Applications	3
TOTAL		16

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	
CHE 110L	Basic Chemistry I Laboratory ***OR***	
CHE 113	Chemistry and Society	
CHE 113L	Chemistry and Society Lab ***OR***	
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
MAT 261	Statistics	3
PBH 250	Introduction to Public Health	3
	Two Additional Required Courses*	6
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
BEH 101	Health Psychology Seminar I	1
BEH 451	Research Methods in Health and Behavior	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 461	Biostatistics	3
	Two Additional Required Courses*	6
TOTAL		16

Year III—fall

COURSE	TITLE	CREDIT HOURS
BEH 456	Applications of Research Methods	3
LIB 512	Healthcare Ethics	3
	Three Additional Required Courses*	9
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS
BEH 102	Health Psychology Seminar II	1
PSB 412	Medical Patients' Rights and Professionals' Liabilities	3
	Four Additional Required Courses*	12
TOTAL		16

Year IV—fall

COURSE	TITLE	CREDIT HOURS
BEH 103	Health Psychology Seminar III	1
LIB 590	Health Psychology Field Placement I	3
	Four Additional Required Courses*	12
TOTAL		16

Year IV—spring

COURSE	TITLE	CREDIT HOURS
LIB 592	Health Psychology Capstone Seminar	3
	Three Additional Required Courses*	9
TOTAL		12

Total credits to complete Bachelor of Science degree requirements: 120 credit hours

***Additional Required Courses**

BEH 260 Lifestyle Medicine
BEH 341 Biological Psychology
BEH 350 Abnormal Psychology
BEH 352 Human Development
Two Health-Specific BEH Courses**
Two HUM Elective Courses
Two SSC Elective Courses
Eight General Elective Courses

****Health-Specific BEH Courses**

BEH 254 Death and Dying
BEH 331 The Patient Experience
BEH 353 Nutrition and Health
BEH 405 Mind/Body Medicine
BEH 454 Stress and Illness
BEH 457 Drugs and Behavior

Curriculum: Bachelor of Science in Health Psychology (Premedical (MD) Concentration)

The Bachelor of Science in Health Psychology Premedical (MD) Concentration provides students with a strong foundation in psychological science and an understanding of the role behavioral factors play in health promotion, disease prevention, treatment of illness, and health policy in addition to the prerequisite biology, chemistry, and physics courses needed to apply to medical school.

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Lab	1
BIO 151	Biology I: Cell and Molecular Biology	3
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
MAT 151	Calculus I	3
TOTAL		14

Year I—spring

COURSE	TITLE	CREDIT HOURS
BEH 250	Health Psychology	3
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
	One Additional Required Course	3
TOTAL		16

Year II–fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
MAT 261	Statistics	3
	One Additional Required Course*	3
TOTAL		14

Year II–spring

COURSE	TITLE	CREDIT HOURS
BEH 101	Health Psychology Seminar I	1
BEH 451	Research Methods in Health & Behavior	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 461	Biostatistics	3
	One Additional Required Course*	3
TOTAL		17

Year III—fall

COURSE	TITLE	CREDIT HOURS
BEH 456	Applications of Research Methods	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 512	Healthcare Ethics	3
PBH 250	Introduction to Public Health	3

	One Additional Required Course*	3
TOTAL		16

Year III—spring

COURSE	TITLE	CREDIT HOURS
BEH 102	Health Psychology Seminar II	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Lab	1
PSB 412	Medical Patients' Rights and Professionals' Liabilities	3
	Two Additional Required Courses*	6
TOTAL		14

Year IV—fall

COURSE	TITLE	CREDIT HOURS
BEH 103	Health Psychology Seminar III	1
BIO 360	Cellular Biochemistry	4
LIB 590	Health Psychology Field Placement	3
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
	One Additional Required Course*	3
TOTAL		15

Year IV—spring

COURSE	TITLE	CREDIT HOURS
LIB 592	Health Psychology Capstone Seminar	3
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1
	Three Additional Required Courses*	9
TOTAL		16

Total credits to complete Bachelor of Science in Health Psychology (Premedical (MD) Concentration) degree requirements: 122 credit hours.

Additional Required Courses

BEH 260 Lifestyle Medicine
BEH 341 Biological Psychology
BEH 350 Abnormal Psychology
BEH 352 Human Development Through Life Cycle
Two Health-Specific BEH Courses
One BIO 300 or 400-level Course
One HUM Elective
One SSC Elective
One General Elective

Health-Specific BEH Courses**

BEH 254 Death and Dying
BEH 331 The Patient Experience
BEH 353 Nutrition and Health
BEH 405 Mind/Body Medicine
BEH 454 Stress and Illness
BEH 457 Drugs and Behavior

Bachelor of Science in Health Psychology, Occupational Therapy Pathway

The BSHP/MSOT Pathway provides a route to occupational therapy for undergraduate Health Psychology students. The Pathway will allow students to earn a BSHP while completing pre-requisite courses for occupational therapy. In Year III, students apply for admission to the MCPHS School of Occupational Therapy on the Worcester or Manchester campus. If successfully admitted, students begin Year 1 of the MSOT Program, which also partially fulfills graduation

requirements for the BSHP. If students are not admitted to the MSOT Program, then they will move to the BSHP General Program to complete Year IV to fulfill requirements for the Bachelor of Science in Health Psychology degree.

Curriculum: Bachelor of Science in Health Psychology, Occupational Therapy Pathway

Year I–fall

COURSE	TITLE	CREDIT HOURS
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
MAT	Math course Determined by Placement	3
MAT 197	Computer Applications	3
TOTAL		13

Year I–spring

COURSE	TITLE	CREDIT HOURS
BEH 101	Health Psychology Seminar I	1
BEH 250	Health Psychology	3
BEH 352	Human Development	3
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
TOTAL		16

Year II–fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
CHE 110	Basic Chemistry I	
CHE 110L	Basic Chemistry I Laboratory ***OR***	
CHE 113	Chemistry and Society	
CHE 113L	Chemistry and Society Lab ***OR***	
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
PBH 250	Introduction to Public Health	3
	Two Additional Required Courses*	6
TOTAL		17

Year II–spring

COURSE	TITLE	CREDIT HOURS
BEH 102	Health Psychology Seminar II	1
BEH 451	Research Methods in Health & Behavior	3
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
	Two Additional Required Courses*	6
TOTAL		17

Year III–fall

COURSE	TITLE	CREDIT HOURS
BEH 103	Health Psychology Seminar III	1
BEH 456	Applications of Research Methods	3
LIB 512	Healthcare Ethics	3
LIB 590	Field Placement I (Pass/Fail)	3
	Two Additional Required Courses*	6

TOTAL		16

Year III–spring

COURSE	TITLE	CREDIT HOURS
BIO 345O	Exercise Physiology (with lab)	4
LIB 592	Health Psychology Capstone	3
PSB 412	Medical Patients' Rights	3
	One Additional Required Course*	3
TOTAL		13

Additional Required Courses

BEH 260 Lifestyle Medicine
BEH 341 Biological Psychology
BEH 350 Abnormal Psychology
BEH 458 Child and Adolescent Development (required for MSOT pathway students only)
One Health-Specific BEH Course**
One HUM Elective Course
One SSC Elective Course

Health-Specific BEH Courses**

BEH 254 Death and Dying
BEH 331 The Patient Experience
BEH 353 Nutrition and Health
BEH 405 Mind/Body Medicine
BEH 454 Stress and Illness
BEH 457 Drugs and Behavior

Students accepted into the Master of Science in Occupational Therapy Program begin the MSOT curriculum at this point.

Occupational Therapy Program

Occupational Therapy Year I – fall

COURSE	TITLE	CREDIT HOURS
OTH 500	Contemporary Theory in Occupational Therapy Practice	3
OTH 505	Clinical Reasoning in Occupational Therapy	3
OTH 510	Practice Engagement: Mental Health	3
OTH 511	Practice Engagement: Therapeutic Groups	3
OTH 520	Scholarship in Practice: Evidence-Based Practice	3
TOTAL		15

Occupational Therapy Year I –spring

COURSE	TITLE	CREDIT HOURS
OTH 525	Practice Engagement: Environments and Technology (with lab)	4
OTH 530	Motor Performance Across the Lifespan (with lab)	4
OTH 535	Scholarship in Practice: Methodologies	3
OTH 540	Practice Engagement: Assessment Fundamentals Across the Lifespan	3
OTH 565	Apprenticeship: Community Mental Health (Level I)	3
TOTAL		17

Total credits to complete Bachelor of Science in Health Psychology degree requirements: 124 credit hours. Students will continue with successful completion of the MSOT Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Health Psychology standard curriculum. The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **120-credit hour graduation requirement**.

Bachelor of Science in Health Psychology, Physical Therapy Pathway

The BSHP/DPT Pathway provides a route to physical therapy for undergraduate Health Psychology students. The Pathway will allow students to earn a BSHP while completing pre-requisite courses for physical therapy. In Year III, students apply for admission to the MCPHS School of Physical Therapy on the Worcester campus. If successfully admitted, students begin Year 1 of the DPT Program, which also partially fulfills graduation requirements for the BSHP.

If students are not admitted to the DPT Program, then they will move to the BSHP General Program to complete Year IV to fulfill requirements for the Bachelor of Science in Health Psychology degree.

Curriculum: Bachelor of Science in Health Psychology, Physical Therapy Pathway

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Lab	1
BIO 151	Biology I: Cell and Molecular Biology	3
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
MAT 151	Calculus I	3
TOTAL		14

Year I—spring

COURSE	TITLE	CREDIT HOURS
BEH 101	Health Psychology Seminar I	1
BEH 250	Health Psychology	3
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
	Additional Required Course	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
MAT 261	Statistics	3
	Three Additional Required Courses*	9
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
BEH 102	Health Psychology Seminar II	1
BEH 451	Research Methods in Health and Behavior	3
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
	Two Additional Required Courses*	6
TOTAL		17

Year III—fall

COURSE	TITLE	CREDIT HOURS
BEH 103	Health Psychology Seminar III	1
BIO 351	Advanced Anatomy and Physiology I (with lab)	4
LIB 512	Healthcare Ethics	3
LIB 590	Health Psychology Field Placement I	3
PHY 270/272L	Foundations of Physics I (with lab)	4
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS

BIO 345O/345OL	Exercise Physiology (with lab)	4
BIO 352/352L	Advanced Anatomy and Physiology II (with lab)	4
PHY 274	Foundations of Physics II	3
PHY 274L	Foundations of Physics II Laboratory	1
	One Additional Required Course*	3
TOTAL		15

Additional Required Courses*

BEH 260 Lifestyle Medicine
BEH 341 Biological Psychology
BEH 350 Abnormal Psychology
BEH 352 Human Development Through Life Cycle
One Health-Specific BEH Course
One HUM Elective
One SSC Elective

Health-Specific BEH Courses**

BEH 254 Death and Dying
BEH 331 The Patient Experience
BEH 353 Nutrition and Health
BEH 405 Mind/Body Medicine
BEH 454 Stress and Illness
BEH 457 Drugs and Behavior

Students accepted into the Doctor of Physical Therapy Program begin the DPT curriculum at this point.

Doctor of Physical Therapy Program

Doctor of Physical Therapy Year I-fall

COURSE	TITLE	CREDIT HOURS
PTH 501	PT as a Profession	2
PTH 510	Foundations of PT Management I (with lab)	3
PTH 520	Clinical Medicine and Pathology I	3
PTH 530	Clinical Human Anatomy I (with lab)	6
PTH 570	Integrated Clinical Education I	2
TOTAL		16

Doctor of Physical Therapy Year I-spring

COURSE	TITLE	CREDIT HOURS
PTH 515	Foundations of PT Management II (with lab)	3
PTH 525	Clinical Medicine and Pathology II	2
PTH 540	Evidence for PT Practice I	2
PTH 558	Clinical Kinesiology (with lab)	3
PTH 560	Standardized Measurement in PT Practice (with lab)	2
PTH 585	Neuroscience (with lab)	4
PTH 575	Integrated Clinical Education II	2
TOTAL		18

Total credits to complete Bachelor of Science in Health Psychology degree requirements: 128 credit hours. Students will continue with successful completion of the DPT Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Health Psychology standard curriculum.

The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **120-credit hour graduation requirement**.

Bachelor of Science in Health Sciences

The mission of the entry-level Bachelor of Science in Health Sciences (BSHS) 4-year program is to provide a strong foundation of general education, health sciences, and core competence for a range of non-clinical and clinical health careers.

The goals of the entry-level BSHS 4-year program are to provide:

- an opportunity for students to earn a BS in Health Sciences, with a broad foundational knowledge base in math and the basic biological, chemical, social, and behavioral health sciences;
- opportunities for the development and demonstration of interpersonal, oral and written communications, critical thinking, information literacy, and research design skills;
- a comprehensive general education that includes an understanding of healthcare delivery, healthcare ethics, and interpersonal communications in healthcare;
- a broad introduction to applied health sciences in health wellness and promotion, health systems navigation, leadership and teamwork, health and safety, health equity, public health and policy, and health services research;
- curricular and experiential opportunities for students to explore the wide range of clinical and non-clinical career options in the healthcare industry; and
- individualized academic advising and career mentoring for students who are undecided about their preferred health sciences career pathway; for students who are interested in career in health promotion and certification eligibility as Health Education Specialists; and for students who are interested in preparing for admissions to post-baccalaureate programs of study in healthcare professions.

NOTE: Students are admitted to the Bachelor of Science in Health Sciences – General Program. Students may decide to remain in the General Program or select and declare the Bachelor of Science in Health Sciences - Health Education and Promotion Concentration to pursue the Certified Health Education Specialist (CHES) certification from the National Commission for Health Education Credentialing (www.nchec.org) eligibility.

Curriculum: Bachelor of Science in Health Sciences (General Program)

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO110	Anatomy & Physiology I	3
BIO110L	Anatomy & Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 210	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences	3
TOTAL		14

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HSC 110	Health Sciences Seminar I	1
LIB 112	Writing in the Humanities	3
	Math Requirement (100-level)	3
	Social Sciences Elective (SSC)	3
TOTAL		14

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
HSC 220	Personal Health and Wellness	3
LIB 512	Healthcare Ethics	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 261	Statistics	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Lab	1
HSC 210	Health Sciences Seminar II	1
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 410	Health Research Methods	3
	Humanities Elective (HUM)	3
TOTAL		14

Year III—fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Lab	1
HSC 301	Health Promotion	3
HSC 305	Navigating Health Systems	3
HSC 308	Healthcare Leadership and Teamwork	3
	General Elective	3
TOTAL		16

Year III—spring

COURSE	TITLE	CREDIT HOURS
HSC 311	Health Sciences Seminar III	1
HSC 401	Public Health and Policy	3
HSC 340	Health and Safety	3
	Health Sciences Elective (HSC)	3
	Behavioral Sciences Elective (BEH)	3
	General Elective	3
TOTAL		16

Year IV— fall

COURSE	TITLE	CREDIT HOURS
HSC 470	Health Sciences Practicum	3
	Health Sciences Elective (HSC)	3
	Health Sciences Elective (HSC)	3
	General Elective	3
	General Elective	3
TOTAL		15

Year IV—spring

COURSE	TITLE	CREDIT HOURS
HSC 490	Health Sciences Capstone	3
	Health Sciences Elective (HSC)	3
	Health Sciences Elective (HSC)	3
	General Elective	3
	General Elective	3
TOTAL		15

Total credits to complete Bachelor of Science in Health Sciences degree requirements: 120 credit hours. *Students may select any HSC course to fulfill Health Sciences Electives. Other courses may be approved by the Program Director.*

Curriculum: Bachelor of Science in Health Sciences (Health Education and Promotion Concentration)

Students in the BS Health Sciences (General Program) can concentrate in Health Education and Promotion. Graduates of the BSHS/Health Education and Promotion Concentration are prepared to sit for the Certified Health

Education Specialist (CHES) credentialing exam, which is offered by the National Commission for Health Education Credentialing (NCHEC – www.nchec.org).

Students will select the following courses as Health Sciences Electives (HSC) as noted in the curricular grid above:

- HSC 315 Planning Health Education and Promotion Programs
- HSC 330 Advocacy and Leadership in Health Education and Promotion
- HSC 355 Contemporary Topics in Health Education and Promotion
- HSC 421 Assessing Community Health Needs
- HSC 460 Health Communication, Literacy, and Disparities

Bachelor of Science in Health Sciences, Occupational Therapy Pathway

The BSHS/MSOT Pathway provides a route to occupational therapy for undergraduate Health Sciences students. The Pathway will allow students to earn a BSHS while completing pre-requisite courses for occupational therapy. In Year III, students apply for admission to the MCPHS School of Occupational Therapy on the Worcester or Manchester campus. If successfully admitted, students begin Year 1 of the MSOT Program, which also partially fulfills graduation requirements for the BSHS. If students are not admitted to the MSOT Program, then they will move to the BSHS General Program to complete Year IV to fulfill requirements for the Bachelor of Science in Health Sciences degree.

Curriculum: Bachelor of Science in Health Sciences, Occupational Therapy Pathway

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO110	Anatomy & Physiology I	3
BIO110L	Anatomy & Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		14

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HSC 110	Health Sciences Seminar I	1
LIB 112	Writing in the Humanities	3
MAT 141	Algebra and Trigonometry	3
	Social Sciences Elective (SSC)	3
TOTAL		14

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
HSC 220	Personal Health and Wellness	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Lab	1

HSC 210	Health Sciences Seminar II	1
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 410	Health Research Methods	3
	Humanities Elective (HUM)	3
TOTAL		14

Year III—fall

COURSE	TITLE	CREDIT HOURS
BEH 352	Human Development through the Life Cycle	3
BIO 345/	Exercise Physiology	3
BIO 345L	Exercise Physiology Lab	1
HSC 301	Health Promotion	3
HSC 305	Navigating Healthcare Systems	3
HSC 308	Healthcare Leadership and Teamwork	3
TOTAL		16

Year III—spring

COURSE	TITLE	CREDIT HOURS
BEH 350	Psychopathology and Mental Health Sciences	3
BEH 458	Child Development	3
HSC 311	Health Sciences Seminar III	1
HSC 340	Health and Safety	3
HSC 401	Public Health and Policy	3
	Health Sciences Elective (HSC)	3
TOTAL		16

Students accepted into the Master of Science in Occupational Therapy Program begin the MSOT curriculum at this point.

Occupational Therapy Program

Year IV— fall

COURSE	TITLE	CREDIT HOURS
OTH 500	Contemporary Theory in Occupational Therapy Practice	3
OTH 505	Clinical Reasoning in Occupational Therapy	3
OTH 510	Practice Engagement: Mental Health	3
OTH 511	Practice Engagement: Therapeutic Groups	3
OTH 520	Scholarship in Practice: Evidence-Based Practice	3
TOTAL		15

Year IV —spring

COURSE	TITLE	CREDIT HOURS
OTH 525	Practice Engagement: Environments and Technology (with lab)	4
OTH 530	Motor Performance across the Lifespan (with lab)	4
OTH 535	Scholarship in Practice: Methodologies	3
OTH 540	Practice Engagement: Assessment Fundamentals across the Lifespan	3
OTH 565	Apprenticeship: Community Mental Health (Level I)	3
TOTAL		17

Total credits to complete Bachelor of Science in Health Sciences degree requirements: 122 credit hours. Students will continue with successful completion of the MSOT Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Health Sciences standard curriculum. The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **120-credit hour graduation requirement**.

Bachelor of Science in Health Sciences, Acupuncture Pathway

The BSHS/MAc Pathway provides a route to acupuncture for undergraduate Health Sciences students. The Pathway will allow students to earn a BSHS while completing pre-requisite courses for acupuncture. In Year III, students apply

for admission to the MCPHS New England School of Acupuncture on the Worcester campus. If successfully admitted, students begin Year 1 of the MAc Program, which also partially fulfills graduation requirements for the BSHS. If students are not admitted to the MAc Program, then they will move to the BSHS General Program to complete Year IV to fulfill requirements for the Bachelor of Science in Health Sciences degree.

Curriculum: Bachelor of Science in Health Sciences, Acupuncture Pathway

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO110	Anatomy & Physiology I	3
BIO110L	Anatomy & Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		14

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HSC 110	Health Sciences Seminar I	1
LIB 112	Writing in the Humanities	3
	Math Requirement at the 100-level (MAT)	3
	Social Sciences Elective (SSC)	3
TOTAL		14

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
HSC 220	Personal Health and Wellness	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Lab	1
HSC 210	Health Sciences Seminar II	1
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 410	Health Research Methods	3
	Humanities Elective (HUM)	3
TOTAL		14

Year III—fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology (lab not required)	3
HSC 301	Health Promotion	3
HSC 305	Navigating Healthcare Systems	3
HSC 308	Healthcare Leadership and Teamwork	3

	General Elective	3
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Lab	1
HSC 311	Health Sciences Seminar III	1
HSC 340	Health and Safety	3
HSC 401	Public Health and Policy	3
	Behavioral Sciences Elective (BEH)	3
	Health Sciences Elective (HSC)	3
TOTAL		17

Students accepted into the Master of Science in Acupuncture Program begin the MAc curriculum at this point.

Curriculum: Master of Acupuncture (MAc)

Year IV — fall

COURSE	TITLE	CREDIT HOURS
ACP 501	Acupuncture Patient-Centered Care	1
SACAS 511	Traditional Chinese Medicine Theory I	4
SACAS 512	Point Location I	2.5
SACAS 513	Materials and Methods of TCM I	2
SASCI 517	Integrated Anatomy I	2
SACAS 519	Self-Care I	1
SACAS 510	History of Chinese Medicine	1
SACLC 511	Clinical Assistantship I	1
SASCI 511	Anatomy & Physiology I	3
TOTAL		17.5

Year IV — spring

COURSE	TITLE	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4
SACAS 525	Point Location II	2.5
SACAS 526	Materials and Methods of TCM II	2
SASCI 527	Integrated Anatomy II	2
SAJAS 521	Japanese Acupuncture I	2
SACHM 520	Introduction to Chinese Herbal Medicine	2
SACLC 522	Clinical Assistantship II	1
SASCI 522	Anatomy & Physiology II	3
SASCI 511L	Anatomy & Physiology Lab	1
TOTAL		19.5

Total credits to complete Bachelor of Science in Health Sciences degree requirements: 127 credit hours. Students will continue with successful completion of the MAc Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Health Sciences standard curriculum.

The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **120-credit hour graduation requirement**.

Curriculum: Master of Acupuncture and Chinese Herbal Medicine (MAc CHM)

Year IV — fall

COURSE	TITLE	CREDIT HOURS
SACAS 511	Traditional Chinese Medicine Theory I	4

SACAS 512	Point Location I	2.5
SACAS 513	Materials and Methods of TCM I	2
ACP 501	Acupuncture Patient-Centered Care	1
SASCI 517	Integrated Anatomy I	2
SACAS 519	Self-Care I	1
SACAS 510	History of Chinese Medicine	1
SACLC 511	Clinical Assistantship I	1
SASCI 511	Anatomy and Physiology I	3
TOTAL		17.5

Year IV— spring

COURSE	TITLE	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4
SACAS 525	Point Location II	2.5
SACAS 526	Materials and Methods of TCM II	2
SASCI 527	Integrated Anatomy II	2
SAJAS 521	Japanese Acupuncture I	2
SACHM 520	Introduction to Chinese Herbal Medicine	2
SACLC 522	Clinical Assistantship II	1
SASCI 522	Anatomy and Physiology II	3
SASCI 511L	Anatomy and Physiology Lab	1
TOTAL		19.5

Total credits to complete Bachelor of Science in Health Sciences degree requirements: 127 credit hours. Students will continue with successful completion of the MAc CHM Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Health Sciences standard curriculum.

The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **120-credit hour graduation requirement**.

Bachelor of Science in Health Sciences, Physical Therapy Pathway

The BSHS/DPT Pathway provides a route to physical therapy for undergraduate Health Sciences students. The Pathway will allow students to earn a BSHS while completing pre-requisite courses for physical therapy. In Year III, students apply for admission to the MCPHS School of Physical Therapy on the Worcester campus. If successfully admitted, students begin Year 1 of the DPT Program, which also partially fulfills graduation requirements for the BSHS. If students are not admitted to the DPT Program, then they will move to the BSHS General Program to complete Year IV to fulfill requirements for the Bachelor of Science in Health Sciences degree.

Curriculum: Bachelor of Science in Health Sciences, Physical Therapy Pathway

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy & Physiology I	3
BIO 110L	Anatomy & Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		14

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy & Physiology II	3

BIO 210L	Anatomy & Physiology II Lab	1
HSC 110	Health Sciences Seminar	1
HSC 220	Personal Health and Wellness	3
LIB 112	Writing in the Humanities	3
MAT 150 **OR** 151	Precalculus **OR** Calculus I	3
	Social Sciences Elective (SSC)	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology (lab not required)	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Lab	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 151 **OR** BEH	Calculus I (if not yet taken) **OR** Behavioral Sciences Elective (BEH)	3
MAT 261	Statistics	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems (lab not required)	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Lab	1
HSC 210	Health Sciences Seminar II	1
HSC 410	Health Research Methods	3
HSC 360	Cultural Engagement and Health Outcomes	3
TOTAL		14

Year III—fall

COURSE	TITLE	CREDIT HOURS
HSC 301 **OR** 305	Health Promotion **OR** Navigating Healthcare Systems	3
HSC 308	Healthcare Leadership and Teamwork	3
LIB 512	Healthcare Ethics	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
PTH 310	Functional Anatomy	3
TOTAL		16

Year III—spring

COURSE	TITLE	CREDIT HOURS
HSC 311	Health Sciences Seminar III	1
HSC 340 **OR** 401	Health and Safety **OR** Public Health and Policy	3
PHY 274	Foundations of Physics II	3
PHY 274L	Foundations of Physics II Laboratory	1
BIO 345	Exercise Physiology	4
BIO 345L	Exercise Physiology Lab	1
	Humanities Elective (HUM)	3
	Behavioral Science Elective (BEH) (if not yet taken)	3
TOTAL		15-18

Students accepted into the Doctor of Physical Therapy Program begin the DPT curriculum at this point.

Doctor of Physical Therapy Program

Year IV—fall

COURSE	TITLE	CREDIT HOURS
PTH 501	PT as a Profession	2
PTH 510	Foundations of PT Management I (with lab)	3
PTH 520	Clinical Medicine and Pathology I	3
PTH 530	Clinical Human Anatomy I (with lab)	6
PTH 570	Integrated Clinical Education I	2
TOTAL		16

Year IV—spring

COURSE	TITLE	CREDIT HOURS
PTH 515	Foundations of PT Management II (with lab)	3
PTH 525	Clinical Medicine and Pathology II	2
PTH 540	Evidence for PT Practice I	2
PTH 558	Clinical Kinesiology (with lab)	3
PTH 560	Standardized Measurement in PT Practice (with lab)	2
PTH 585	Neuroscience (with lab)	4
PTH 575	Integrated Clinical Education II	2
TOTAL		18

Total credits to complete Bachelor of Science in Health Sciences degree requirements: 126-129 credit hours. Students will continue with successful completion of the DPT Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Health Sciences standard curriculum.

The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **120-credit hour graduation requirement**.

Bachelor of Science in Health Sciences/Bachelor of Science in Nursing Dual Degree

The Bachelor of Science in Health Sciences (BSHS)/Bachelor of Science in Nursing (BSN) Dual Degree program provides a pathway to Nursing for students studying Health Sciences. The program will allow students to earn a BSHS while at the same time completing some BSN courses that can then be used in the BSN Program. The only students who will be considered for this dual degree option are those who can fully complete prerequisites prior to matriculation. Further information may be found in the MCPHS–Boston: School of Nursing section of the Catalog.

Bachelor of Science in Health Sciences/Bachelor of Dental Hygiene Dual Degree

The Bachelor of Science in Health Sciences (BSHS)/Bachelor of Science in Dental Hygiene (BSDH) Dual Degree program provides a pathway to Dental Hygiene for students studying Health Sciences. The program will allow students to earn a BSHS while at the same time completing some BSDH courses that can then be used in the BSDH Program. The only students who will be considered for this dual degree option are those who can fully complete prerequisites prior to matriculation. Further information may be found in the MCPHS–Boston: Forsyth School of Dental Hygiene section of the Catalog.

Bachelor of Science in Health Sciences/Bachelor of Science in Medical Imaging and Therapeutics Dual Degree

The Bachelor of Science in Health Sciences (BSHS)/Bachelor of Science in Medical Imaging and Therapeutics Dual Degree program provides a pathway to Medical Imaging and Therapeutics BS degrees for students studying Health Sciences. The program will allow students to earn a BSHS while at the same time completing some School of Medical Imaging and Therapeutics *SMIT) courses that can then be used in the SMIT Program. The only students who will be considered for this dual degree option are those who can fully complete prerequisites prior to matriculation. Further information may be found in the MCPHS–Boston: School of Medical Imaging and Therapeutics section of the Catalog.

Bachelor of Science in Health Sciences Completion, Online

The Health Sciences degree completion option is designed for transfer students with an earned associate degree in an allied health discipline such as dental hygiene, radiography, or respiratory therapy and who possess current registration, certification, or licensure.

Prerequisites

- An associate degree in an allied health discipline from a programmatically and/or regionally accredited institution
- Current registration, certification, or licensure in an allied health discipline
- A recommended cumulative GPA of 2.5 or higher

Curriculum

ARTS AND SCIENCES COURSES

Associate degree applicants will have met all or most of the Arts and Sciences general education course requirements. Minimum of 40 credits is required (as listed below). Students may complete missing general education course requirements at MCPHS.

Introduction to Psychology	3
Composition (Expository Writing)	6
Introduction to Interpersonal Communication	3
Introduction to Social Sciences	3
Healthcare Ethics	3
Life Science	3
Chemistry with lab	4
Math	3
Statistics	3
Behavioral Sciences Elective	3
Humanities Elective	3
Social Sciences Elective	3

***HEALTH SCIENCES TRANSFER* (Associate Degree transfer credits)**

All students transferring into the MCPHS Online Bachelor of Science in Health Sciences program will receive up to 40 credits from professional coursework completed toward their associate degree in a health science program. These transfer credits are applied toward the required health sciences concentration and elective portion of this program.

HEALTH SCIENCES MAJOR COURSES

COURSE	TITLE	CREDIT HOURS
HSC 220	Personal Health and Wellness	3
HSC 301	Health Promotion	3
HSC 310	Health Informatics	3
HSC 320	Writing for Health Science Professionals	3
HSC 305	Navigating Healthcare Systems	3
HSC 308	Healthcare Leadership & Teamwork	3
HSC 340	Health & Safety	3
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 532	Directed Study	3
TOTAL		27

GENERAL ELECTIVES

Students complete 15 credit hours of online general electives to reach the minimum **120 credit hours required for the degree**. Transfer credit is also applicable to fulfill requirements for general electives.

Bachelor of Science in Medical and Molecular Biology

The Bachelor of Science in Medical and Molecular Biology prepares students for a range of employment and postgraduate study opportunities. These include entry-level laboratory positions; postgraduate certificate studies leading to careers in biotechnology, forensic science, and clinical laboratory sciences; graduate studies in biology leading to careers in research, industry, and education; and application to medical, dental, optometry, and professional schools.

The curriculum design provides a broad foundation in the sciences and a wide variety of liberal arts courses that are integrated throughout the program. Major requirements in biology include medical microbiology and molecular biology in the second year; and cellular biochemistry, genetics, and six biology electives—two medical biology electives, two molecular and cellular biology electives, and two electives from either list. In the fourth year a science communication course provides a synthetic, capstone experience. In addition, students are encouraged to participate in undergraduate research opportunities at the University or in research/clinical laboratories in the local area.

To remain in good academic standing in the Bachelor of Science in Medical and Molecular Biology program, students must maintain a cumulative 2.0 grade point average (GPA). To meet the residency requirement for the BS in Medical and Molecular Biology, students must complete at least 63 credit hours at the University.

Curriculum: Bachelor of Science in Medical and Molecular Biology

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
	Social Science (SSC) Elective	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

	Biology Elective	3
	Humanities (HUM) Elective	3
TOTAL		14

Year III—fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
	Behavioral Science (BEH) Elective	3
	Biology Elective	3
TOTAL		17

Year III—spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
	Behavioral Science (BEH) Elective	3
	Humanities (HUM) Elective	3
	Biology (BIO) Elective	3
TOTAL		15

Year IV—fall

COURSE	TITLE	CREDIT HOURS
	Biology Electives	6
	General Electives	7
TOTAL		13

Year IV—spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
	Biology Electives	3
	General Electives	7
TOTAL		13

Total credits to complete degree requirements: 120 credit hours

Biology Electives. Students must complete six biology electives: two from the Molecular and Cellular Biology Elective list, two from the Medical Biology Elective list, and two more from either list.

Molecular and Cellular Biology Electives

COURSE	TITLE
BIO 335L	Experimental Techniques in Molecular Biology
BIO 405	Plagues & Pandemics
BIO 430	Molecular Biology of Cancer
BIO 440	Cell Biology
BIO 434	Immunology
BIO 455	Advanced Microbiology (with lab)
BIO 530	Undergraduate Research Project
PSB 301	Pharmacology for Allied Health Sciences
PSB 460	Toxicology I
PSB 461	Toxicology II
PSB 440	Molecular Biotechnology
	Approved Colleges of the Fenway courses

Medical Biology Electives

COURSE	TITLE
BEH 341	Biological Psychology
BIO 110	Anatomy and Physiology I with Lab
BIO 210	Anatomy and Physiology II
BIO 210L	Anatomy and Physiology II Lab
BIO 321	Nutrition Science
BIO 345	Exercise Physiology
BIO 346	Applied Concepts in Public Health
BIO 445	Applied Human Physiology
BIO 465	Medical Parasitology
BIO 530	Undergraduate Research Project
MAT461	Biostatistics
PBH 340	Environment and Public Health
PSB 328	Physiology/Pathophysiology I
PSB 329	Physiology/Pathophysiology II
	Approved Colleges of the Fenway courses

Bachelor of Science in Medical and Molecular Biology/MS in Clinical Research

Curriculum: Bachelor of Science in Medical and Molecular Biology/Master of Science in Clinical Research

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Expository Writing I	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
SSC	Social Science Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
BIO	Biology (BIO) Elective	3
HUM	Humanities (HUM) Elective	3
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
BEH	Behavioral Science (BEH) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
BEH	Behavioral Science (BEH) Elective	3
HUM	Humanities (HUM) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
BIO	Biology (BIO) Electives	6
	General Electives	7
MCR 801	Pharma R&D: From Discovery to Market	3
TOTAL		13

Year IV — spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
BIO	Biology (BIO) Electives	3
	General Electives	7
DRA 807	Statistics in Clinical Research	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
MCR 802	Research Methodology & Development of Protocol	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
MCR 803	Conducting Clinical Research Studies 3	
DRA 808	Protection of Human Research Subjects	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
MCR 804	FDA and Regulatory Affairs	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 150 credit hours

Bachelor of Science in Medical and Molecular Biology/MS in Regulatory Affairs and Health Policy

Curriculum: Bachelor of Science in Medical and Molecular Biology/Master of Science in Regulatory Affairs and Health Policy

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
SS	Social Science (SSC) Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
BIO	Biology (BIO) Elective	3
HUM	Humanities (HUM) Elective	3
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
BEH	Behavioral Science (BEH) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
BEH	Behavioral Science (BEH) Elective	3
HUM	Humanities (HUM) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
BIO	Biology (BIO) Electives	6
	General Electives	7
DRA 802	Law and Health Policy	3
TOTAL		16

Year IV — spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
BIO	Biology (BIO) Electives	3
	General Electives	7
DRA 807	Statistics in Clinical Research	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
DRA 812	Advanced Topics in Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 150 credit hours

Bachelor of Science in Medical and Molecular Biology/MS in Pharmacology

Curriculum: Bachelor of Science in Medical and Molecular Biology/Master of Science in Pharmacology

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
SSC	Social Science (SSC) Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
BIO	Biology (BIO) Elective	3
HUM	Humanities (HUM) Elective	3
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
BEH	Behavioral Science (BEH) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
BEH	Behavioral Science (BEH) Elective	3
HUM	Humanities (HUM) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
BIO	Biology (BIO) Electives	6
	General Electives	7
MAT 763	Advanced Statistics	3
TOTAL		16

Year IV — spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
BIO	Biology (BIO) Electives	3
	General Electives	7
PSB 847	Graduate Biochemistry	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
PSB 712	Systems Pharmacology I	3
PSB 841	Receptor Pharmacology	3
PSB 815	Drug Metabolism	3
PSB 819	Seminar	0
TOTAL		9

Year I — spring

COURSE	TITLE	CREDIT HOURS
PSB 713	Systems Pharmacology II	3
PSB	Graduate PSB Elective	3
PSB/DRA/MCR	Graduate Elective	3
PSB 819	Seminar	1
TOTAL		10

Total credits to complete BS and MS degree requirements: 151 credit hours

Bachelor of Science in Premedical Health Studies

The Premedical Health Studies degree is specifically designed for students seeking undergraduate preparation for chiropractic, dental, medical (allopathic or osteopathic), optometry, physician assistant, podiatry, or veterinary school, or who are considering graduate education in nutrition, speech-language pathology, public health, health administration, or other health-oriented programs. The curriculum provides an interdisciplinary health studies major that balances the basic and laboratory sciences with courses in the liberal arts. It prepares exceptionally well-rounded candidates for a range of postbaccalaureate degree programs. This program also is designed to allow premedical students to transition into the MCPHS Master of Physician Assistant Studies or Doctor of Optometry degree programs.

Premedical majors have the option of choosing one of several minors. These minors develop depth of knowledge in a focal area that complements the interdisciplinary design of the degree program. In addition to preparing students for the health professions, each minor provides an alternative postgraduate direction. The Biology and Chemistry minors add upper-division didactic and laboratory experiences that could lead to graduate education in the sciences. The Health Psychology minor provides a basis for graduate study in clinical, counseling, or health psychology. The Health Humanities minor prepares students for a wide range of graduate studies. In each of its manifestations, the BS in Premedical Health Studies is a rigorous educational experience for life in the contemporary world. Graduates who do not pursue advanced studies will find themselves well prepared for a variety of employment options in industry, healthcare, research, and education.

To remain in good academic standing, students must maintain a cumulative 2.0 grade point average (GPA). To meet the residency requirement for the BS in Premedical Health Studies degree, students must complete at least 63 credit hours at the University.

Students who are enrolled in other degree programs within the University and who have attained a minimum GPA of 2.0 without failed or repeated courses are eligible to apply for transfer into the PMHS program. Students should ideally apply following the spring semester of their freshman year.

Curriculum: Bachelor of Science in Premedical Health Studies (General Program)

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I ***OR***	
MAT 150	Pre-Calculus	3
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology ***OR***	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II ***OR***	
MAT 151	Calculus I	3
TOTAL		17

If LIB 120 is completed in Year I spring, then the following course sequence is followed:

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 205	Health Professions Orientation Seminar*	1
MAT 261	Statistics	3
	Behavioral Sciences (BEH) Elective	3
	Humanities (HUM) Elective	3
TOTAL		17

Year II—spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
	Social Science (SSC) Elective	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		14

If LIB 133 is completed in Year I spring, then the following course sequence is followed:

Year II—fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology	3
LIB 205	Health Professions Orientation Seminar#	1
MAT 261	Statistics	3
	Social Science (SSC) Elective	3
TOTAL		14

Year II—spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
	Behavioral Sciences (BEH) Elective*	3
	Humanities (HUM) Elective	3
TOTAL		17

Year III—fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry	4
	General Elective	3
PHY 270	Foundations of Physics I and	
PHY 272L	Foundations of Physics I Laboratory ***OR***	
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1

	Behavioral Sciences (BEH) Elective	3
	Advanced Biology Elective ***	3
TOTAL		17

Year III—spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PHY 274	Foundations of Physics II	
PHY 274L	Foundations of Physics II Laboratory ***OR***	
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1
	Social Science (SSC) Elective	3
	Advanced Biology Elective***	3
	Liberal Arts Elective****	3
TOTAL		16

*** PHY 280/284 is meant for students who will be taking professional school entrance exams such as the MCAT, GRE, or OAT.*

**** Advanced Biology electives include any 300- or 400-level BIO (Biology) or PBH (Public Health) course; or approved Colleges of the Fenway upper-level BIO course.*

***** Liberal Arts Elective can be any 3-semester-hour course in the following areas: BEH, HUM, SSC, language, or communication.*

Year IV—fall

COURSE	TITLE	CREDIT HOURS
	Humanities (HUM) Elective	3
	General Electives	11
TOTAL		14

Year IV—spring

COURSE	TITLE	CREDIT HOURS
LIB 480	Premedical and Health Studies Capstone Seminar	3
	General Electives	9
TOTAL		12

Total credits to complete degree requirements: 122 credit hours

Bachelor of Science in Premedical Health Studies, Physician Assistant Pathway

Students apply to the MCPHS Master of Physician Assistant Studies (Boston) Program through CASPA during the summer break between Years 2 and 3. They must take and pass both PAS 402 & 403 by the end of this summer in order to apply at this point.

Curriculum: Bachelor of Science in Premedical Health Studies, Physician Assistant Pathway

Year I-fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
BIO 151	Biology I	3
BIO 150L	Biology I Lab	1
MAT 151	Calculus I ***OR***	
MAT 150	Pre-Calculus	3
BIO 150L	Biology I Lab	1
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
MAT 152	Calculus II ***OR***	
MAT 151	Calculus I	3
LIB 133 or LIB 120		3
TOTAL		17

If LIB 133 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

If LIB 120 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Lab	1

In Year 2, students should complete a minimum of 31 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 220, MAT 261, BIO 255, one BEH, one SSC, and one HUM elective.

Year III-summer

COURSE	TITLE	CREDIT HOURS
PAS 404	Pre-PA Pathway Seminar	

Year III-fall

COURSE	TITLE	CREDIT HOURS
PHY 270	Foundations of Physics I and	
PHY 272L	Foundations of Physics I Laboratory ***OR***	
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
BIO 360	Cellular Biochemistry	4

PAS 400	Clinical Anatomy & Physiology I	3
LIB 512*	Healthcare Ethics	3
	Distribution Elective	3
TOTAL		17

Year III-spring

COURSE	TITLE	CREDIT HOURS
PAS 410	Clinical Anatomy & Physiology II	3
BIO 332	Genetics	3
PSB 301	Pharmacology Allied Health Professionals	3
	Distribution and LIB Elective Courses	6
TOTAL		15

In Year 3, students should complete a minimum of 32 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 512, one BEH, one SSC and one Liberal Arts elective (LAEs include any 3-credit hour BEH, HUM, SSC, language or communication course).

Students accepted into the Master of Physician Assistant Studies (Boston) Program begin the MPAS curriculum at this point.

Master of Physician Assistant Studies (Boston) Program

Year IV—fall

COURSE	TITLE	CREDIT HOURS
PAS 517	Human Physiology and Pathophysiology I	3
PAS 514	Principles of Professional Practice	2
PAS 515	Genetics	1
PAS 516	Introduction to Psychiatry	2
PAS 518	Clinical Pharmacology I	3
PAS 533	Evidence-Based Medicine	2
PAS 534	Introduction to Public Health	2
TOTAL		15

Year IV—spring

COURSE	TITLE	CREDIT HOURS
PAS 520	Clinical Pharmacology II	3
PAS 524	Gross Anatomy (with lab)	5
PAS 525	Diagnostic Methods	2
PAS 527	Human Physiology and Pathophysiology II	3
PAS 535	Electrocardiography	2
PAS 523	Medical Interviewing	1
TOTAL		16

Total credits to complete Bachelor of Science in Premedical Health Studies degree requirements: 125 credit hours. Students will continue with successful completion of the MPAS Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Premedical Health Sciences standard curriculum.

The Year 4 schedule should be filled with remaining required and general electives in order to reach the **122-credit hour graduation requirement**.

Bachelor of Science in Premedical Health Studies, Optometry Pathway

Students can choose between an accelerated or standard pathway. Accelerated students apply to the MCPHS School of Optometry after their second year of undergraduate study and begin optometry school after their third year of undergraduate study. First-year optometry school courses are then counted towards bachelor's degree completion. Standard students apply to optometry school after their third year of undergraduate study and begin optometry school after completing the bachelor's degree.

Accelerated pre-optometry students should prepare OptomCAS application for application to the MCPHS School of Optometry in fall of year III. OAT ideally should be taken in the summer between year 2 & 3 but no later than end of fall semester of year 3.

Curriculum: Bachelor of Science in Premedical Health Studies, Optometry Pathway

Year I-fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
BIO 151	Biology I	3
MAT 151	Calculus I ***OR***	
MAT 150	Pre-Calculus	3
BIO 150L	Biology I Lab	1
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
MAT 152	Calculus II ***OR***	
MAT 151	Calculus I	3
LIB 120	Introduction to Psychology	3
TOTAL		17

Year II-fall

COURSE	TITLE	CREDIT HOURS
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 205	Health Professions Orientation	1
TOTAL		12

Year II-spring

COURSE	TITLE	CREDIT HOURS
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1
CHE 232	Organic Chemistry II	3

In Year 2, students should complete a minimum of 31 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 220, one BEH, one SSC, and one HUM elective.

Year III-fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry	4

In Year 3, students should complete a minimum of 32 credits (fall and spring combined). In addition to the semester-specific course listed above, this should include the following: MAT 261, BIO 255, LIB 512, two Advanced Biology Electives (ABEs include ANY 300- or 400-level BIO or PBH course), one BEH, one SSC and one Liberal Arts elective (LAEs include any 3 credit hour BEH, HUM, SSC, language or communication course).

Students accepted into the Doctor of Optometry Program begin the OD curriculum at this point.

Doctor of Optometry Program

Doctor of Optometry Year I—fall

COURSE	TITLE	CREDIT HOURS
OPT 610	Clinical Anatomy (with lab)	3
OPT 611	Ocular Anatomy & Physiology	2
OPT 630	Geometrical and Physical Optics (with lab)	5
OPT 650	Optometry Theory and Methods I	2
OPT 650L	Optometry Theory and Methods I Lab	1
OPT 656	Histology and Embryology	3
OPT 721	Visual Development	2
TOTAL		18

Doctor of Optometry Year I—spring

COURSE	TITLE	CREDIT HOURS
OPT 612	Ocular Biochemistry	2
OPT 631	Visual Optics (with lab)	4
OPT 652	Optometry Theory and Methods II	2
OPT 652L	Optometry Theory and Methods II Lab	1
OPT 622	Visual Perception	3
OPT 613	Neuro Anatomy and Physiology	3
OPT 657	Microbiology	1
OPT 709	Systemic Pharmacology I	2
TOTAL		18

Total credits to complete Bachelor of Science in Premedical Health Studies, Optometry Pathway degree requirements: 131-credit hours. Students will continue with successful completion of the OD Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Premedical Health Sciences standard curriculum.

The Year 4 schedule should be filled with remaining required courses and general electives to reach the **122-credit hour graduation requirement**.

Bachelor of Science in Premedical Health Studies to Doctor of Osteopathic Medicine (DO) Joint Degree Program at AT Still University or Lake Erie College of Osteopathic Medicine

Students applying to LECOM may do so either prior to enrollment at MCPHS, or before the end of the second year of study at MCPHS. Students applying to AT Still should do so before the end of the second year of study at MCPHS.

Curriculum: Bachelor of Science in Premedical Health Studies to Doctor of Osteopathic Medicine (DO) Joint Degree

Year I-fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
BIO 151	Biology I	3
MAT 151	Calculus I ***OR***	
MAT 150	Pre-Calculus	3
BIO 150L	Biology I Lab	1
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1

BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
MAT 152	Calculus II ***OR***	
MAT 151	Calculus I	3
LIB 133 or LIB 120		3
TOTAL		17

If LIB 133 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Lab	1

If LIB 120 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

In Year 2, students should complete a minimum of 31 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 220, MAT 261, BIO 255, one BEH, one SSC, and one HUM elective.

Year III-fall

COURSE	TITLE	CREDIT HOURS
PHY 270	Foundations of Physics I and	
PHY 272L	Foundations of Physics I Laboratory ***OR***	
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
BIO 360	Cellular Biochemistry	4

Year III-spring

COURSE	TITLE	CREDIT HOURS
PHY 274	Foundations of Physics II	
PHY 274L	Foundations of Physics II Laboratory ***OR***	
PHY 284	Physics II	3
PHY 284L	Physics II Lab	1
BIO 332	Genetics	3

In Year 3, students should complete a minimum of 33 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 512, one Advanced Biology Elective (ABEs include ANY 300- or 400-level BIO or PBH course), one BEH, one SSC and one Liberal Arts elective (LAEs include any 3-credit hour BEH, HUM, SSC, language, or communication course).

PHY280/284 is meant for students who will be taking professional school entrance exams such as the MCAT/OAT.

Year IV-fall

COURSE	TITLE	CREDIT HOURS
	Humanities (HUM) Elective	3

Year IV-spring

COURSE	TITLE	CREDIT HOURS
LIB 480	Capstone Seminar	3

The Year 4 schedule should be filled with remaining required courses and general electives to reach the **122-credit hour graduation requirement**.

Bachelor of Science in Premedical Health Studies to Doctor of Medicine (MD) Joint Degree Program at St. George's University

Students can choose between an accelerated or standard program. Accelerated students apply to medical school after their second year of undergraduate study and begin medical school after their third year of undergraduate study. First-year medical school courses are then counted towards bachelor's degree completion. Standard students apply to medical school after their third year of undergraduate study and begin medical school after completing the bachelor's degree.

Students in the accelerated program should apply to St. George's University School of Medicine during the summer between their second and third years of study. If accepted into St. George's following the third year of study at MCPHS, the student must notify the MCPHS Registrar of their acceptance into St. George's University. The student must provide their first-year medical school transcript in order to earn credit towards B.S. degree conferral.

Curriculum: Bachelor of Science in Premedical Health Studies to Doctor of Medicine (MD) Joint Degree

Year I-fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
BIO 151	Biology I	3
MAT 151	Calculus I or	
MAT 150	Pre-Calculus	3
BIO 150L	Biology I Lab	1
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
MAT 152	Calculus II or	
MAT 151	Pre-Calculus	3
LIB 133 or LIB 120		3
TOTAL		17

If LIB 133 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

If LIB 120 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

In Year 2, students should complete a minimum of 31 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 220, MAT 261, BIO 255, one BEH, one SSC, and one HUM elective.

Year III-fall

COURSE	TITLE	CREDIT HOURS
PHY 270	Foundations of Physics I and	
PHY 272L	Foundations of Physics I Laboratory ***OR***	
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
BIO 360	Cellular Biochemistry	4

Year III-spring

COURSE	TITLE	CREDIT HOURS
PHY 274	Foundations of Physics II	3
PHY 274L	Foundations of Physics II Laboratory ***OR***	1
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1
BIO 332	Genetics	3

In Year 3, students should complete a minimum of 33 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 512, one Advanced Biology Electives (ABEs include ANY 300- or 400-level BIO or PBH course), one BEH, one SSC and one Liberal Arts Elective (LAEs include any 3-credit hour. BEH, HUM, SSC, language or communication course).

PHY280/284 is meant for students who will be taking professional school entrance exams such as the MCAT or OAT.

Accepted accelerated students would begin their first year at St. George's University at this point.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the Premedical Health Sciences BS standard curriculum.

The Year 4 schedule should be filled with remaining required courses and general electives to reach the **122-credit hour graduation requirement**.

Bachelor of Science in Premedical Health Studies to Doctor of Veterinary Medicine (DVM) Joint Degree Program at St. George's University

Students applying to the St. George's University DVM Joint Degree Program may do so either prior to enrollment at MCPHS, or before the end of their third year of study at MCPHS. Students must be accepted to the professional phase of the St. George's University School of Veterinary Medicine after their third year of study at MCPHS in order to continue on in the program.

Curriculum: Bachelor of Science in Premedical Health Studies to Doctor of Veterinary Medicine (DMV) Joint Degree

Year I-fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
BIO 151	Biology I	3
MAT 151	Calculus I ***OR***	
MAT 150	Pre-Calculus	3
BIO 150L	Biology I Lab	1
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
MAT 152	Calculus II ***OR***	
MAT 151	Pre-Calculus	3
LIB 133 or LIB 120		3
TOTAL		17

If LIB 133 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

If LIB 120 is taken in Year I then:

Year II-fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 205	Health Professions Orientation	1
TOTAL		8

Year II-spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

In Year 2, students should complete a minimum of 31 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 220, MAT 261, BIO 255, one BEH, one SSC, and one HUM elective.

Year III-fall

COURSE	TITLE	CREDIT HOURS
PHY 270	Foundations of Physics I and	
PHY 272L	Foundations of Physics I Laboratory ***OR***	
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
BIO 360	Cellular Biochemistry	4

Year III-spring

COURSE	TITLE	CREDIT HOURS
PHY 274	Foundations of Physics II	3
PHY 274L	Foundations of Physics II Laboratory ***OR***	1
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1
BIO 332	Genetics	3

In Year 3, students should complete a minimum of 33 credits (fall and spring combined). In addition to semester-specific courses listed above, this should include the following: LIB 512, one Advanced Biology Electives (ABEs include ANY 300- or 400-level BIO or PBH course), one BEH, one SSC and one Liberal Arts Elective (LAEs include any 3-credit hour BEH, HUM, SSC, language or communication course).

PHY280/284 is meant for students who will be taking professional school entrance exams such as the MCAT or OAT.

Year IV-fall

COURSE	TITLE	CREDIT HOURS
	Humanities (HUM) Elective	3

Year IV-spring

COURSE	TITLE	CREDIT HOURS
LIB 480	Capstone Seminar	3

The Year 4 schedule should be filled with remaining required courses and general electives to reach the **122-credit hour graduation requirement**.

Bachelor of Science in Public Health

The Bachelor of Science in Public Health degree program is an applied liberal arts curriculum that prepares students for postgraduate master's (MPH) and doctoral (PhD, DrPH) programs in public health. Students who continue their education in public health at the graduate level typically pursue careers in epidemiology, biostatistics, health promotion, community health, environmental health, biomedical science, or health policy and management. The curriculum prepares students equally well for advanced studies leading to careers in environmental science, public policy, health promotion, healthcare administration, law, and medicine.

The Public Health curriculum builds on general education courses in biology, chemistry, mathematics, and liberal arts as well as required foundational courses in social and behavioral sciences, biostatistics, epidemiology, environmental health, and public policy. In the third and fourth years, students continue with advanced-level courses; select public health electives from the biology, behavioral sciences, and social sciences disciplines; engage in experiential and service learning through a field placement; and design an interdisciplinary project in a senior capstone seminar.

Public Health majors have elective openings that permit completion of a minor in Premedical Health Studies, Biology, Chemistry, Health Humanities, Health Psychology, or Women's and Gender Studies, and they have opportunities for language and international studies through the Colleges of the Fenway, as well as travel courses and study abroad through MCPHS.

An additional option also exists whereby students may adopt a Pre-Health Law concentration. This concentration combines public health with the study of law and will prepare students to sit for the LSAT examination in preparation for law school to obtain the Master of Laws (L.L.M.) or Juris Doctor (J.D.) degrees.

To remain in good academic standing, students must maintain a cumulative 2.0 grade point average (GPA). To meet the residency requirement for the BS in Public Health, students must complete at least 62 credit hours at the University.

Curriculum: Bachelor of Science in Public Health (General Program)

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT 152	Calculus II	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
HSC 301	Health Promotion	3
LIB 120	Introduction to Psychology	3
MAT 261	Statistics	3
PBH 250	Introduction to Public Health	3
PBH 206	Public Health Seminar	1

PBH 260	Public Health Research Methods	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
PBH 340	Environment and Public Health	3
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
LIB 512	Healthcare Ethics	3
SSC	SSC Elective from list*	3
	General Elective	3
TOTAL		16

Year III—fall

COURSE	TITLE	CREDIT HOURS
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 461	Biostatistics	3
PBH	Public Health Elective	3
	General Electives	6
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS
PBH 330	Introduction to Epidemiology	3
PBH 360	Health Data Collection and Management	3
SSC	SSC Elective from list*	3
	General Electives	6
TOTAL		15

Year IV—fall

COURSE	TITLE	CREDIT HOURS
PBH 430	Infectious Disease Epidemiology	3
PBH 440	Introduction to SAS Programming	3
	BEH Elective	3
	HUM Elective	3
	General Elective	3
TOTAL		15

Year IV—spring

COURSE	TITLE	CREDIT HOURS
PBH 480	Public Health Capstone Seminar	3
PBH 460	Field Placement	3
PBH 435	Public Policy and Public Health	3
PBH 432	Chronic Disease Epidemiology	3
	Public Health Elective	3
TOTAL		15

Total credits to complete degree requirements: 124 credit hours

*Students may select an elective SSC course from these options:

SSC 230	Cultural Anthropology
SSC 345	The Immigrant Experience
SSC 356	The Politics of Food
SSC 444	Cigarettes in American Culture
SSC 464	Social Justice Movements in the US
SSC 495	Evolution of the Health Professions

Bachelor of Science in Public Health/Pre-Health Law Concentration

Year I—fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT 152	Calculus II	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		17

Year II—fall

COURSE	TITLE	CREDIT HOURS
HSC 301	Health Promotion	3
LIB 120	Introduction to Psychology	3
PBH 250	Introduction to Public Health	3
PSB 210	Macroeconomics	3
PBH 206	Public Health Seminar	1
PBH 260	Public Health Research Methods	3
TOTAL		16

Year II—spring

COURSE	TITLE	CREDIT HOURS
MAT 261	Statistics	3
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
PBH 340	Environment and Public Health	3
PSB 235	Introduction to Business	3
PBH 450	Introduction to Health Law	3
TOTAL		16

Year III—fall

COURSE	TITLE	CREDIT HOURS
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 461	Biostatistics	3
HUM 340	Introduction to Philosophy	3
	Public Health Elective	3
	Behavioral Elective	3
TOTAL		15

Year III—spring

COURSE	TITLE	CREDIT HOURS
PBH 330	Introduction to Epidemiology	3
PBH 360	Health Data Collection and Management	3
PBH 435	Public Policy and Public Health	3
PSB 447	Fundamentals of Business Law	3
SSC 464	Social Justice Movements in the US	3
TOTAL		15

Year IV—fall

COURSE	TITLE	CREDIT HOURS
PBH 430	Infectious Disease Epidemiology	3
PBH 440	Introduction to SAS Programming	3
PBH 445	Advanced Political Science and Healthcare Policy	3
PBH 449	Public Rhetoric	3
LIB 512	Healthcare Ethics	3
TOTAL		15

Year IV—spring

COURSE	TITLE	CREDIT HOURS
PBH 432	Chronic Disease Epidemiology	3
PBH 480	Public Health Capstone Seminar	3
PBH 460	Field Placement	3
	General Electives	6
TOTAL		15

Total credits to complete degree requirements: 124 credit hours

Public Health Electives (5 must be chosen from this category, 15 credit hours):

COURSE	TITLE
BEH 250	Health Psychology
BEH 260	Lifestyle Medicine
BEH 454	Stress and Illness
BIO 260	Molecular Biology
BIO 455	Advanced Microbiology (with lab)
BIO 243	Parasitology
PBH 335	Human Sexuality
PBH 371	Field Epidemiology
PBH 420	Community Health
PSB 320	Introduction to Healthcare Delivery
SSC 432	Medical Anthropology
SSC 444	Cigarettes in American Culture

Students enrolled in the Public Health major should adopt a Premed minor if they wish to consider medical, dental, or physician assistant school after completing the baccalaureate program.

Substitutions: Year II: Students should substitute Organic Chemistry (CHE 231/231L and CHE 232/234L) for general electives (this adds 2 credit hours to the program). Year III: Students should substitute the Foundations of Physics series (PHY 270/272L and PHY 274/274L) *or* the Physics I and Physics II series (PHY 280/280L and PHY 284/284L) *and* Cellular Biochemistry (BIO 360) for general electives (this adds 3 credit hours to the program).

Bachelor of Science in Public Health/Master of Public Health (MPH) Pathway

The five-year Bachelor of Science in Public Health and Master of Public Health (BS/MPH) Pathway program at MCPHS encompasses requirements of both the BS and MPH degrees. Students will have the opportunity to apply for the Pathway program in the fall of their third year at MCPHS. Upon acceptance to the program, students will begin their graduate-level study in the fall of their fourth year with three graduate-level courses. The total number of credits for both degrees

is 157 credit hours, 124 being completed to award the BS after the fourth year and 33 in the fifth year to award the MPH. Note that PBH 701 Foundations of Graduate Study in Public Health generally is waived for students in the BSPH/MPH Pathway program. Of the 124 credits in the BS, 9 credit hours in the fourth year are 700-level MPH courses that count toward the 42 credit hours required for the MPH degree.

Curriculum: Bachelor of Science in Public Health/Master of Public Health

The curriculum for Years I, II and III are identical to the BS curriculum above. Students accepted into the MPH program will complete the combined curriculum as follows:

Year IV—fall

COURSE	TITLE	CREDIT HOURS
PBH 430	Infectious Disease Epidemiology	3
PBH 440	Introduction to SAS Programming	3
PBH 750	Community Health Science and Practice	3
PBH 710	Policy and Leadership to Advance Health Equity	3
	BEH Elective	3
TOTAL		15

Year IV—spring

COURSE	TITLE	CREDIT HOURS
PBH 432	Chronic Disease Epidemiology	3
PBH 435	Public Policy and Public Health	3
PBH 460	Field Placement	3
PBH 480	Public Health Capstone Seminar	3
PBH 755	Health Promotion and Education	3
TOTAL		15

Total credits to complete Bachelor of Science in Public Health degree requirements: 124 credit hours. Students will continue with successful completion of the MPH Program requirements for conferral of that degree.

Master of Public Health Program

Year V—summer

COURSE	TITLE	CREDIT HOURS
PBH 701	Foundations of Graduate Study in Public Health	3
PBH 740	Methods in Biostatistics and Epidemiology	4
PBH 770	Qualitative Research Methods in Public Health	3
TOTAL		10

Year V—fall

COURSE	TITLE	CREDIT HOURS
PBH 894	Literature Analysis and Certified in Public Health Exam ***OR***	
PBH 895	Advanced Data Analysis and Interpretation	3
PBH 760	Program Design and Evaluation of Public Health Interventions	3
PBH 890	Public Health Practice Experience	2
	Public Health Elective (500 level or above)	3
TOTAL		11

Year V—spring

COURSE	TITLE	CREDIT HOURS
PBH 705	Introduction to Environmental Health Sciences	3
PBH 765	Community Health Assessments	3
PBH 896	Advanced Policy Analysis	3
	Public Health Elective (500 level or above)	3
TOTAL		12

Total credits to complete BS Public Health/Master of Public Health combined degree requirements: 157 credit hours

Bachelor of Science in Public Health/Master of Acupuncture (MAc) or Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) Pathway

The six-year Bachelor of Science in Public Health and Master of Acupuncture or Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) program is a joint pathway encompassing the marketable skills of research, data analysis, and knowledge of statistical software consistent with the public health discipline that allows students to also complete the requirements for the MAc or MAc CHM degrees. The knowledge and skills gained through the BS in Public Health program provide an excellent foundation for students to transfer to the New England School of Acupuncture and sets an excellent foundation for a career in acupuncture or herbal medicine. Students will complete their undergraduate degree requirements in years one through three, while earning the prerequisite credits to complete the graduate degree, which comprises years four through six.

Year I–fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
BIO 151	Biology I	3
MAT 151	Calculus I	3
BIO 150L	Biology I Lab	1
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
LIB 112	Writing in the Humanities	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
MAT 152	Calculus II	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		17

Year II–fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
LIB 120	Introduction to Psychology	3
MAT 261	Statistics	3
PBH 206	Public Health Seminar	1
PBH 250	Introduction to Public Health	3
PBH 260	Public Health Research Methods	3
TOTAL		17

Year II–spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PBH 340	Environment and Public Health	3
SSC 230	Cultural Anthropology	3
	Humanities Elective	3
TOTAL		16

Year III–fall

COURSE	TITLE	CREDIT HOURS
PBH 350	Global Health	3
MAT 461	Biostatistics	3
LIB 512	Healthcare Ethics	3
BEH 260	Lifestyle Medicine	3
BEH 352	Human Development/Lifecycle	3
TOTAL		15

Year III–spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
BEH 353O	Nutrition and Health	3
PBH 330	Introduction to Epidemiology	3
PBH 435	Public Policy and Public Health	3
PBH 360O	Health Data Collection and Management	3
TOTAL		16

Students accepted into a School of Acupuncture Program begin the Acupuncture curriculum at this point.

Master of Acupuncture (MAc) Program

Year IV—fall		*MAc*	*MAc (JAS Concentration)*
COURSE	TITLE	CREDIT HOURS	CREDIT HOURS
SACAS 511	Traditional Chinese Medicine Theory I	4	4
SACAS 512	Point Location I	2.5	2.5
SACAS 513	Materials and Methods of TCM I	2	2
SAPRD 510	Introduction to Diversity, Equity and Inclusion in Acupuncture	1	1
SASCI 517	Integrated Anatomy I	2	2
SACAS 519	Self-Care I	1	1
SACAS 510	History of Chinese Medicine	1	1
SACLC 511	Clinical Assistantship I	1	1
SASCI 511	Anatomy and Physiology I	3	3
TOTAL		17.5	17.5

Year IV—spring		*MAc*	*MAc (JAS Concentration)*
COURSE	TITLE	CREDIT HOURS	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4	4
SACAS 525	Point Location II	2.5	2.5
SACAS 526	Materials and Methods of TCM II	2	2
SASCI 527	Integrated Anatomy II	2	2
SAJAS 521	Japanese Acupuncture I	2	2
SACHM 520	Introduction to Chinese Herbal Medicine	2	2
SACLC 522	Clinical Assistantship II	1	1
SASCI 522	Anatomy and Physiology II	3	3
SASCI 511L	Anatomy Lab	1	1
TOTAL		19.5	19.5

Total credits to complete Bachelor of Science in Public Health degree requirements: 133 credit hours. Students will continue with successful completion of the MAc Program requirements for conferral of that degree.

Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) Program

Year IV—fall		*MAc CHM*	*MAc CHM (JAS Concentration)*
COURSE	TITLE	CREDIT HOURS	CREDIT HOURS
SACAS 511	Traditional Chinese Medicine Theory I	4	4
SACAS 512	Point Location I	2.5	2.5
SACAS 513	Materials and Methods of TCM I	2	2
SAPRD 510	Introduction to Diversity, Equity and Inclusion in Acupuncture	1	1
SASCI 517	Integrated Anatomy I	2	2
SACAS 519	Self-Care I	1	1
SACAS 510	History of Chinese Medicine	1	1
SACLC 511	Clinical Assistantship I	1	1
SASCI 511	Anatomy and Physiology I	3	3
TOTAL		17.5	17.5

Year IV—spring		*MAc CHM*	*MAc CHM (JAS Concentration)*
COURSE	TITLE	CREDIT HOURS	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4	4
SACAS 525	Point Location II	2.5	2.5
SACAS 526	Materials and Methods of TCM II	2	2
SASCI 527	Integrated Anatomy II	2	2
SAJAS 521	Japanese Acupuncture I	2	2
SACHM 520	Introduction to Chinese Herbal Medicine	2	2
SACLC 522	Clinical Assistantship II	1	1
SASCI 522	Anatomy and Physiology II	3	3
SASCI 511L	Anatomy Lab	1	1
TOTAL		19.5	19.5

Total credits to complete Bachelor of Science in Public Health degree requirements: 133 credit hours. Students will continue with successful completion of the MAc CHM Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Public Health standard curriculum.

The Year 4 schedule should be filled with remaining required courses and general electives to reach the **124-credit hour graduation requirement**.

Bachelor of Science in Public Health/Master of Science in Occupational Therapy Pathway

The five-year Bachelor of Science in Public Health and Master of Science in Occupational Therapy (MSOT) program at MCPHS is a joint program encompassing the requirements of both degrees. The knowledge and skills gained through the BS in Public Health program provide an excellent foundation for the MSOT program and for a career in Occupational Therapy. More specifically, the BS in Public Health program provides students with an interdisciplinary education with practical applications. Students will develop skills that can be used to assess the need for services and to implement and evaluate services. Students who complete the BS Public Health/MSOT pathway will be prepared to work in a variety of settings, with additional expertise relevant to community agencies and government institutions.

Curriculum: Bachelor of Science in Public Health/Master of Science in Occupational Therapy Pathway

Year I-fall		
COURSE	TITLE	CREDIT HOURS
BIO 150	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		15

Year I-spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT 152	Calculus II	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		17

Year II-fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
LIB 120	Introduction to Psychology	3
MAT 261	Statistics	3
PBH 206	Public Health Seminar	1
PBH 250	Introduction to Public Health	3
PBH 260	Public Health Research Methods	3
TOTAL		17

Year II-spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
	Environment and Public Health	3
Social Sciences Electives		6
(SSC 230, SSC 345, SSC 356, SSC 444, SSC 464, or SSC 495)		
TOTAL		16

Year III-fall

COURSE	TITLE	CREDIT HOURS
BEH 352	Human Development	3
BIO 345O	Exercise Physiology (with lab)	4
LIB 512	Healthcare Ethics	3
MAT 461	Biostatistics	3
PBH 420	Community Health	3
TOTAL		16

Year III-spring

COURSE	TITLE	CREDIT HOURS
BEH 458	Child Development	3
BEH 350	Abnormal Psychology	3
	Humanities Elective	3
PBH 330	Introduction to Epidemiology	3
PBH 435	Public Policy and Public Health	3
TOTAL		15

Students accepted into the Master of Science in Occupational Therapy Program begin the MSOT curriculum at this point.

Occupational Therapy Program

Year I— fall

COURSE	TITLE	CREDIT HOURS
OTH 500	Contemporary Theory in Occupational Therapy Practice	3
OTH 505	Clinical Reasoning in Occupational Therapy	3
OTH 510	Practice Engagement: Mental Health	3
OTH 511	Practice Engagement: Therapeutic Groups	3
OTH 520	Scholarship in Practice: Evidence-Based Practice	3
TOTAL		15

Year I—spring

COURSE	TITLE	CREDIT HOURS
OTH 525	Practice Engagement: Environments and Technology (with lab)	4
OTH 530	Motor Performance across the Lifespan (with lab)	4
OTH 535	Scholarship in Practice: Methodologies	3
OTH 540	Practice Engagement: Assessment Fundamentals across the Lifespan	3
OTH 565	Apprenticeship: Community Mental Health (Level I)	3
TOTAL		17

Total credits to complete Bachelor of Science in Public Health degree requirements: 128 credit hours. Students will continue with successful completion of the MSOT Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Public Health standard curriculum.

The Year 4 schedule should be filled with remaining required courses and general electives to reach the **124-credit hour graduation requirement**.

Bachelor of Science in Public Health/Doctor of Physical Therapy Pathway

The six-year Bachelor of Science in Public Health and Doctor of Physical Therapy (DPT) program at MCPHS is a joint program that enables students to complete their Bachelor's degree in Public Health while simultaneously completing the prerequisite courses for admission to the Doctor of Physical Therapy program. Contingent upon successful completion of prerequisite courses, attainment of qualifying GPA and GRE scores, students will be eligible to apply to the DPT program. The knowledge and skills gained through the BS in Public Health program provide an excellent foundation for the DPT program and for a career in Physical Therapy. More specifically, the BS in Public Health program provides students with an interdisciplinary education with practical applications. Students will develop skills that can be used to assess need for services and to implement and evaluate services. Students who complete the BS Public Health - DPT pathway will be prepared to work in a variety of settings, with additional expertise relevant to community agencies and government institutions.

Year I-fall

COURSE	TITLE	CREDIT HOURS	
BIO 150L	Biology I Lab	1	
BIO 151	Biology I: Cell and Molecular Biology	3	
CHE 131	Chemical Principles I	3	
CHE 131L	Chemical Principles I Laboratory	1	
LIB 111	Academic Writing and Research		3
MAT 151	Calculus I	3	
ITM 101	Introduction to the Major	1	
TOTAL		15	

Year I-spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3

CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT 152	Calculus II	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		17

Year II-fall

COURSE	TITLE	CREDIT HOURS
BIO 351	Advanced Anatomy and Physiology I	3
BIO 351L	Advanced Anatomy and Physiology I Lab	1
LIB 120	Introduction to Psychology	3
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
PBH 206	Public Health Seminar	1
PBH 250	Introduction to Public Health	3
TOTAL		17

Year II-spring

COURSE	TITLE	CREDIT HOURS
BIO 352	Advanced Anatomy and Physiology II	3
BIO 352L	Advanced Anatomy and Physiology II Lab	1
BEH 250	Health Psychology	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PBH 340	Environment and Public Health	3
	Social Sciences Elective	3
	(SSC 230, SSC 345, SSC 356, SSC 444, SSC 464, or SSC 495)	
TOTAL		16

Year III-fall

COURSE	TITLE	CREDIT HOURS
BIO 345O/L	Exercise Physiology (with lab)	4
MAT 461	Biostatistics	3
PBH 420	Community Health	3
PBH 260	Public Health Research Methods	3
PHY 270/272L	Foundations of Physics I (with lab)	4
TOTAL		17

Year III-spring

COURSE	TITLE	CREDIT HOURS
PBH 330	Introduction to Epidemiology	3
PBH 435	Public Policy and Public Health	3
PBH 360O	Health Data Collection and Management	3
PHY 274	Foundations of Physics II	3
PHY 274L	Foundations of Physics II Laboratory	1
HUM	Humanities Elective	3
TOTAL		16

Total 3-Year credit hours*: 98

Students accepted into the Doctor of Physical Therapy Program begin the DPT curriculum at this point.

Doctor of Physical Therapy Program

Year IV—fall

COURSE	TITLE	CREDIT HOURS
PTH 501	PT as a Profession	2
PTH 510	Foundations of PT Management I (with lab)	3
PTH 520	Clinical Medicine and Pathology I	3
PTH 530	Clinical Human Anatomy I (with lab)	6
PTH 570	Integrated Clinical Education I	2
TOTAL		16

Year IV—spring

COURSE	TITLE	CREDIT HOURS
PTH 515	Foundations of PT Management II (with lab)	3
PTH 525	Clinical Medicine and Pathology II	2
PTH 540	Evidence for PT Practice I	2
PTH 558	Clinical Kinesiology (with lab)	3
PTH 560	Standardized Measurement in PT Practice (with lab)	2
PTH 585	Neuroscience (with lab)	4
PTH 575	Integrated Clinical Education II	2
TOTAL		18

Total credits to complete Bachelor of Science in Public Health degree requirements: 132 credit hours. Students will continue with successful completion of the DPT Program requirements for conferral of that degree.

Students who plan to complete 4 years of MCPHS undergraduate coursework complete year IV of the BS Public Health standard curriculum.

The Year 4 schedule should be filled with remaining required and elective courses in order to reach the **124-credit hour graduation requirement**.

School of Arts and Sciences Honors Program

The MCPHS School of Arts and Sciences Honors program is available to qualified students majoring in any of the school's baccalaureate degree programs. The honors program offers:

- the pursuit of discipline-specific interests and a deeper level of inquiry in any Arts & Sciences discipline: Life Sciences, Chemistry, Math, Physics, Humanities, Communication, Ethics, Behavioral Sciences, Public Health or Social Sciences,
- continued development of academic research skills,
- close faculty mentoring on Honors projects,
- extra preparation for further study toward postgraduate education and careers,
- interactions with fellow honors students and faculty advisers, and
- the possibility of fieldtrips to fascinating locales such as Mass General Hospital's Paul S. Russell Museum of Medical History and Innovation, Brandeis' Graybiel Spatial Orientation Laboratory, and many more.

Honors Program Eligibility

A student should formally apply by February 15 at 5:00 pm of the second curriculum year. A student must have a minimum 3.50 grade point average (GPA) and should be based on the Boston campus for years 3 and 4 of his or her degree program. Students who spend their 4th year in a graduate program (e.g., PA, PT, OT) are not eligible. The application must include:

- a brief essay (approximately 250 words) explaining academic interests and goals, how participation in the honors program will further these goals, and how involvement in the honors program will tie into long-term career goals; and
- a recommendation by a faculty member with whom the student has had significant course- or laboratory-related interaction.

The School of Arts and Sciences Honors Program Committee will determine acceptance into the program based on

- a student's academic performance in college courses,
- the strength of a student's application materials, and
- availability of faculty mentors in a student's area of interest.

The Honors Program Committee will provide interested students with a list of faculty willing to supervise honors students and a description of their research interests, as well as a list of courses that may be used to fulfill the honors program requirements.

Honors Program Requirements
Students who successfully complete the honors program will earn an honors designation on their transcripts. The honors program requirements must be completed over the course of four semesters under the supervision of a faculty mentor. Conferral of that designation each semester depends on completion of either:

- Two different projects that each take a full year to complete. The student must complete two distinct research projects with two different professors, or two related projects with two different professors. This format allows for exploration of a variety of different topics and for an appreciation of the value of collaboration across disciplines. Successful completion of the project depends on submission of a progress report at the end of each Fall semester, and a final project and the end of each Spring semester
- One single project that takes two full years to complete. This option has the greatest potential for generating publishable work in a specific field. The student must complete a single collaborative project with two different professors or a single project with one professor. This format allows for deep exploration of a single research question. Successful completion of the project depends on submission of progress reports at the conclusion of each Fall semester and the first Spring semester, and a final thesis project at the conclusion of the second Spring semester,

The following criteria also apply:

- Honors projects are completed in addition to regular coursework and do not fulfill any major or minor requirements for graduation.
- Projects may be conducted within any discipline and are not meant to duplicate, replace, or extend work done in capstone courses.
- The student must have a minimum 3.50 GPA at the time of graduation.

Additional program information is available from the Office of the Dean of Arts and Sciences.

Undergraduate Academic Bridge Program (Boston)

Director: Dr. Sunnia Ko Davis

The Academic Bridge program, offered on the Boston campus, provides a full-time, structured transition-to-university curriculum in which students take content courses while strengthening their academic English and study skills through classes taught by ESL faculty. While enrolled in the Academic Bridge, students who are conditionally accepted into undergraduate degree programs develop foundational knowledge in the health sciences as they achieve an academic level of English proficiency. Among the skills developed are critical reading of academic course materials, genre-specific writing, note taking, test taking, study strategies, and giving oral presentations. Students are also introduced to program resources, University policies, the Center for Academic Success and Enrichment resources, professional practices, and co-curricular opportunities.

Assessment of English language involves both standardized and alternative approaches to evaluating students' proficiency levels. Upon entering the program, students' language skills are assessed through the MCPHS English Proficiency Exam. In addition to individual class assessments based on performance outcomes, at the end of each semester students again take the MCPHS English Proficiency Exam.

To progress from the Bridge Program, students must earn:

- Grade of C or above in all Bridge courses (ELA 041/ELA 042/ELA 043, ELA 055, ELA 065); AND
- Score of 57 or above on the English Proficiency Exam, OR
- Successful completion (Grade of C or above) of ELA 070 LIB 111 Language Lab AND, if necessary, ELA 071 LIB 112 Language Lab.

Curriculum: Academic Bridge Program
The curriculum for students accepted in the Academic Bridge Program typically includes the courses below. Curriculum may vary depending on a student's intended major and the semester.

Year I—fall

COURSE	TITE	CREDIT HOURS
ELA 041	Academic Bridge to Biology I ***OR***	
ELA 042	Academic Bridge to Anatomy and Physiology I	3
ELA 055	Academic Writing	3
ELA 065	Academic Listening and Speaking	3

BIO 110	Anatomy and Physiology I ***OR***	
BIO 151	Biology I: Cell and Molecular Biology	3
MAT	Math course determined by placement	3
ITM 101	Introduction to the Major	1
TOTAL		16

Year I—spring

COURSE	TITLE.	CREDIT HOURS
ELA 070	LIB.111 Language Lab	1
BIO 210	Anatomy and Physiology II ***OR***	3
BIO 152	Biology II: Biology of Organ Systems ***AND***	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
MAT	Math course determined by placement	3
TOTAL		17-18

MCPHS–Boston
School of Arts and Sciences
Graduate Programs

Member Professors: Anderson, Boyd, Briggs, Griffin, Hart**,** Harvan**,** Richman; Associate Professors: Barden, Kelley, Lewis, McCord, Shifley, Tallon, Xie; Assistant Professors: Bresonis, Heising, Lacina, Levy, Spooner, Young; Instructors: Poulos

Associate Members: Heick, Johnson, Lee, Morazzini, Neumeyer, Nicholson, O'Shea, Rhodes, Shoemaker, Sromek

Degree Programs

Master of Health Science (MHS)
Master of Science (MS) in Pharmaceutical Chemistry
Master of Public Health (MPH)
Doctor of Health Sciences (DHS)

The Arts and Sciences graduate programs are committed to providing leadership, advocacy, and administrative support to enhance the academic and scholarly achievements of our graduate students. These programs promote, enhance, monitor, and support graduate studies by providing effective communication with students from their initial inquiries to the finalization of dissertations and theses. The Arts and Sciences Graduate Council comprises graduate faculty members who are committed educators; they assist in the development and implementation of policies that ensure high standards of excellence in graduate education at MCPHS. Through our graduate programs, the University provides students with opportunities and preparation for leadership in a growing interdependent healthcare learning community.

Research
The School of Arts and Sciences faculty members provide academic expertise to support the research initiatives of master and doctoral candidates by promoting high-quality research training and supervision through clear communication and procedures. The advanced degree is awarded after completion of the approved program, which includes a written thesis, capstone, or dissertation based on the student's research. This research must be an original work of a quality that merits publication following critical peer review.

Programs of Study

Master of Health Sciences (MHS), (Online)
Director: Dr. Anthony Lacina

The Master of Health Sciences (MHS) degree is designed to prepare and advance educational leaders and scholars who will promote excellence in teaching and learning, translate theory and novel strategies to the learning environment, expand the evidence base in health professions education, and link education, research, and practice in transforming systems of healthcare. This is a 30-credit program that may be completed in approximately two years. The program's flexible format meets the needs of working professionals by offering required and elective courses online.

Admission Requirements
To qualify for admission, prospective applicants should have experience as health professionals. Admission decisions are based on the following:

- An earned bachelor's degree from an accredited college or university with a preferred 3.0 GPA
-
- Experience, interest, or current employment in healthcare
- A personal statement. A minimum TOEFL (Test of English as a Foreign Language) score of 90 (Internet-based), 213 (computer-based) or 550 (written) for all candidates for whom English is not the primary language

Curriculum: Master of Health Sciences (MHS)

Health Sciences Required Courses

COURSE	TITLE	CREDIT HOURS
HSC 710	Health Professions Education Across the Higher	3
HSC 715	Educator Competencies	3
HSC 718	Qualities & Characteristics of Leadership	3
HSC 782	Principles and Theories of Teaching and Learning	3
HSC 784	Curriculum and Course Design	3
HSC 786	Assessment and Evaluation of Teaching and Learning	3
HSC 805	Literature Reviews and Focused Research	3
HSC 849	Building an Evidence-Based Practice	3
HSC 731	Preparation for Independent Study	0
HSC 732	Independent Study: Graduate Health Sciences	3
HSC XXX	Health Sciences Elective Course (graduate level)	3
TOTAL		30

Total credits to complete degree requirements: 30 credit hours

Master of Science in Pharmaceutical Chemistry (Boston)

Director: Dr. Songwen Xie

The University offers the Master of Science in Pharmaceutical Chemistry degree as part of the Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry Pathway program. This program is for students who are interested in a career in chemistry and allows them to obtain a master's degree in five years instead of the six to seven years that it would take to complete two degrees separately. Further information about the Bachelor of Science in Chemistry/Master of Science in Pharmaceutical Chemistry Program, including the full curriculum, can be found above in the School of Arts and Sciences section of the Catalog.

This program is designed to take advantage of the University's strengths in the pharmaceutical sciences. Students obtain experience in biotechnology techniques and learn the principles of drug design and mechanisms of action. The Bachelor of Science/Master of Science program includes both a research project and an internship, ensuring that graduates will be prepared to work in industry or pursue a PhD.

There are two options to complete the research requirement: lab-based research and literature-based research. MS students have the opportunity to be teaching assistants. Students should understand that being a TA takes time from conducting research. If a student chooses to teach, it is not guaranteed that they can graduate on time. Students in the sixth year should register for CHE 895 Graduate Study Extension (*0 Cr*) for fall and spring semesters.

Master of Public Health (MPH), (Boston and Online)

Director: Dr. Shir Ginzburg, Assistant Director: Dr. Lindsay Tallon

The Master of Public Health (MPH) degree at MCPHS is a 42-semester-hour program, offered online or face-to-face on the Boston campus. The degree encompasses the foundational competencies as required by the Council on Education for Public Health. Community Health is the concentration that is offered. Community Health is defined as a multi-sector and multi-disciplinary collaborative enterprise that uses public health science, evidence-based strategies, and other approaches to engage and work with communities, in a culturally appropriate manner, to optimize health and quality of life. MPH candidates are required to complete a 120-hour practice requirement in a public health setting of their choice. Opportunities for community service and outreach are made available to students. The program presents opportunities for workforce development and career progression that include networking events, career counseling, and social networking.

Admission Requirement

Applicants are encouraged to apply before the program priority filing date to receive maximum consideration for admission. The Admission Office will continue to review applications until all available seats in the program have been filled.

Once the application is received, the Admission Office will notify the applicant of any missing items that are required for the application to be considered complete. Files are reviewed on a rolling basis, and a decision will be made once all application materials are received.

Curriculum: Master of Public Health (MPH)

Public Health Required Core Courses

COURSE	TITLE	CREDIT HOURS
PBH 701	Foundations of Graduate Study in Public Health	3
PBH 705	Introduction to Environmental Health Sciences	3
PBH 710	Policy and Leadership to Advance Health Equity	3
PBH 740	Methods in Biostatistics and Epidemiology	4
PBH 770	Qualitative Research in Public Health	3
Total Public Health Required Courses		16

Public Health Required Concentration Courses

COURSE	TITLE	CREDIT HOURS
PBH 750	Community Health Science and Practice	3
PBH 755	Health Promotion and Education	3
PBH 760	Program Design and Evaluation of Public Health Interventions	3
PBH 765	Community Health Assessments	3
PBH 890	Public Health Practice Experience	2
PBH 894	Literature Analysis and Certified in Public Health Exam ***OR***	3
PBH 895	Advanced Research Analysis and Interpretation	
PBH 896	Advanced Policy Analysis	3
*PBH 899	Integrative Learning Experience Continuation	0
Total Public Health Required Concentration Courses		20

Public Health Electives (500 level or above, 6 credit hours)

COURSE	TITLE	CREDIT HOURS
PBH 801	Community Organizing	3
PBH 805	Maternal and Child Health	3
PBH 810	Principles of Public Health Emergency Preparedness	3
PBH 815	Mass Communication and Health	3
PBH 820	Public Health Genetics	3
PBH 825	Public Health Law	3
PBH 830	Health Informatics	3
PBH 835	Plagues and Pandemics	3
PBH 840	Health Equity	3
DRA 811	Health Policy and Development Analysis	3
DRA 818	The Law of Healthcare Compliance	3

Total credits to complete degree requirements: 42 credit hours

*PBH 899 Integrative Learning Experience Continuation is a 0-credit course only taken when necessary.

Graduate Certificate, Public Health (Online)

Director: Dr. Shir Ginzburg, Assistant Director: Dr. Lindsay Tallon

The graduate certificate program is open to applicants who desire advanced study in public health and can be applied toward a Master of Public Health upon graduation. Current graduate students earning a master's degree other than public health and wishing to add this graduate certificate should contact the program director.

Admission requirements are more flexible than those of the degree program. A minimum grade of B- in each course is required for award of the certificate.

Curriculum: Graduate Certificate in Public Health

Select any four of the following five courses (Minimum of 12 credit hours total):

COURSE	TITLE	CREDIT HOURS
PBH 701	Foundations of Graduate Study in Public Health	3
PBH 705	Introduction to Environmental Health Sciences	3
PBH 710	Policy and Leadership to Advance Health Equity	3
PBH 740	Methods in Biostatistics and Epidemiology	4
PBH 770	Qualitative Research in Public Health	3

Doctor of Health Sciences (DHS), (Online)

Director: Dr. Anthony Lacina

The MCPHS Doctor of Health Sciences (DHS) is a unique 3-year online program focused on preparing health professionals for the translation of evidence to practice. Through an academic experience uniquely grounded in the principles of evidence-based healthcare, scholarship and interprofessional learning, students are empowered to drive transformational, systemic changes to the health system and address challenges within the workplace.

Mission - The DHS program prepares healthcare clinicians, educators, and leaders to be practicing scholars through an interdisciplinary and interprofessional curriculum that incorporates evidence-based research and scholarship.

Vision - The DHS at MCPHS is a highly respected doctoral degree program that develops students as visionary leaders in healthcare, health professions and health professions education.

Values - The students and faculty in the DHS program share a distinct focus on scholarship, lifelong learning, reflective practice, transformative and visionary leadership, and ethics and integrity in research.

Upon successful completion of the DHS program, students will be able to:

- Identify, critically evaluate, and disseminate evidence to innovatively address problems of practice and advance health professions.
- Collaboratively lead the pursuit of sustainable, ethical, and equitable healthcare across disciplines and professions.
- Apply quality improvement methodologies and systems thinking to enhance the delivery of healthcare and health education.
- Evaluate applications of technology in the innovation, delivery, and evaluation of best practices in healthcare, health promotion, and education
- Analyze national and global health issues by identifying and critically evaluating relevant data to make recommendations focused on health promotion and disease prevention.
- Apply value-based and patient-centered approaches to resolve complex challenges through population-based health approaches.
- Evaluate contemporary issues in community health, healthcare improvement, and professional practice identifying ethical and equitable challenges in making informed recommendations.
- Describe cultural issues in healthcare delivery and identify culturally sensitive approaches to promote solutions supported by current evidence.
- Demonstrate scholarly writing and professional presentation skills in the dissemination of evidence across professions supporting best practices in healthcare delivery, the promotion of health, and health education.

Doctor of Health Sciences (DHS) Curriculum

This innovative 54-credit program was created to meet the needs of current health professionals, administrators, and educators and contains coursework that is progressive and contemporary with modules addressing Healthcare Trends and Challenges, Population Health, and Quality Improvement. The curriculum was developed for interdisciplinary health professionals to prepare them to work in clinical settings, education institutions, hospital and healthcare administration, global or public health, and research environments. The program is flexible, 100% online, and tailored to allow students to sub-specialize in one of three core concentrations: Health Systems Administration, Educational Leadership, or Global Health.

Evidence-Based Capstone
The program culminates in a capstone Evidence-Based Healthcare project. The capstone project offers students the opportunity to acquire skills and knowledge to advocate for best practices and promotes the translation and utilization of evidence. The Doctor of Health Sciences prepares graduates to take on leadership roles in healthcare administration, education, public health, global health, research, and clinical practice.

Admission Requirements
Prospective applicants should have experience working in a healthcare environment, such as being a credentialed health professional, experienced educator, or a researcher in a health-related field. Admission decisions are based on the following:

- An earned Masters degree or equivalent from a regionally accredited college or university
- Credentials or experience as a health professional or health professions educator preferred
- Admissions interview

A minimum TOEFL (Test of English as a Foreign Language) score of 90 (Internet-based), 213 (computer-based) or 550 (written) for all candidates for whom English is not the primary language.

Transfer credits may be accepted on a limited basis, and only when all of the following criteria have been met: The coursework was completed at a regionally accredited institution at the doctoral level with a grade of B, or better. The syllabus demonstrates significant similarity to a required DHS course and has not been applied to any other credential. Any transfer credit request must be accompanied by an official transcript and will be reviewed by the program coordinator.

Curriculum: Doctor of Health Sciences (DHS)

REQUIRED COURSES

Healthcare Trends and Challenges

COURSE	TITLE	CREDIT HOURS
HSC 821	Health and Wellness Across Lifespan	3
HSC 823	Cultural and Mental Health Issues	3
HSC 827	Organizational Behavior and Leadership	3
HSC 828	Interprofessional Education & Collaborative Practice	3

Population Health

COURSE	TITLE	CREDIT HOURS
HSC 831	Demographics and Population Health	3
HSC 833	Disease Population Impacts and Influences	3
HSC 837	Patient-centered Care and Healthcare Integration	3

Quality Improvement

COURSE	TITLE	CREDIT HOURS
HSC 841	Safety and Risk Management	3
HSC 843	Health Systems Monitoring and Evaluation	3
HSC 836	Innovative Healthcare Technology	3

Doctoral Capstone Series

COURSE	TITLE	CREDIT HOURS
HSC 801	Introduction to Doctoral Studies	3
HSC 815	Healthcare Research Methods	3
HSC 852	EBHC Capstone I: Question Development and Search for Evidence	3
HSC 854	EBHC Capstone II: Appraisal of the Evidence	3
HSC 856	EBHC Capstone III: Dissemination of Findings	3
TOTAL for Required Courses		45

CONCENTRATION COURSES: Student must select one concentration (9 credit hours total)

Health Systems Administration

COURSE	TITLE	CREDIT HOURS
HSC 781	Transformative Leadership	3
HSC 785	Health Policy and Reform	3
HSC 787	Financial and Human Resource Management	3

Educational Leadership

COURSE	TITLE	CREDIT HOURS
HSC 782	Principles and Theories of Teaching and Learning	3
HSC 784	Designing Curriculum	3
HSC 786	Assessment and Evaluation	3

Global Health

COURSE	TITLE	CREDIT HOURS
HSC 771	Critical Global Health Issues	3
HSC 773	International Relations and Politics	3
HSC 777	Disaster Management	3
TOTAL for Concentration Courses		9

Total credits to complete degree requirements: 54 credit hours

MCPHS–Boston
Forsyth School of Dental Hygiene

Lori Giblin-Scanlon, RDH, DHSc, Dean of the Forsyth School of Dental Hygiene, Professor for Clinical Programs

Tracye Moore, RDH, MS, EdD, Associate Dean and Professor of Dental Hygiene

Linda D. Boyd, RDH, RD, LD, EdD, Associate Dean and Professor, Graduate Studies

Professors Dominick (Emerita), Jenkins, Giblin-Scanlon, LaSpina, Moore; Associate Professors Adams, Perry, Smilyanski; Assistant Professors Libby, McCarthy, Pillai, Smethers; Faculty Associate Haight

Degree and Certificate Programs

Bachelor of Science in Dental Hygiene (Accelerated)
Bachelor of Science in Predental/Dental Hygiene
Bachelor of Science in Dental Hygiene (Fast Track)
Bachelor of Science in Dental Hygiene Completion*
Dual Bachelor of Science in Health Science/Bachelor of Science in Dental Hygiene
AS to MS in Dental Hygiene Bridge Program *
Master of Science in Dental Hygiene*
Graduate Certificate in Health Professions Education*
*Online programs

In July 2002, the Forsyth School of Dental Hygiene (FSDH) became part of MCPHS. The school was first established in 1916 by the Forsyth brothers as the second dental hygiene program opened in the United States, and today it is the oldest continuously operating dental hygiene program in the country. Students who attend the school, located on the MCPHS Boston or Worcester campus, receive clinical instruction in state-of-the-art dental hygiene clinics to enhance delivery of high-quality oral healthcare services to the public.

FSDH is committed to providing excellence through engagement of students in different learning environments, fostering community partnerships, and advancing knowledge through scholarship and lifelong learning. Forsyth's degree programs prepare students to be leaders in their professions with career options in dental hygiene education, business, research, public health, administration, and clinical practice. The school embraces a strong sense of responsibility to patients, the community, and the dental hygiene profession as well as to high standards of healthcare ethics.

MCPHS offers dental hygiene students the opportunity to learn in the Dr. Esther M. Wilkins Forsyth Dental Hygiene Clinic in Boston and the Esther M. Wilkins Forsyth Dental Hygiene Clinic in Worcester. The Boston facility is equipped with 24 operatories and the Worcester facility has 16 operatories both with digital radiologic imaging technology, intraoral cameras, ergonomic patient and operator chairs, electronic records, and a dental materials laboratory with magnification and flat-screen monitors.

FSDH offers an accelerated Bachelor of Science in Dental Hygiene, a Bachelor of Science in Predental Dental Hygiene, Fast Track Bachelor of Science in Dental Hygiene, a Dual Bachelor of Science in Health Science/Bachelor of Science in Dental Hygiene, a Bachelor of Science Completion in Dental Hygiene, a Master of Science in Dental Hygiene, a bridge program to a Master of Science degree for associate degree holding dental hygienists, and a Graduate Certificate in Oral Health Professions Education for individuals with an earned baccalaureate degree and work experience in a dental or dental hygiene setting. Each program has unique outcome objectives designed to fulfill the professional objectives or degree requirements associated with the individual academic needs of dental hygiene students.

Clinical Component
The clinical component of the program is supported by evidence-based information delivered in active learning and seminars. The student learns to assess risk for oral diseases and provide preventive services. In addition, considerable time is spent developing proficiency in dental hygiene procedures for patients of all ages, with a focus on building skills that support specialized care for unique populations. Dental radiology is delivered throughout the clinical portion of the program. The student develops skills necessary for exposing, and interpreting digital radiographs. Students will participate in community-based clinical rotations that enhance campus learning experiences. The campus learning experiences and rotations may be scheduled weekdays, evenings, and Saturdays. Transportation is not provided to these locations; however, public transportation is available to many extramural sites. As a requirement for graduation and licensure examinations, the student must demonstrate competence by achieving a specified level of performance for each clinical skill and by completing specific patient and service assignments. The student is ultimately responsible for obtaining the patients needed to fulfill these requirements. The student must fulfill all course requirements and competencies each semester to advance within the program.

Forsyth School of Dental Hygiene Policies and Professional Requirements Technical Standards for the Forsyth School of Dental Hygiene

Observation
Candidates and students must have sufficient capacity to observe in the lecture hall, laboratory, and diagnostic and treatment areas of outpatient and inpatient settings. Sensory skills to perform the procedures of the healthcare profession in which students are enrolled are required. In any case where a candidate's or a student's ability to observe or acquire information through sensory modalities is compromised, the candidate or student must demonstrate alternative means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion.

Communication
Candidates and students must be able to communicate effectively in both academic and healthcare settings. Candidates and students must show evidence of effective written and oral communication skills and must be able to communicate with patients in order to elicit and impart information.

Motor
The ability to participate in basic diagnostic and therapeutic maneuvers and procedures is required. Candidates and students must have sufficient motor function to execute movements reasonably required to properly care for all patients and must be able to perform motor functions with or without assistive devices.

Intellectual
Candidates and students must be able to measure, calculate, reason, analyze, and synthesize. Problem solving, one of the critical skills demanded of healthcare professionals, requires all of these intellectual abilities. Candidates and students must be able to read and understand medical literature. In order to complete the specific Health Sciences program, students must be able to demonstrate mastery of these skills and the ability to use them together in a timely fashion in healthcare problem solving and patient care.

Behavioral and Social Attributes
Candidates and students must possess the emotional health and stability required for full utilization of their intellectual abilities, the exercise of good judgment, and the prompt completion of all academic and patient care responsibilities. The development of mature, sensitive, and effective relationships with patients and other members of the healthcare team is essential. The ability to function in the face of uncertainties inherent in clinical practice, flexibility, compassion, integrity, motivation, interpersonal skills, and concern for others are all required.

Students interested in dental hygiene or medical imaging and therapeutics (diagnostic medical sonography, magnetic resonance imaging, nuclear medicine technology, radiation therapy, or radiography) are required to meet technical standards specific to each program. Students should read the technical standards specific to the program they are interested in completing.

Basic Cardiac Life Support
Each student must be certified by an approved Basic Cardiac Life Support for Healthcare Providers course prior to beginning the fall semester of the first clinical year. It is the student's responsibility to obtain and maintain certification throughout the program.

Licensure
The student who successfully completes the academic and clinical components of the Accelerated Bachelor of Science in Dental Hygiene, Predental/Bachelor of Science in Dental Hygiene, or Fast Track Bachelor of Science in Dental Hygiene program will be eligible to take licensure examinations. Successful completion of the National Board Dental Hygiene Examination and a state or regional clinical examination are necessary for licensure. MCPHS provides

education to students in accordance with the regulations set forth by the Massachusetts Board of Registration in Dentistry. MCPHS may not be able to provide the education and/or certification necessary for eligibility for licensure in every state jurisdiction. The student is responsible for determining eligibility requirements for dental hygiene licensure in the jurisdiction in which they plan to practice and to obtain any additional education necessary for licensure in that jurisdiction.

Policy for Reentry and Content Validation after Non progression or Leave of Absence
Students attempting to return from non-progression in the professional curriculum or leave of absence must be cleared to return to classes by their Academic Dean and the Office of Student Affairs (if a medical leave of absence).

Students who are not continuously enrolled in the sequence of undergraduate FSDH professional clinical courses for a period of two semesters or more must validate clinical knowledge and skills before they may reenroll in FSDH professional clinical courses. Validation testing will consist of competency testing to assess clinical and radiography skills related to direct patient care. Program faculty will provide guidance as to what competencies, content, and skills the student needs to review prior to testing, but it is the student's responsibility to prepare for the testing. Students must pass validation testing at a minimum competency level of 75% in order to be eligible to reenter the FSDH professional clinical curriculum. Students may also opt to retake DHY 209/209L POC 1/Pre-clinic and DHY230/230L Radiology instead of undergoing validation testing.

A student who is unable to pass the validation testing at the 75% level will be given the option of retaking DHY 209/209L Process of Care I/Pre-clinic and DHY 230/230L Radiology. If a passing grade is obtained through validation testing or successful completion of DHY 209/209L and DHY 230/230L, the student may reenter the FSDH program on a space-available basis. If the student does not pass the validation test and does not reenroll or pass DHY 209/209L and DHY 230/230L, they will be dismissed from the program.

Reentry into the FSDH program is subject to clinical placement availability. (NOTE: There is no guarantee placement will be available at the student's desired time of return.) This policy applies to all undergraduate dental hygiene programs.

Accelerated students who achieve the minimum passing grade of C, but do not meet the minimum cumulative GPA of 2.5, may enroll in DHY 202 Dental Anatomy in the Year II fall semester but may not enroll in other professional courses. This will result in a change in the year of graduation.

Performance in the Bachelor of Science in Dental Hygiene – Boston

Accelerated BSDH
To remain in good academic standing, students must maintain:

- A cumulative GPA of 2.5 or higher.
- A professional GPA of 2.5 or higher throughout the program.

Predental BSDH
To remain in good academic standing, students must maintain:

- During the Pre-Professional Phase:
  - A cumulative GPA of 2.5 or higher.
- To enter the Professional Phase (Year III) and remain in good academic standing:
  - A cumulative GPA of 3.0 or higher.

Progression into the Professional Phase of the Bachelor of Science in Dental Hygiene – Boston

Accelerated BSDH
To progress into the Professional Phase (Year I Summer), students must:

- Earn a minimum grade of C in the following prerequisite science courses:
  - BIO 110 and BIO 210 (Anatomy and Physiology)
  - CHE 110 and CHE 210 (Chemistry)
  - BIO 255 (Microbiology)
- Have an overall cumulative GPA of 2.5 or higher.

During Year I Summer (first term of the professional phase), students must enroll in DHY 204: *Head and Neck Anatomy*, which also requires a minimum grade of C to continue in the program. If the cumulative GPA is below 2.5 after Year I Summer (but all required course grades, including DHY 204, are C or higher):

- Students may enroll in DHY 202: *Dental Anatomy* in Year II Fall, but no other professional courses may be taken.
- Graduation will be delayed.

If DHY 202 is completed with a C or better, and the cumulative and professional GPA reaches 2.5:

- The student may progress into the remaining Year II Fall professional courses in the following fall semester.
- Graduation will be delayed.

Predental BSDH

To progress into the Professional Phase (Year III Fall), students must:

- Earn a minimum grade of C in:
  - BIO 151, BIO 152, BIO 110, BIO 210, BIO 255
  - CHE 131 and CHE 132
- Have an overall cumulative GPA of 3.0 or higher.

If the cumulative GPA is below 3.0 (but all required grades are C or higher):

- Students may enroll in the following two professional courses in Year III Fall:
  - DHY 202: *Dental Anatomy*
  - DHY 204: *Head and Neck Anatomy*
- No other professional courses may be taken.
- Graduation will be delayed.

If DHY 202 and DHY 204 are completed with grades of C or better, and the cumulative and professional GPA reaches 3.0:

- The student may progress into the remaining Year III Fall professional courses in the following fall semester.
- Graduation will be delayed.

Dismissal from the Program

Students (Accelerated or Predental) will be dismissed from the program if they:

- Do not meet the minimum grade and GPA requirements at the end of the first year of the professional phase; or
- Do not meet GPA/grade requirements after attempting DHY 202 and DHY 204; or
- Receive three grades below C in any combination of DHY courses.

Progression within the Professional Phase of the Bachelor of Science in Dental Hygiene

To progress through the didactic and clinical phases of the Bachelor of Science in Dental Hygiene program, students must earn a final grade of C or better (≥ 75%) in all professional courses. A final grade below C in any professional course requires the student to repeat the course, which will result in a delay in program progression (i.e., the student will be placed on non-progression status) because most professional courses are offered only once per academic year. A student may be placed on non-progression status only once during their enrollment in the Forsyth Dental Hygiene program. A second instance of non-progression in a subsequent semester will result in dismissal from the program.

Bachelor of Science in Dental Hygiene (Accelerated)

The student who begins the Accelerated Bachelor of Science in Dental Hygiene program is expected to complete the program in three years. To meet the residency requirement for the BS in Dental Hygiene degree, students must complete at least 60 credit hours at the University.

Curriculum: Bachelor of Science in Dental Hygiene Program (Accelerated)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 143	Foundations of Algebra and Trigonometry	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 120	Introduction to Psychology	3
TOTAL		17

Year I — summer session

COURSE	TITLE	CREDIT HOURS
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
DHY 232	Nutrition	2
DHY 204	Head and Neck Anatomy	2
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
MAT 261	Statistics	3
DHY 201	Introduction to the Dental Hygiene Profession	0
TOTAL		14

Year II — fall

COURSE	TITLE	CREDIT HOURS
DHY 202	Dental Anatomy, Embryology, and Histology	2
DHY 209	Dental Hygiene Process of Care I (with lab)	6
DHY 230	Dental Radiology (with lab)	3
DHY 231	Dental Materials (with lab)	3
TOTAL		14

Year II — spring

COURSE	TITLE	CREDIT HOURS
DHY 211	Dental Hygiene Process of Care I I	3
DHY 223	Clinical Dental Hygiene I	3
DHY 233	Periodontology	3
DHY 330	Pathology	3
	Distribution Elective	3
TOTAL		15

Year II — summer session

COURSE	TITLE	CREDIT HOURS
	Distribution Elective	3
DHY 420O	Oral Health Research	3
DHY 343	Pain Management (with lab)	3
PSB 320O	Introduction to Healthcare Delivery	3
DHY 350	Community Oral Health	3
DHY 300	Ongoing Clinic Proficiency	0
TOTAL		15

Year III — fall

COURSE	TITLE	CREDIT HOURS
DHY 310	Dental Hygiene Process of Care III	3
DHY 323	Clinical Dental Hygiene II	4
DHY 342	Pharmacology	3

DHY 460	Capstone in Dental Hygiene	2
	Program Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
DHY 311	Dental Hygiene Process of Care IV	2
DHY 324	Clinical Dental Hygiene III	4
LIB 512	Healthcare Ethics	3
DHY 345	Practice and Career Management	2
DHY 450	Dental Hygiene Content Review	1
	Distribution Elective	3
TOTAL		15

Total credits to complete degree requirements: 120 credit hours

Dental Hygiene Program Electives

An overall grade point average and a professional grade point average will be calculated for each student in the Dental Hygiene program. Elective courses and those required for admission into the Dental Hygiene program are omitted when calculating the professional grade point average. All course electives, including program electives, count toward the student's cumulative grade point average.

The program elective must be a distinct course from the distribution electives; for example, Abnormal Psychology cannot fulfill the behavioral requirement as well as the program elective requirement. Choose any higher level (300 or 400) BEH, HUM, SSC, PSB, PBH, and HSC elective course as the dental hygiene program elective.

Bachelor of Science in Dental Hygiene (Fast Track) Worcester Campus

A student who holds a baccalaureate degree or higher from an accredited college or university and/or completed prerequisite course work may pursue the accelerated 16-month Fast Track Bachelor of Science in Dental Hygiene. The candidate for this program must have completed the prerequisite college courses listed below. Transfer students without a bachelor's degree may be admitted as Fast Track students but must meet all requirements for the accelerated BS in Dental Hygiene described above to achieve the 120 credit hours necessary to earn a first bachelor's degree. An official college/university transcript will be reviewed to determine eligibility for transfer credits. The student in the Fast Track BS program takes courses in dental hygiene theory and practice and receives clinical instruction in the Esther M. Wilkins Forsyth Dental Hygiene Clinic (Worcester). Upon successful completion of the program, the student becomes eligible for dental hygiene licensure examinations.

Prerequisites for the Fast Track Bachelor of Science program for Students with a Bachelor's Degree include the following:

COURSE	CREDIT HOURS
Anatomy and Physiology I and II (with labs)	8
Basic Chemistry I and II (with labs)	8
Microbiology (with lab)	4
Statistics	3
Introduction to Psychology	3
Introduction to Sociology	3
Expository Writing I & II	6
LIB 220 Introduction to Interpersonal Communication for Health Professionals	3
TOTAL	38

*Additional Courses for the Fast-Track Bachelor of Science program for Students without a Bachelor's Degree include the following:**

COURSE	CREDIT HOURS
College Algebra	3
American Culture, Identity, and Public Life *(Acceptable substitutions: American History, US History, US Government, Western Civilization)*	3
Humanities Elective *(Acceptable courses include Literature, Creative Writing, Philosophy, Ethics, Religious Studies, Select Fine Arts, Advanced Level Languages)*	3
Behavioral Science Elective *(Acceptable courses: any upper level psychology course)*	3
Social Science Elective *(Acceptable courses include Cultural Studies, Anthropology, Government, American Studies, Women's and Gender Studies, Ethnic Studies, or an additional History/Political Science course)*	3
TOTAL	15

*Students entering without a prior Bachelor's degree must also take PSB 320 Introduction to Health Care Delivery during the program's summer term for a total of 16 credits. Additionally, these students will also take the Dental Hygiene Program Elective during the last semester of the program, increasing the semester credits to 17.

The Dental Hygiene program elective is any higher level (300 or 400) BEH, HUM, SSC, PSB, and HSC elective course.

Curriculum: Bachelor of Science in Dental Hygiene (Fast Track) Worcester Campus

Year I — fall

COURSE	TITLE	CREDIT HOURS
DHY 202	Dental Anatomy, Embryology, and Histology	2
DHY 204	Head and Neck Anatomy	2
DHY 209	Dental Hygiene Process of Care I (with lab)	6
DHY 230	Dental Radiology (with lab)	3
DHY 231	Dental Materials (with lab)	3
DHY 232	Nutrition	2
TOTAL		18

Year I — spring

COURSE	TITLE	CREDIT HOURS

DHY 211	Dental Hygiene Process of Care II	3
DHY 223	Clinical Dental Hygiene I	3
DHY 233	Periodontology	3
DHY 330	Pathology	3
DHY 343	Pain Management (with lab)	3
LIB 512	Healthcare Ethics	3
TOTAL		18

Year I — summer session

COURSE	TITLE	CREDIT HOURS
DHY 310	Dental Hygiene Process of Care III	3
DHY 350	Community Oral Health	3
DHY 420	Oral Health Research	3
DHY 323	Clinical Dental Hygiene II	4
PSB 320	Introduction to Health Care Delivery (online)	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
DHY 311	Dental Hygiene Process of Care IV	2
DHY 324	Clinical Dental Hygiene III	4
DHY 342	Pharmacology	3
DHY 460	Capstone in Dental Hygiene	2
DHY 345	Practice and Career Management	2
DHY 450	Dental Hygiene Content Review	1
DHY Elective	Dental Hygiene Program Elective (online)	3
TOTAL		17

Total institutional credits to complete degree requirements: 69 credit hours

Students will graduate with a Bachelor of Science in Dental Hygiene following successful credit transfer of any college prerequisites and completion of the required dental hygiene courses listed above.

Bachelor of Science in Predental/Dental Hygiene – Boston Campus

For students interested in applying to dental school upon graduating with a Bachelor of Science in Dental Hygiene. This 10 semester/37-month program includes the higher-level science and math courses required for application to dental school. The first 21 months of the program students will take the higher-level science courses. The last 16 months are the dental hygiene curriculum. Upon successful completion of the program, the student becomes eligible for dental hygiene licensure examinations. The minimum passing grade of C, or higher, in Anatomy and Physiology (BIO 110/110L / BIO 210/210L), Biology I (BIO 151/151L), Biology II (BIO 152/152L), Chemistry (CHE 131/131L / CHE 132/132L), and Microbiology (BIO255/255L) and an overall cumulative grade point average (GPA) of 3.0 are required to progress and remain in good academic standing into the fall of Year III (professional phase) of the program.

To progress within the didactic and clinical phase of the Predental/Dental Hygiene Bachelor of Science program, students must achieve a final grade of C or better (≥ 75%). Obtaining a final grade below C in any professional course results in the student having to repeat the course. Progression through the program will be delayed (i.e., the student will be on non-progression status) because most professional courses are offered only once per academic year. A dental hygiene student may be placed on non-progression status only once during his or her tenure in the Forsyth Dental Hygiene program. A student who receives a second non-progression status in a subsequent semester will be dismissed from the dental hygiene program.

The student who begins the accelerated Predental Dental Hygiene Bachelor of Science program is expected to complete the program in three years (37 months).

Curriculum: Bachelor of Science in Predental/Dental Hygiene – Boston Campus

Year I – fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
BIO 150L	Biology I Lab	1
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research3	
MAT 151	Calculus I	3
TOTAL		15

Year I – spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
TOTAL		14

Year I – summer

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HUM or SSC	Distribution Elective	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		14

Year II – fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
BEH 300/400	DHY Program Elective & BEH elective	3
PHY 270	Foundations of Physics	3
PHY 272L	Foundations of Physics Laboratory	1
TOTAL		14

Year II – spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Lab	1
LIB 512	Healthcare Ethics	3
PHY 274	Foundation of Physics II	3
PHY 274L	Foundation of Physics II Lab	3
SSC or HUM	Distribution Elective	3
TOTAL		14

Year II – summer

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3

BIO 255L	Microbiology Laboratory	1
MAT 261	Statistics	3
PSB 339	Essentials of Medical Biochemistry	3
PBS 320	Introduction to Health Care Delivery	3
DHY 232	Nutrition	2
DHY 201	Intro to the Dental Hygiene Profession	0
TOTAL		15

Year III – fall

COURSE	TITLE	CREDIT HOURS
DHY 202	Dental Anatomy and Histology	2
DHY 204	Head and Neck Anatomy	2
DHY 209	Dental Hygiene Process of Care I (with lab)	6
DHY 230	Dental Radiology with Lab	3
DHY 321	Dental Materials with Lab	3
TOTAL		16

Year III – spring

COURSE	TITLE	CREDIT HOURS
DHY 211	Dental Hygiene Process of Care II	3
DHY 223	Clinic I	3
DHY 233	Periodontology	3
DHY 330	Pathology	3
DHY 343	Pain Management (with lab)	3
TOTAL		15

Year III – summer

COURSE	TITLE	CREDIT HOURS
DHY 310	Process of Care III	3
DHY 350	Community Oral Health	3
DHY 420	Oral Health Research	3
DHY 323	Clinical Dental Hygiene II	4
TOTAL		13

Year IV – fall

COURSE	TITLE	CREDIT HOURS
DHY 311	Dental Hygiene Process of Care IV	2
DHY 324	Clinical Dental Hygiene III	4
DHY 342	Pharmacology	3
DHY 460	Capstone in Dental Hygiene	2
DHY 345	Practice & Career Management	2
DHY 450	Dental Hygiene Content Review	1
TOTAL		14

Total credits to complete degree requirements: 147 credit hours

Curriculum: Bachelor of Science in Predental/Dental Hygiene – with PreCalculus – Boston Campus

Year I – fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
BIO 150L	Biology I Lab	1
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT150	PreCalculus	3
TOTAL		15

Year I – spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT151	Calculus I	3
LIB 120	Introduction to Psychology	3
TOTAL		17

Year I – summer

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HUM or SSC	Distribution Elective	3
LIB 220 I	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		14

Year II – fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
BEH 250	DHY Program Elective & BEH elective	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics Lab I	1
TOTAL		14

Year II – spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Lab	1
LIB 512	Healthcare Ethics	3
PHY 274	Foundation of Physics II	3
PHY 274L	Foundation of Physics II Laboratory	1
SSC or HUM	Distribution Elective	3
TOTAL		14

Year II – summer

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
MAT 261	Statistics	3
PSB 339	Essentials of Medical Biochemistry	3
PBS 320	Introduction to Health Care Delivery	3
DHY 232	Nutrition	2
DHY 201	Intro to the Dental Hygiene Prof	0
TOTAL		15

Year III – fall

COURSE	TITLE	CREDIT HOURS
DHY 202	Dental Anatomy and Histology	2
DHY 204	Head and Neck Anatomy	2
DHY 209	Dental Hygiene Process of Care I (with lab)	6
DHY 230	Dental Radiology with Lab	3
DHY 321	Dental Materials with Lab	3
TOTAL		16

Year III – spring

COURSE	TITLE	CREDIT HOURS
DHY 211	Dental Hygiene Process of Care II	3
DHY 223	Clinic I	3
DHY 233	Periodontology	3
DHY 330	Pathology	3
DHY 343	Pain Management (with lab)	3
TOTAL		15

Year III – summer

COURSE	TITLE	CREDIT HOURS
DHY 310	Process of Care III	3
DHY 350	Community Oral Health	3
DHY 420	Oral Health Research	3
DHY 323	Clinical Dental Hygiene II	4
TOTAL		13

Year IV – fall

COURSE	TITLE	CREDIT HOURS
DHY 311	Dental Hygiene Process of Care IV	2
DHY 324	Clinical Dental Hygiene III	4
DHY 342	Pharmacology	3
DHY 460	Capstone in Dental Hygiene	2
DHY 345	Practice & Career Management	2
DHY 450	Dental Hygiene Content Review	1
TOTAL		14

Total credits to complete degree requirements: 150 credit hours.

Dual Degree Bachelor of Science in Health Sciences/Bachelor of Science in Dental Hygiene

The BSHS/BSDH Dual Degree program provides a pathway to dental hygiene for students enrolled in the BSHS Program in Boston who are interested in pursuing the BSDH at the Forsyth School of Dental Hygiene in Boston. The program will allow students to earn a BSHS while at the same time completing some BSDH courses that can then be applied to the BSDH.

Health Sciences students who are interested in the Dual Degree should contact transfers@mcphs.edu

Curriculum: Dual Degree Bachelor of Science in Health Sciences/Bachelor of Science in Dental Hygiene

Year I – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		14

Year I – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HSC 110	Health Sciences Seminar I	1
LIB 112	Writing in the Humanities	3
MAT 141	Algebra and Trigonometry	3
	Social Sciences Elective (SSC)	3
TOTAL		14

Year II – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
HSC 220	Personal Health and Wellness	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
TOTAL		16

Year II – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Lab	1
HSC 210	Health Sciences Seminar II	1
HSC.308	Healthcare Leadership and Teamwork	3
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 410	Health Research Methods	3
TOTAL		14

Year III – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Lab	1
HSC 301	Health Promotion	3
HSC 305	Navigating Healthcare Systems3	

	Social Science Elective (SSC)	3
	Humanities Elective (HUM)	3
TOTAL		16

Year III – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
HSC 311	Health Sciences Seminar III	1
HSC 340	Health and Safety	3
HSC 401	Public Health and Policy	3
	Behavioral Science Elective (BEH)	3
	General Elective	3
	Health Sciences Elective (HSC)	3
TOTAL		16

Year IV – Forsyth School of Dental Hygiene – fall

COURSE	TITLE	CREDIT HOURS
DHY 202	Dental Anatomy, Histology & Embryology	2
DHY 204	Head and Neck Anatomy	2
DHY 209	Dental Hygiene Process of Care I (with lab)	6
DHY 230	Radiology (with lab)	3
DHY 231	Dental Materials (with lab)	3
DHY 232	Nutrition	2
TOTAL		18

Year IV – Forsyth School of Dental Hygiene – spring

COURSE	TITLE	CREDIT HOURS
DHY 211	Dental Hygiene Process of Care II	3
DHY 223	Clinical Dental Hygiene I	3
DHY 233	Periodontology	3
DHY 330	Pathology	3
DHY 343	Pain Management (with lab)	3
TOTAL		15

Year IV – Forsyth School of Dental Hygiene – summer

COURSE	TITLE	CREDIT HOURS
DHY 310	Dental Hygiene Process of Care III	3
DHY 350	Community Oral Health	3
DHY 420O	Oral Health Research	3
DHY 323	Clinical Dental Hygiene II	4
TOTAL		13

Year V – Forsyth School of Dental Hygiene – fall

COURSE	TITLE	CREDIT HOURS
DHY 311	Dental Hygiene Process of Care IV	2
DHY 324	Clinical Dental Hygiene III	4
DHY 342	Pharmacology	3
DHY 460	Capstone in Dental Hygiene	2
DHY 345	Practice and Career Management	2
DHY 450	Dental Hygiene Content Review	1
TOTAL		14

Total credits to complete degree requirements: 152 credit hours

Bachelor of Science in Dental Hygiene Completion (Online)

Program Director: Dr. Linda Boyd

This option is open to dental hygienists who hold an Associate Degree or certificate from an accredited dental hygiene program and licensure appropriate for practice in the state or country where the student resides. Upon admission, the student will be awarded credit for prior dental hygiene professional coursework completed in his or her associate degree up to a maximum of 44 semester credits. Students also must complete the MCPHS Arts and Sciences core curriculum requirements (minimum 40 semester credits), dental hygiene professional coursework at MCPHS (minimum 36 semester credits). A total of 120 semester credits are required for the Bachelor of Science in Dental Hygiene.

Admission Requirements

For admission to the program, an applicant must have:

- graduated from an accredited dental hygiene program,
- earned a minimum cumulative grade point average (GPA) of 2.5 (on a 4.0 scale) in dental hygiene program courses,
- completed one year of work experience in healthcare (e.g., as a dental assistant, nurse's aide, social worker),
- successfully completed a national credentialling examination such as the National Board Dental Hygiene Examination or National Dental Hygiene Certification Examination,
- obtained a license to practice dental hygiene or eligibility for licensure in at least one jurisdiction in the United States, Canada, or other country,
- achieved a minimum score of 79 on the Test of English as a Foreign Language (TOEFL) *is required of all candidates for whom English is not the native language*
- completed the application for admission,
- current employment in dental hygiene, and
- attended the Orientation session prior to the first semester of the program.

Prior Degree or Certificate

A maximum of forty-four (44) semester credits will be awarded to a student who is a registered dental hygienist who has completed an associate degree or certificate program in dental hygiene through a regionally accredited educational institution.

Preprofessional Core Curriculum Courses

Prior completion of the required preprofessional courses listed below as well as the general electives is preferred. Courses already completed that meet MCPHS transfer credit policies will be accepted for transfer credit. The remaining requirements beyond those transferred during the admission process must be completed at MCPHS unless approved in advance by the Admission Office or, post-matriculation, by the Center for Academic Success and Enrichment (CASE).

COURSE	CREDIT HOURS
Anatomy and Physiology I (with lab)	4
Basic Chemistry I (with lab)	4
College Level Life Sciences	3
Algebra and Trigonometry	3
Communication Studies	3
Composition I and II	6
Introduction to Psychology	3
Introduction to Sociology	3
Behavioral Sciences course	3
Social Sciences course	6
Humanities course	3
TOTAL	41

Professional Courses

COURSE	TITLE	CREDIT HOURS
HSC 320	Writing for Health Science Professionals	3
DHY 446	Oral Health in Special Care Populations	3
DHY 442	Evidence-Based Dental Hygiene Practice	3
MAT 261	Statistics	3

DHY 420	Oral Health Research Methods	3
LIB 512	Healthcare Ethics	3
	Dental Hygiene Program Electives	18
TOTAL		36

Dental Hygiene Program Electives:
The program electives must be distinct courses from the distribution electives; for example, Abnormal Psychology cannot fulfill the behavioral requirement as well as the professional elective requirement.

Choose any higher level (300 or 400) elective courses.

Minimum number of credits to complete Baccalaureate in Dental Hygiene: 120 credit hours

Prior dental hygiene program (44), Arts & Sciences core curriculum (41), required professional component (36).

Master of Science in Dental Hygiene (Online)

Program Director Dr. Linda Boyd

The Master of Science degree offered by the Forsyth School of Dental Hygiene is a part-time, 36-credit-hour, postbaccalaureate, online master's degree program culminating in a research project. The program is specifically designed for practicing dental hygienists and provides a flexible learning environment through online technologies.

The purpose of this program is to prepare qualified dental hygiene professionals for careers and leadership roles in state and community-based public health administration, dental professional education, dental industry marketing and product development, research, and public and private health agencies and organizations.

Program Admission and Degree Requirements
For admission to the Master of Science in Dental Hygiene program, an applicant must have:

- graduated from an accredited dental hygiene program;
- earned a bachelor's degree from an accredited college or university or completed the MCPHS Master of Science Degree Bridge program for associate degree dental hygienists;
- completed one year of work experience in healthcare;
- achieved a minimum score on the Test of English as a Foreign Language (TOEFL) as detailed in the current MCPHS *catalog is required of all candidate for whom English is not the native language;*
- completed the application for admission to an online program as described in the current MCPHS *catalog*, and
- attended the Orientation session prior to the first semester of the program.

The Master of Science in Dental Hygiene degree will be conferred upon the dental hygiene graduate student who has mastered the advanced professional knowledge and who:

- successfully completes the 36 credit hours of required courses listed in the program curriculum;
- maintains a cumulative grade point average (GPA) of 3.0 for all courses completed at MCPHS;
- presents and successfully defends an approved research project; and
- completes all requirements for the MSDH degree within a period of six years.

The Master's research project is the final academic experience of the program. Each student will demonstrate attainment of program competencies; apply knowledge, skills, and values acquired in the program to a specific problem or issue; and independently demonstrate mastery and integration of curriculum concepts and methods. The topic, developed with guidance from the student's advisor, will be related to oral health, dental hygiene practice, or dental professions education. The student will present the research and results to professional colleagues.

Curriculum: Master of Science in Dental Hygiene (Online)

COURSE	TITLE	CREDIT HOURS
DHY 701	Essentials of Public Health	3
DHY 703	Program Planning and Evaluation	3
DHY 706	Health Education and Health Behavior	3
DHY 714	Research Methodology and Statistics	3
DHY 722	Health Policy and Finance	3
DHY 827	Administration and Management	3
DHY 830	Evidence-Based Literature Review	3

DHY 831	Research Design and Proposal Development	3
DHY 832	Data Analysis and Manuscript Preparation	3
DHY 895*	Graduate Extension of Thesis	0
TOTAL		27

* All graduate students involved in the research project must continue to register for Graduate Extension (DHY 895O) and pay the registration fee until it is completed.

CONCENTRATION COURSES		CREDIT HOURS
Dental Hygiene Education		
DHY 751	Adult Learning Theory & Clinical Teaching for Health Professions Ed	3
DHY 753	Curriculum and Course Design in Health Prof Education	3
DHY 755	Health Professions Education Practicum	3
TOTAL		9

OR

CONCENTRATION COURSES		CREDIT HOURS
Public Health		
DHY 715/DRA809	Epidemiology	3
DHY 840	Advanced Dental Hygiene Practice	3
DHY 835	Public Health Practicum	3
TOTAL		9

AS to MS in Dental Hygiene Bridge Program (Online)

Program Director Dr. Linda Boyd

The AS to MS in Dental Hygiene Bridge Program is designed to facilitate progression of the dental hygienist with an associate degree to graduate study by building on curriculum content in associate degree programs and awarding credit for general education courses completed.

A dental hygienist accepted into the AS to MS in Dental Hygiene Bridge Program may transfer up to 100 semester credit hours previously earned in a dental hygiene program and prerequisite general education courses. Transfer credit will be given only for those courses in which the student earned at least a C grade (2.0). Six courses (18 credit hours) compose the bridge curriculum, covering baccalaureate dental hygiene competencies and preparing the dental hygienist for graduate-level education. A bachelor's degree will not be awarded upon completion of the bridge curriculum. The student matriculates in the dental hygiene master's degree program following successful completion of the bridge courses and earning an overall grade point average (GPA) of 2.5.

The program will be offered online to allow participation of practicing dental hygienists and current dental hygiene educators.

Admission Requirements

For admission to the program, an applicant must have:

- graduated from an associate degree or certificate in dental hygiene from an accredited program,
- earned a minimum cumulative GPA of 2.5 (on a 4.0 scale) in dental hygiene program courses,
- successfully completed a national credentialling examination such as the National Board Dental Hygiene Examination or National Dental Hygiene Certification Examination,
- completed one year of work experience in healthcare,
- successfully completed the National Board Dental Hygiene Examination,
- obtained a license to practice dental hygiene in at least one jurisdiction in the United States, Canada, or other country,
- achieved a minimum score on the TOEFL or IELTS as detailed in the current MCPHS *catalog is required of all candidates for whom English is not the native language;*
- completed the application for admission to the online program as described in the current MCPHS *catalog;*
- *c*urrent employment in dental hygiene*; and*
- attended Orientation prior to the the first semester of the program.

Curriculum: AS to MS Dental Hygiene Bridge

Up to 100 semester credit hours in general education and dental hygiene education courses may be transferred; a minimum grade of C is required for transfer credit.

BRIDGE COURSES		CREDIT HOURS
HSC 320	Writing for Health Science Professionals	3
DHY 420	Oral Health Research Methods	3
DHY 442	Evidence-Based Dental Hygiene Practice	3
DHY 446	Oral Health in Special Care Populations	3
MAT 261	Statistics	3
LIB 512	Healthcare Ethics	3
TOTAL		18

COURSE	TITLE	CREDIT HOURS
DHY 701	Essentials of Public Health	3
DHY 703	Program Planning and Evaluation	3
DHY 706	Health Education and Health Behavior	3
DHY 714	Research Methodology and Statistics	3
DHY 722	Health Policy and Finance	3
DHY 827	Administration and Management	3
DHY 830	Evidence-Based Literature Review	3
DHY 831	Research Design and Proposal Development	3
DHY 832	Data Analysis and Manuscript Preparation	3
DHY 895*	Graduate Extension of Thesis	
TOTAL		27

CONCENTRATION COURSES		CREDIT HOURS
Dental Hygiene Education		
DHY 751	Adult Learning Theory & Clin Teaching for Health Professions Ed	3
DHY 753	Curriculum and Course Design in Health Prof Education	3
DHY 755	Health Professions Education Practicum	3
TOTAL		9

OR

CONCENTRATION COURSES		CREDIT HOURS
Public Health		
DHY 715/DRA 809	Epidemiology	3
DHY 840	Advanced Dental Hygiene Practice	3
DHY 835	Public Health Practicum	3
TOTAL		9

** All graduate students involved in the research must continue to register for Graduate Extension (DHY 895O) and a pay registration fee until it is completed.*

Graduate Certificate in Health Professions Education (Online)

As an oral health professions educator, you can help shape the future direction of oral health care as a leader and educator. In this program, you'll build on your previous Bachelor's degree in Dental Hygiene or another field to advance your career as an oral health professions educator.

This 9-credit hour program is offered entirely online for practicing dental professionals, including licensed dentists, dental hygienists and dental assistants, and provides education methodology courses to enhance preparation for teaching in dental, dental hygiene, or dental assisting education. When you graduate, you'll be well prepared to teach courses in a variety of educational settings, such as community colleges, four-year institutions, and vocational/technical schools.

Admission Requirements

For admission into the program, an applicant must have:

- Graduated with a bachelor's degree in a health profession from an accredited college or university
- Achieved a minimum TOEFL score of 79 or a score of 6.5 on the IELTS is required of all candidates for whom English is not the native language

Curriculum: Graduate Certificate in Health Professions Education (Online)

COURSE	TITLE	CREDIT HOURS
DHY 751	Adult Learning Theory and Clinical Teaching for Health Professions Ed	3
DHY 753	Curriculum and Course Design in Health Professions Education	3
DHY 755	Health Professions Education Practicum	3
TOTAL		9

MCPHS–Boston
School of Healthcare Business and Technology

Michael Spooner, EdD, MHA; Dean, Associate Professor

James Goss, DHA, MHA; Assistant Professor of Healthcare Administration; BS in Healthcare Management Program Director

Degree and Certificate Programs

Bachelor of Science in Data Science & Health Analytics
Bachelor of Science in Data Science Biotech Research & Development
Bachelor of Science in Health Information Management & Technology
Bachelor of Science in Healthcare Management
Bachelor of Science in Healthcare Management – Completion
Master of Business Administration in Healthcare Technology

The School of Healthcare Business and Technology was established in March 2018 to provide undergraduate and graduate students with a unique blend of business competencies and healthcare knowledge. There is high demand for professionals who understand healthcare systems and processes. The School offers both undergraduate and graduate programs. These programs provide didactic coursework combined with practical experiences, designed to provide students with skills and capabilities that easily transfer to the workplace.

Bachelor of Science in Data Science & Health Analytics

The STEM-eligible Bachelor of Science in Data Science & Health Analytics on the Boston Campus provides didactic and experiential education to prepare students with a foundational understanding of public health, data science, and coding application in health and life science fields. The four year, 121-credit curriculum prepares students for careers that span healthcare, life sciences, and business. The most common opportunities include technology companies, consumer health, healthcare finance, insurance companies, and biotechnology. There are also related sectors, including software, consulting, and biotech and life science organizations, that are increasingly relying on data and posting prominent jobs. Graduates are also equipped for entry into graduate programs in business, public administration, and health analytics.

The BS in Data Science & Health Analytics provides students with a foundational understanding of public health, data science, and coding applications in health and life science fields. The public health foundation supports an understanding of disparities in care that can be explained and identified through data related to healthcare. The program includes internships and experiential education paired with culminating coursework.

Upon completion of this program, graduates will be able to:

- Apply fundamental principles of health data science, including statistical modeling, data management, and data manipulation, to identify patterns and gain actionable insight to address challenges in industry, life sciences, and healthcare.
- Design workflows and applications as solutions to complex challenges in healthcare delivery.
- Collaborate across teams and functions to define problems, identify appropriate data, analyze sufficiency, and create visualizations to support communication and decision-making.
- Communicate effectively about properties of computer coding, task workflows, databases, and issues with data, including sufficiency, representation, and distribution.
- Explain machine learning, algorithms, and ethical challenges they represent in context with data science and their impacts on society.
- Evaluate data integrity and sufficiency and critically question analytical methods and approaches to manipulation across large data sets.
- Describe critical insight derived from data.

Curriculum: Bachelor of Science in Data Science & Health Analytics

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I	3
HIN 100	Medical Terminology	1
HIN 110	Biomedical Informatics	3
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II	3
DSC 110	Intro to Data Science & Programming	3
HCM 265	The Business of Biotech	3
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
TOTAL		15

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 113/113L	Chemistry and Society & lab	4
DSC 220	Programming I	3
MAT 261	Statistics	3
PBH 250	Introduction to Public Health	3
MAT 2XX	Linear Algebra	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
DSC 215	Data Analysis with R	3
DSC 245	Data Science and Analytics	3
DSC 230	Programming II	3
LIB	Communication Requirement (LIB 220/252)	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		15

Year III — fall

COURSE	TITLE	CREDIT HOURS
DSC 315	Big Data	3
HCM 300	US Healthcare: Org & Delivery	3
MAT 461	Biostatistics	3
PBH 260	Public Health Research Methods	3
HIN 337	Data, Compliance, and Legal	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
DSC 301	Profession & Practice in Data Sci	1
DSC 320	Machine Learning	3
LIB 512	Healthcare Ethics	3
	BEH Dist Elective	3

PBH 360	Health Data Collection Mgmt	3
	SSC Dist Elective	3
TOTAL		16

Year IV — fall

COURSE	TITLE	CREDIT HOURS
DSC 421	Data Sci Prof Prct Experience I	3
DSC 420	Advanced Machine Learning	3
	General Elective	3
	HUM Dist Elective	3
HIN 410	Data Visualization and Display	3
TOTAL		15

Year IV — spring

COURSE	TITLE	CREDIT HOURS
DSC 423	Data Sci Prof Prct Experience II	3
DSC 408	Deep Learning	3
	Data Science Elective	3
	Data Science Elective	3
	General Elective	3
TOTAL		15

Total credits to complete BS degree requirements: 121 credit hours

Bachelor of Science in Data Science Biotech Research & Development

The STEM-eligible Bachelor of Science in Data Science & Biotech Research and Development on the Boston Campus provides didactic and experiential education to prepare students with a foundational understanding of lab sciences, coding and programming, and data science applications in life science fields. The four year, 122-credit curriculum prepares students for options that span research and development in life sciences and related business applications in the pharmaceutical industry. The most common opportunities include life science companies, pharmaceutical research, healthcare research, and related technology companies. There are also related sectors, including software, consulting, and biotech and life science organizations, that are increasingly relying on data and posting prominent jobs. Graduates are also equipped for entry into graduate programs in data science.

The BS in Data Science & Biotech Research and Development provides students with a foundational understanding of lab sciences, coding and programming, and data science applications in life science fields. Students will have experiential opportunities in research and development, which include supervised internships and opportunities for students to apply learning in professional practice.

Upon completion of this program, graduates will be able to:

- Apply fundamental principles of data science, including statistical modeling, data management, and data manipulation, to identify patterns and gain actionable insight to address challenges in industry, life sciences, and healthcare.
- Design workflows and applications as solutions to organizational challenges.
- Collaborate across teams and functions to define problems, identify appropriate data, analyze sufficiency, and create visualizations to support communication and decision-making.
- Communicate effectively about properties of computer coding, task workflows, databases, and issues with data, including sufficiency, representation, and distributions.
- Explain machine learning, algorithms, and ethical challenges they represent in context with data science and their impacts on society.
- Evaluate data integrity and sufficiency and critically question analytical methods and approaches to manipulation across large data sets.
- Describe critical insight derived from large data sets.

Curriculum: Bachelor of Science in Data Science Biotech Research & Development

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I	3
CHE 131	Chemical Principles Iand lab	3
CHE 131L	Chemical Principles I Lab	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
ITM 101	Introduction to the Major	1
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II	3
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Lab	1
DSC 110	Intro to Data Science & Programming	3
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Lab	1
DSC 220	Programming I	3
MAT 261	Statistics	3
MAT 2XX	Linear Algebra	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
DSC 215	Data Analysis with R	3
DSC 230	Programming II	3
	BEH Elective	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		15

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry	3
BTC 2XX	Industry Research and Development	3
DSC 315	Big Data	3
MAT 461	Biostatistics	3
LIB	Communication Requirement (LIB 220/252)	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
DSC 245	Data Science and Analytics	3
DSC 301	Profession & Practice in Data Sci	1
DSC 320	Machine Learning	3

CHE 3xx	Computational Biology ***OR***	
BIO 3xx	Computational Chemistry	3
	SSC Elective	3
TOTAL		16

Year IV — fall

COURSE	TITLE	CREDIT HOURS
DSC 425	Data Science R&D Professional Project I	3
DSC 420	Advanced Machine Learning	3
	General Elective	3
	HUM Elective	3
HIN 410	Data Visualization and Display	3
TOTAL		15

Year IV — spring

COURSE	TITLE	CREDIT HOURS
DSC 427	Data Science R&D Professional Project II	3
	Data Science Elective	3
	Data Science Elective	3
	General Elective	3
LIB 512	Healthcare Ethics	3
TOTAL		15

Total credits to complete BS degree requirements: 122 credit hours

Bachelor of Science in Health Information Management & Technology

The STEM-eligible Bachelor of Science in Health Information Management and Technology on the Boston Campus provides didactic and experiential education to prepare students with a foundational understanding of healthcare data, programming, and knowledge to fundamentally change the care delivered. The four year, 121-credit program is an applicant for CAHIIM accreditation and prepares students for careers as health information managers, coding supervisors, privacy/security officers, compliance analysts, patient information coordinators, data quality managers, data integrity analyst, project managers, and EHR implementation specialists. Graduates may sit for the Registered Health Information Administrator (RHIA) Credential offered through the American Health Information Management Association (AHIMA) and are also equipped for entry into graduate programs in business and health analytics.

Upon completion of this program, graduates will be able to:

- Apply fundamental knowledge of health data, coding, and database structures to design applications that address complex challenges and support healthcare delivery.
- Monitor, evaluate, and address revenue projections based on information systems data and analysis.
- Utilize information systems, health records, and knowledge of databases to facilitate retrieval, critical review, and display of relevant data to enable and support decision-making.
- Assess and recommend best practices for data security and privacy for personal health information, storage, and transmission.
- Identify and explain regulatory compliance requirements for healthcare data, quality reporting, and other reporting requirements.
- Evaluate data integrity and sufficiency and deliver recommendations for action.

Curriculum: Bachelor of Science in Health Information Management & Technology

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	A&P	3
HIN 120	Health Informatics	3
HIN 100	Medical Terminology	1

ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 141	Algebra and Trig	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	A&P II	3
HIN 160	ICD Coding and Management	3
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		15

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 113/L113	Chemistry & Society (with lab)	4
HCM 300	US Healthcare: Organization and Delivery	3
HIN 170	CPT Coding and Management	3
MAT 261	Statistics	3
PBH 250	Introduction to Public Health	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
DSC 110	Intro to Data Sci & Programming	3
HCM 366	Finance and Revenue Cycle Mgt.	3
	Communication Requirement (LIB 220 or LIB 252)	3
	General Elective	3
SSC 495	Evolution of the Health Professions	3
TOTAL		15

Year III — fall

COURSE	TITLE	CREDIT HOURS
BEH 355	Organizational Psychology	3
DSC 220	Data and Programming I	3
HCM 352	Quality Improvement	3
HIN 337	Health Data, Compliance, and Legal Protections	3
PBH 260	Public Health Research Methods	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
DSC 230	Data and Programming II	3
DSC 301	Professionalism in Practice Health Data Science and Informatics	1
HCM 325	Project Leadership	3
HCM 340	Human Resource Management	3
LIB 512	Healthcare Ethics	3
PBH 360	Health Data Collection and Management	3
TOTAL		16

Year IV — fall

COURSE	TITLE	CREDIT HOURS
HIN 410	Data Visualization and Display	3
HIN 355	Health Information Management Internship	3
PSB 301	Pharmacology for Allied Health Professionals	3

	General Elective	3
	Business Elective (HCM 318 or HCM 360)	3
TOTAL		15

Year IV — spring

COURSE	TITLE	CREDIT HOURS
HIN 440	Health Information Governance	3
HIN 415	Health Data Security	3
HIN 450	Strategic Mgt and Planning Health Information	3
	General Elective	3
	HUM Elective	3
TOTAL		15

Total credits to complete BS degree requirements: 121 credit hours

Bachelor of Science in Healthcare Management

The Bachelor of Science in Healthcare Management on the Boston Campus provides didactic and experiential education to prepare students for a wide range of healthcare business occupations. The four year, 120-credit curriculum prepares students for careers in healthcare business in a variety of settings, including public and private hospitals, pharmaceutical companies, medical device organizations, health maintenance organizations, community health settings, government agencies, and insurance companies. Graduates are also equipped for entry into graduate programs in business, public administration, and health analytics.

The BS in Healthcare Management provides students with a unique blend of business skills and healthcare knowledge and experience. Students are exposed to career-focused opportunities and opportunities to explore potential career paths through instruction and experiential opportunities in collaboration with our Executive in Residence. Students are encouraged to gain experience in various healthcare sectors through volunteer experiences, informational interviewing, job shadowing, and experiential opportunities. In this program, students have the option of selecting and declaring any available minor or applying business electives they choose to meet the 12 credits of electives. The approach of selecting a minor or electives creates opportunities for students to pursue their areas of academic interest.

Upon completion of this program, graduates will be able to:

- Apply in-depth knowledge of the healthcare environment, business processes, and the problem-solving strategies necessary to lead and manage the delivery of comprehensive health services to patients, clients, and stakeholders.
- Communicate orally, in writing, or through other mediums to effectively engage and interact with diverse populations, including clients, customers, and colleagues.
- Collaborate effectively as a member of a high performing team bringing complex projects to successful completion.
- Demonstrate knowledge of healthcare informatics, data analysis, and data visualization in informed decision-making, forecasting, and strategic planning.
- Assess the impacts of changes in healthcare technology, health policy, and regulation in the context of healthcare-related organizations.
- Explain core business concepts, constructs, and processes including finance, economics, revenue cycle management, operations management.
- Approach population health and other complex challenges in healthcare delivery with innovative and entrepreneurial solutions.
- Establish positive and productive professional relationships with providers, clients, and colleagues.
- Demonstrate cross-disciplinary and inter-professional leadership that is ethically conscious and reflective of stakeholder values.
- Engage in professional and career development in support of life-long learning, the development of meaningful goals, and personal and professional values.

Curriculum: Bachelor of Science in Healthcare Management

Year I — fall

COURSE	TITLE	CREDIT HOURS
LIB 111	Academic Writing and Research	3
CHE 113/L	Chemistry and Society w/Lab	4
OR		
LIB 120	Intro to Psychology	3
HCM 245	Introduction to Healthcare Business	3
MAT 144	Business Mathematics and Computer Applications	3
ITM 101	Introduction to the Major	1
TOTAL		13-14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 105	Concepts in Biology	3
OR		
PBH 250	Introduction to Public Health	3
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 220	Interpersonal Comm for Health Prof	3
HCM 215	Economics and Financing of Healthcare	3
HCM 205	Healthcare Management Career Exploration	1
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
HCM 300	US Healthcare: Organization and Delivery	3
CHE113//L	Chemistry and Society w/Lab	4
OR		
LIB 120	Intro to Psychology	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
HCM 235	Business Information Systems	3
HCM 225	Principles of Marketing	3
HCM 255	Business Communications	3
TOTAL		15-16

Year II — spring

COURSE	TITLE	CREDIT HOURS
PSB 446	Healthcare Finance	3
BIO 105	Concepts of Biology	3
OR		
PBH 250	Introduction to Public Health	3
MAT 261	Statistics	3
	General Elective Course #1	3
	HUM or SSC/ Elective	3
TOTAL		15

Year III — fall

COURSE	TITLE	CREDIT HOURS
HCM 318	Leadership Development for Healthcare Managers	3
PSB 415	Accounting I -- Financial	3
BEH 355	Organizational Psychology	3
	General Elective Course #2	3
	HUM or /SSC Elective	3

TOTAL		15
Year III — spring		
COURSE	TITLE	CREDIT HOURS
HCM 340	Human Resource Management	3
HCM 325	Project Leadership	3
LIB 512	Healthcare Ethics	3
HCM 402	Operations Management	3
PSB 416	Accounting II -- Managerial	3
TOTAL		16
Year IV — fall		
COURSE	TITLE	CREDIT HOURS
HCM 355	Internship	3-6
HCM 360	Law and Compliance for Healthcare Business	3
HCM 352	Quality Improvement	3
	General Elective Course #3	3
HCM 285	Digital Healthcare Delivery	3
TOTAL		15-18
Year IV — spring		
COURSE	TITLE	CREDIT HOURS
HCM 490	Healthcare Management Capstone	3
	General Elective Course #4	3
	General Elective Course #5	3
	General Elective Course #6	3
HCM 410	Supply Chain Management	3
TOTAL		15

Total credits to complete BS degree requirements: 120 credit hours

Bachelor of Science in Healthcare Management – Degree Completion

The Healthcare Management degree completion option is designed for transfer students with an earned associate degree in business or a closely related field. The Bachelor of Science degree in Healthcare Management benefits those looking for career progression and to complete their bachelor's degree in a flexible format.

120 credits required:

- 40-52 credits will be awarded as a block for a previous associate degree (AS) in Business or related program. The coursework must satisfy Liberal Arts core requirements. *Students may be required to complete any missing requirements.
- A minimum of 68 credits are completed within the MCPHS BS Completion program.

Possible Transfer credits to be applied (52):

- 40 for Arts and Sciences core courses
- 12 credit transfer block for prior associate's degree in business from a regionally accredited institution

Credits to be completed (68):

- 53 Business core (see below)
- 15 Business concentration

Curriculum: Bachelor of Science in Healthcare Management – Degree Completion

COURSE	TITLE	CREDIT HOURS
BMI 101	Introduction to Informatics	3
HCM 215	Economics and Financing of Healthcare	3
HCM 220	Organizational Dynamics in Healthcare	3
HCM 245	Introduction to Healthcare Business	3
HCM 255	Business and Career Communications	3
HCM 300	US Healthcare: Organization and Delivery	3
HCM 352	Quality Improvement	3
PSB 238	Introduction to Life Sciences and Medical Device Organizations	3
PSB 240	Introduction to Health Policy and Regulatory Affairs	3
PSB 415	Managerial Accounting	3
HCM 354	Internship Preparation	1
HCM 355	Internship	1-9
HCM 360	Law and Compliance for Healthcare Business	3
HCM 430	Health Services Marketing	3
PSB 446	Healthcare Finance	3
BMI 410	Data Visualization	3
HSC 418	Leadership Development for Healthcare Managers	3
HCM 420	International Business	3
HCM 490	Healthcare Management Capstone	3
TOTAL BUSINESS CORE		53-61

Students also choose a minor from any of the MCPHS offerings or 15 credits of business electives.
Total credits required for Completion program: 68-76 credit hours

Master of Business Administration (MBA) in Healthcare Technology

The STEM-eligible Master of Business Administration (MBA) in Healthcare Technology is a 37-credit year-round program offered online or on the Boston Campus. The Boston-based MBA is designed to be completed full-time. The MBA in Healthcare Technology reflects health technology and management, shifting from a healthcare focus to include a core of management science, health technology, data science, and applied analytics.

Admission Requirements

Applicants are encouraged to apply before the application due date for full consideration. Applications are reviewed on a rolling basis until the program capacity has been reached.

- Bachelor's degree from a regionally accredited institution, or equivalent
- Minimum undergraduate GPA of 3.0
- Transfer credits are not accepted

Graduates of the program will be able to:

- Analyze and interpret data derived from health encounters and business operations to identify and support organizational decision-making;
- Evaluate innovative technologies and recommend solutions to improve healthcare delivery and organizational efficiency;
- Demonstrate proficiency in data science, analytics, artificial intelligence, and information systems for management and decision-making;
- Optimize resource allocations based on financial management and health economics principles;
- Design and implement quality improvement initiatives leveraging statistics, data analytics, and health informatics to address complex challenges;
- Assess the ethical and legal implications of technology adoption, including issues related to data privacy and security;
- Formulate strategies for managing change and innovation in organizations transforming to meet the needs of their stakeholders;
- Evaluate the impact of emerging technologies on healthcare business models and develop adaptive strategies.

Curriculum: Master of Business Administration in Healthcare Technology

These courses are required for students in the MBA program.

Year I — fall

COURSE	TITLE	CREDIT HOURS
HTM 700	Introduction to US Healthcare System	1
HTM 717	Economic Evaluation: Global Perspectives	3
HTM 720	Business Statistics & Data Driven Decision-Making	3
HTM 727	Strategic Finance for Health Technology & Health Sciences	3
TOTAL		10

Year I — spring

COURSE	TITLE	CREDIT HOURS
HTM 747	Management Science: Operations	3
HTM 757*	Managing and Leading Change	3
HTM 800	Professional Practice Seminar	0
HTM 820	Revenue Cycle: Finance & Accounting	3
TOTAL		9

Year I — summer

COURSE	TITLE	CREDIT HOURS
HTM 737	Data Science & Analytics for Business Decision-Making	3
HTM 767*	Ethics and Law for Health Tech	3
HTM 802	Professional Practicum **OR**	
HTM 803	Collaborative Research	3
TOTAL		9

Year II — fall

COURSE	TITLE	CREDIT HOURS
HTM 810	Project Management	3
HTM 830*	Medical Devices and Technology	3
HTM 850	Strategic Management Capstone	3
* Courses can be replaced by certificate courses that represent specializations		
TOTAL		37

MCPHS–Boston
School of Medical Imaging and Therapeutics

Frances Keech, DHSc, RT(N), MBA, FSNMMI, TS; Dean and Professor

Diagnostic Medical Sonography Program
Jeffrey C. Hill, MS, BS, ACS, FASE, Assistant Professor - Echocardiography Track
Erin O'Hora, BS, RDMS, RVT, Assistant Professor/Clinical Coordinator - General Track Boston
Bryan Doldt, BS, RDCS, FASE, Program Director, Assistant Professor - Echocardiography Track
Jennifer Miller, MHSc, RDMS, RVT, Program Director, Assistant Professor - General Track
Tiela Robert, BS, RDMS, RVT, RT(R)(CT), Assistant Professor - General Track
Patricia Mattos BS, RDMS, RVT, Assistant Professor – General Track
Christy Williams BS, RDMS, Assistant Professor /Clinical Coordinator – General Track Worcester
Marie Ficociello, MS, RDCS, Assistant Professor/Clinical Coordinator - Echocardiography Track

Magnetic Resonance Imaging Program
Lori Nugent, DHS, MEd, RT(R)(MR), Program Director and Assistant Professor
Stacey Dunlap BS RT(R)(MR)(M), Clinical Coordinator and Assistant Professor

Nuclear Medicine Technology Program
David Gilmore, EdD, CNMT, NCT, RT(R)(N), Program Director and Associate Professor
Meagan Cramer, BS, CNMT, RT(N)(CT), Assistant Professor

Radiation Therapy Program
Kelly Ebert MPA, BS, RT(T) Program Director and Associate Professor
Janki Patel, MBA, MHA, RT(R)(T), Clinical Coordinator and Assistant Professor

Radiography Program
Michael Farah MS Ed, RT(R), (CT), Program Director and Assistant Professor
Ryan Piccinin, BS, RT(R), Clinical Coordinator and Assistant Professor

Respiratory Therapy Program
Keith Hirst MS, RRT-ACCS, RRT-NPS, , FAARC, Program Director and Associate Professor

Master of Science in Radiologic and Imaging Sciences Programs
David Gilmore, EdD, CNMT, NCT, RT(R)(N), Program Director and Associate Professor

Degree and Certificate Programs

Bachelor of Science in Diagnostic Medical Sonography-General (Accelerated)
Bachelor of Science in Diagnostic Medical Sonography-General (Fast Track)
Bachelor of Science in Diagnostic Medical Sonography-Echo (Accelerated)
Bachelor of Science in Diagnostic Medical Sonography-Echo (Fast Track)
Bachelor of Science in Magnetic Resonance Imaging (Accelerated)
Bachelor of Science in Magnetic Resonance Imaging (Fast Track)
Bachelor of Science in Nuclear Medicine Technology (Accelerated)
Bachelor of Science in Nuclear Medicine Technology (Fast Track)*
Bachelor of Science in Radiation Therapy
Bachelor of Science in Radiation Therapy (Fast Track)
Bachelor of Science in Radiography (Accelerated)
Bachelor of Science in Radiography (Fast Track)
Bachelor of Science in Radiography-Physician Assistant Pathway
Bachelor of Science in Respiratory Therapy (Degree Completion)
Bachelor of Science in Health Sciences/BS Medical Imaging and Therapeutics Dual Degree
Master of Science in Radiologic and Imaging Sciences
Master of Science in Radiologic and Imaging Sciences Bridge Program
Advanced Certificate Computed Tomography (CT) Imaging*
Advanced Certificate in Magnetic Resonance Imaging (MRI)*
Advanced Certificate in Mammography*
Advanced Certificate in Nuclear Medicine Technology (NMT)*

*Online programs

Technical Standards for the School of Medical Imaging and Therapeutics

Observation
Candidates and students must have sufficient capacity to observe in the lecture hall, laboratory, and diagnostic and treatment areas of outpatient and inpatient settings. Sensory skills to perform the procedures of the healthcare profession in which students are enrolled are required. In any case where a candidate's or a student's ability to observe or acquire information through sensory modalities is compromised, the candidate or student must demonstrate alternative means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion.

Communication
Candidates and students must be able to communicate effectively in both academic and healthcare settings. Candidates and students must show evidence of effective written and oral communication skills and must be able to communicate with patients in order to elicit and impart information.

Motor
The ability to participate in basic diagnostic and therapeutic maneuvers and procedures is required. Candidates and students must have sufficient motor function to execute movements reasonably required to properly care for all patients and must be able to perform motor functions with or without assistive devices.

Intellectual
Candidates and students must be able to measure, calculate, reason, analyze, and synthesize. Problem solving, one of the critical skills demanded of healthcare professionals, requires all of these intellectual abilities. Candidates and students must be able to read and understand medical literature. In order to complete the specific Health Sciences program, students must be able to demonstrate mastery of these skills and the ability to use them together in a timely fashion in healthcare problem solving and patient care.

Behavioral and Social Attributes
Candidates and students must possess the emotional health and stability required for full utilization of their intellectual abilities, the exercise of good judgment, and the prompt completion of all academic and patient care responsibilities. The development of mature, sensitive, and effective relationships with patients and other members of the healthcare team is essential. The ability to function in the face of uncertainties inherent in clinical practice, flexibility, compassion, integrity, motivation, interpersonal skills, and concern for others are all required.

Students interested in medical imaging and therapeutics (diagnostic medical sonography, magnetic resonance imaging, nuclear medicine technology, radiation therapy, or radiography) are required to meet technical standards specific to each program. Students should read the technical standards specific to the program they are interested in completing.

School of Medical Imaging and Therapeutics Policies and Professional Requirements

To be in good academic standing, students in the School of Medical Imaging and Therapeutics programs must have a minimum grade point average of 2.5 in professional courses. Students also must earn a minimum grade of C+ in the professional courses in the major, including all clinical internships. Any student who fails a professional course twice is dismissed from the program.

Students whose clinical performance during the internship rotation is unsatisfactory receive a warning from their clinical supervisor by the middle of the rotation; those who fail two internship rotations are dismissed from the program.

In addition to being in good academic and financial standing, students must complete all professional coursework at MCPHS to receive their degrees in the Diagnostic Medical Sonography, Magnetic Resonance Imaging, Nuclear Medicine Technology, Radiography, Respiratory Therapy or Radiation Therapy programs or the certificate in MRI, Mammography, Nuclear Medicine Technology, or CT.

BCLS Certification
All students in School of Medical Imaging and Therapeutics programs must have current certification in Basic Cardiac Life Support (BCLS) for Healthcare Professionals before they begin their clinical rotations (DMS 302C [General track], DMS 306C [Echocardiography track], MRI 402, NMT 330C, RTT 325C, or RAD 201C).

Eligibility for Certification—ARRT
Candidates for certification through the American Registry of Radiologic Technologists (ARRT) must successfully complete a program of formal education that is accredited by a mechanism acceptable to the ARRT. Candidates also must comply with the rules of ethics contained in the ARRT Standards of Ethics. These include but are not limited to compliance with state and federal laws. A conviction or plea of guilty to, or plea of nolo contendere to a crime that is either a felony or a crime of moral turpitude must be investigated by the ARRT in order to determine eligibility.

Pregnancy Policy
NOTE: This policy applies to all female students in the Nuclear Medicine Technology, Mammography and Computed Tomography programs. In the event a female student becomes pregnant, the student may choose to declare her pregnancy, since there is a potential risk to the developing fetus from radiation exposure. In the event a student chooses to declare her pregnancy, the student will notify the program director in writing that she is pregnant and also state the estimated date of conception. The MCPHS Declaration of Pregnancy for Radiation Workers form, available in the School of Medical Imaging and Therapeutics dean's office, shall be used for this purpose. A copy of this declaration will be forwarded to the Radiation Safety Officer. Choosing not to declare a pregnancy will result in exemption from the specific state radiation protection regulations limiting the exposure to the embryo/fetus.

Once the student declares herself to be pregnant, the Radiation Safety Officer will issue to the student

- a second badge to be worn during the gestation period at waist level to serve as a measure of embryo/fetus exposure. The radiation exposure control criterion for this student will be to limit exposures to this waist-level badge to less than 50 mrem/month (0.5 millisieverts).
- a copy of the applicable state regulations (105CMR120.203, 105CMR120.218, 105CMR120.267) that deal with exposure to the embryo/fetus
- a copy of the U.S. Nuclear Regulatory Guide 8.13, *Instruction Concerning Prenatal Radiation Exposure*, and Guide 8.29, *Instruction Concerning Risks from Radiation Exposure*. The student will be given an opportunity to discuss this material with the Radiation Safety Officer or his or her representative.

In order to adhere to Commonwealth of Massachusetts Regulation 105CMR120.218, which requires that "the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 500 mrem (5 millisieverts)," the student is offered the following options:

- The student may continue in the program so long as her embryonic/fetal exposures are in conformance with the requirements of 105CMR120.218. If the student chooses this option, the following procedure must be followed:
- All efforts must be made by the student to ensure that the total exposure to the waist badge does not exceed 500 mrem (5 millisieverts) for the entire gestation period.
- The student and program director are to be notified, in writing, by the Radiation Safety Officer, if more than 80% of this dose (400 mrem) is received.
- The student and program director are to be notified, in writing, by the Radiation Safety Officer if the monthly recommendation of 50 mrem is exceeded.
- The student is expected to utilize her knowledge of radiation control principles at *all* times to further minimize her exposure.
- If the maximum total exposure for the gestation period is reached, the student, Radiation Safety Officer, and program director must agree on an alternate option.
- The student may request a leave of absence from the career component of the program. The student may continue with general education courses without modification or interruption.
- The student has the option for withdrawal of the declaration of pregnancy.

NOTE: Experience shows that the radiation workers in these programs generally receive to the whole body well below 500 mrem per year, 50 mrem per month, and it is most unlikely that there will be any problems adhering to the fetal exposure limits.

Policy for Content Validation after Nonprogression or Leave of Absence
Students who have not been continuously attending courses for a period of one semester or more in an undergraduate School of Medical Imaging and Therapeutics (SMIT) professional course, or who withdraw from a SMIT program via leave of absence, must validate previous knowledge and skills held prior to program exit before they may reenroll in SMIT professional courses. Reenrollment is subject to clinical placement availability. (NOTE: Students returning from a leave of absence must confirm their intent to return as specified in the Return from Leave of Absence section. There is no guarantee that space will be available at the desired time of return of the student; it may take up to two years for reentry due to lack of clinical placement availability.) This policy applies to all undergraduate SMIT programs.

The validation will occur via the student's demonstration of knowledge and skills, such as meeting established program clinical competencies, in a selected clinical facility or simulation laboratory. This requires that students notify the program director of the desired date of return a minimum of 30 days prior to the anticipated return in order to make arrangements for preparing and performing validation testing. Program faculty will provide guidance as to what content and skills (competencies) need to be reviewed by students prior to the testing, but it is the student's responsibility to prepare for the validation testing.

Students attempting to return from a leave of absence also must have been cleared to return to classes by the designated

staff member in the Center for Academic Success and Enrichment (CASE) and by the Dean of Students or designee (if a medical leave of absence) prior to performing validation testing. The designated staff member in the Center for Academic Success and Enrichment will notify the Dean of SMIT when the student is eligible to take the validation test. Validation of knowledge will consist of a competency examination. A minimum grade of C on the competency examination is required. Program faculty will determine the content and skills to be included in the validation test.

If a student fails the validation test, they must enroll in a one-semester directed study course to remediate prior to reentering the program. This will delay the student's reentry for at least one semester but likely for one year (or more if there is no clinical space available). The number of semester credits assigned to the directed study course will vary (1–3 semester credits) depending upon the number of semesters successfully completed in the program. If the student completed two or fewer semesters, 1 credit will be assigned; if three or four semesters, 2 credits; and if more than four semesters, 3 credits. Students may take general education courses concurrently with the directed study but may not take any program professional courses until the directed study has been successfully completed.

If a student does not pass the directed study with a minimum of C on the first attempt, they will be dismissed from their respective program.

Accelerated 32- to 36-Month Bachelor of Science in Diagnostic Medical Sonography, Magnetic Resonance Imaging, Nuclear Medicine Technology, and Radiography *

The accelerated 32- to 36-month Bachelor of Science programs offer degrees in Diagnostic Medical Sonography (DMS), Magnetic Resonance Imaging (MRI), Nuclear Medicine Technology (NMT), and Radiography (RAD). The DMS and NMT programs are completed in 36 months, and the MRI, and RAD programs in 32 months. The Bachelor of Science program integrates didactic instruction in the liberal arts, basic and applied science, and the social sciences with clinical instruction provided by the clinical affiliates. The location of the University in the Longwood Medical and Academic Area, as well as its affiliations with medical institutions located in the Greater Boston area, enable students to train in hospitals with state-of-the-art facilities that are among the best in the world. Students planning to major in one of the Medical Imaging and Therapeutics programs will be expected to specify the program of choice during the formal application process to MCPHS. Students who are uncertain about their program of choice are encouraged to complete a shadowing activity for each specialty area in order to decide which discipline they wish to study. If the student has firmly decided on the concentration they wish to pursue, the student should contact his or her local hospital to arrange a shadowing opportunity. If such arrangements cannot be made, the MCPHS director for that program will try to accommodate the request to establish a shadowing opportunity. All such requests will be processed on an individual basis based on available space and the specific shadowing requirements at affiliate institutions. Any request to change the major after matriculation to MCPHS will be based on availability of space in the new area of interest.

For internal transfers, admission into the desired program is subject to space availability; in addition, the following must be completed:

- Transcript review by the appropriate program director and the dean of the school
- A Change of Major form signed by the Center for Academic Success and Enrichment
- A personal interview with the program director or designated program faculty
- Clinical observation in which the student will shadow a clinical supervisor in the chosen major; this requirement may be waived at the discretion of the program director

Bachelor of Science in Radiation Therapy (Four Year)

The Bachelor of Science in radiation therapy program integrates didactic instruction in the liberal arts, basic and applied science, and the social sciences with clinical instruction provided by the clinical affiliates. The location of the University in the Longwood Medical and Academic Area, as well as its affiliations with medical institutions located in the Greater Boston area, enable students to train in hospitals with state-of-the-art facilities that are among the best in the world. Radiation therapy students will be expected to specify the program as their choice during the formal application process to MCPHS. Students who are uncertain about their program of choice are encouraged to complete a shadowing activity in order to be certain of radiation therapy as their chosen field of study. Any request to change the major after matriculation to MCPHS will be based on availability of space in the new area of interest.

For internal transfers, admission into the radiation therapy program is subject to space availability; in addition, the following must be completed:

- Transcript review by the appropriate program director and the dean of the school
- A Change of Major form signed by the Center for Academic Success and Enrichment
- A personal interview with the program director or designated program faculty
- Clinical observation in which the student will shadow a clinical supervisor in the chosen major; this requirement may be waived at the discretion of the program director

Fast Track Bachelor of Science Degrees in Diagnostic Medical Sonography, Magnetic Resonance Imaging, Nuclear Medicine Technology, Radiation Therapy, and Radiography
Designed specifically for students with either an associate or bachelor's degree in another field, these programs of study provide a fast track option for individuals ready for transition to a career in a discipline within medical imaging and therapeutics. Building on previous learning and experience gained from the student's first degree, these programs will mirror the curricula of the three-year Bachelor of Science (or four-year Bachelor of Science in Radiation Therapy) programs previously outlined in the prior section of this catalog.

In order to be eligible for these programs, students must possess a prior bachelor's or associate's degree, or the appropriate amount of college credits and prerequisites. In addition to the prerequisite coursework, students admitted without a prior bachelor's degree must also have completed coursework equivalent to the general education core curriculum; transfer and residency credits for these students must total a minimum of 120 credit hours.

Students with a bachelor's or associate's degree, or the appropriate amount of college credits and prerequisites, may apply to the fast track program. Courses must have been completed at a regionally accredited college or university with a grade of C or better for transfer. Math and science courses taken more than ten years prior to the anticipated date of matriculation to MCPHS will not be accepted.

Required prerequisite courses for all students

- Anatomy and Physiology I & II with lab (8 credits)
- Basic Chemistry I with lab (the DMS, MRI, RAD and NMT program also requires Chemistry II – 4 credits)
- Physics I (Algebra-based) with lab (4 credits) *
- Algebra and Trigonometry (3 credits) (Acceptable substitutions include Precalculus and Calculus) *
- Expository Writing I (3 credits)
- Statistics (3 credits)
- Medical Terminology (1credit) **

TOTAL: 25(29) credits
* MRI for Math require Precalculus and Calculus. MRI students for Physics require a calculus based 4 credit physics class

Additional courses required for students without a Bachelor's Degree:

- Expository Writing II (3 credits)
- Introduction to Psychology (3 credits)
- Introduction to Social Sciences: Identity, Power and Society (3 credits) (Acceptable substitutions include American History, US History, U.S. Government, Western Civilization)
- Humanities Elective (3 credits) (Acceptable courses include Literature, Creative Writing, Philosophy, Ethics, Religious Studies, Select Fine Arts, Advanced Level Languages)
- Behavioral Science Elective (3 credits) (Acceptable courses include any upper level Psychology course)
- Social Science elective (3 credits) (Acceptable courses include History, Political Science/Government, Anthropology, Upper-level Sociology, American Studies, Women Studies, Ethnic Studies, Geography, Economics)

For NMT students without a Bachelor's Degree, additional courses are required:

- Biology I & II (with labs)
- Medical Microbiology

TOTAL: 18 credits

*** NOTE: Medical terminology for DMS, MRI, and NMT students is integrated into the professional phase and thus is not a course requirement*

Clinical Rotations
A number of clinical rotations in the required curriculum may be scheduled at some distance from the campus. This is necessary to provide a range of learning experiences and to ensure availability and quality of clinical rotation sites. Students generally can expect to be assigned to clinical sites at some distance from the campus for at least a portion of their required clinical rotations. In such instances, students are responsible for transportation and other related travel expenses. Students should note that there may be clinical placements without access to public transportation and that for these placements, students should expect to drive.

Bachelor of Science in Diagnostic Medical Sonography (Accelerated and Fast Track)
General and Echocardiography Tracks (Accelerated, 36 months)

The Diagnostic Medical Sonography (DMS) profession uses high-frequency sound waves (ultrasound) to produce multi-dimensional dynamic images of tissue, organs, and blood flow inside the human body for the diagnosis of various medical conditions. The sonographer, a highly skilled imaging technologist, uses sophisticated ultrasound equipment to identify disease. In addition, the sonographer works closely with physicians in the processing of the ultrasound images to make a diagnosis.

The DMS programs offers a full-time, Accelerated, 36-month course of study that begins in the fall semester. The comprehensive curriculum includes primary specialties of ultrasound, plus secondary specialties, offered across two tracks; the General ultrasound track, includes training in abdominal, obstetrics/gynecology, breast, pediatric, musculoskeletal and vascular sonography; the Echocardiography track focuses on adult echocardiography with secondary specialty tracks in pediatric echocardiography, and vascular sonography.

Technical Standards for DMS

Minimum expectations of the DMS programs are to prepare competent, entry-level sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains in Abdominal sonography – extended and Obstetrics and gynecology sonography.

To meet these expectations, students enrolled in health sciences professional programs must have abilities and technical skills to be successful healthcare providers.

The following technical standards describe the non-academic qualifications the DMS programs considers essential for the successful progression in, and completion of the educational objectives of its curriculum.

Although the DMS programs will engage in an interactive process with applicants with disabilities, it reserves the right not to admit any applicant who, upon completion of the interactive process, cannot meet the technical standards set forth below, with or without reasonable accommodations. Reasonable accommodation for persons with prior documented disabilities will be considered on an individual basis. Students wishing to request accommodations for disabilities should contact the Director for Office of Student Access and Accommodations.

A DMS professional provides direct care for patients in hospitals or outpatient facilities and must be able to apply acquired knowledge and physical tasks to skillfully perform sonography procedures. These technical standards are based upon the minimum tasks performed by graduates of the program as recommended by the Society of Diagnostic Medical Sonography, Scope of Practice and Clinical Standards for the Diagnostic Medical Sonographer, 2023 https://www.sdms.org/about/who-we-are/scope-of-practice

Listed below are the technical standards that all applicants must meet in order to participate in, and successfully complete the DMS programs:

Physical

The Diagnostic Medical Sonographer must be able to:

- Work standing on their feet 80% of the time.
- Use both hands, wrists, and shoulders to maintain prolonged arm positions necessary for Scanning and perform fine motor skills.
- Lift more than 50 pounds routinely.
- Transport, move, and or lift patients from a wheelchair or stretcher to the examination table or patient bed, and physically assist patients into proper positions for examination.
- Push, pull, bend and stoop routinely to move and adjust sonographic equipment and perform studies.
- Use senses (vision, hearing, and touch) to adequately view sonograms, including color distinctions; distinguish audible sounds; perform eye/hand coordination skills required in sonographic examinations; and recognize changes in patient's condition and needs.
- Work in a semi-darkened room for prolonged periods of time.
- Be physically capable of carrying out all assigned duties.

Mental and Intellectual

The Diagnostic Medical Sonographer must be able to:

- Communicate effectively, verbally and nonverbally, with patients and other healthcare professionals to explain procedures, give instructions, and give and obtain information.

- Organize and accurately perform the individual steps in a sonographic procedure in the proper sequence according to established standards.
- Understand and reach quickly to verbal instructions and patient needs.
- Follow directions effectively and work closely with members of the healthcare community.
- View and evaluate recorded images for the purpose of identifying proper protocol, procedural sequencing, technical qualities and identification of pathophysiology.
- Apply problem solving skills to help optimize patient care and produce the best diagnostic information possible.

Emotional
The Diagnostic Medical Sonographer must be able to:
- Provide physical and emotional support to the patient during sonographic procedures.
- Interact compassionately and effectively with the sick and or the injured.
- Handle stressful situations related to technical and procedural standards and patient care situations.
- Adapt to changing environments and be able to prioritize tasks.
- Project an image of professionalism.
- Demonstrate a high level of compassion for others, a motivation to serve, integrity, and a consciousness of social values.
- Interact positively with people from all levels of society and all ethnic and religious backgrounds.

Registry Exam Eligibility
Graduates of the DMS programs are eligible to apply for several registry exams offered by the American Registry of Diagnostic Medical Sonography (ARDMS) and Cardiovascular Credentialing International (CCI). Echocardiography graduates may apply, under ARDMS exam prerequisite 2, to take the adult and pediatric echocardiography, credentialing exams. Echocardiography graduates may apply under CCI exam prerequisite RCS4 (adult cardiac) and RCCS5 (pediatric/adult congenital). General Ultrasound graduates may apply under ARDMS exam prerequisite 2, to take the abdominal and OB/GYN credentialing exams.

The student must pass the ARDMS Sonography Principles & Instrumentation (SPI) registry exam in order to pass the DMS 304, Problem Solving in Physics and Instrumentation course. In addition, passing the SPI registry exam is required to continue into Year III of the program.

All DMS courses during the professional phase of the program must be completed with a weighted grade ≥ 77% (C+) in order to progress in the program.

Students must complete all professional coursework at MCPHS to receive their degrees in the Diagnostic Medical Sonography programs.

The MCPHS graduate is well suited to work in several DMS specialties and, with the BS degree, has the comprehensive education required to become a leader in the profession.

Commission on Accreditation of Allied Health Education Programs
The *General DMS program* is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of *Joint Review Committee on Education in Diagnostic Medical Sonography.* Mailing address: Commission on Accreditation of Allied Health Education Programs, 9355-113th St. N, #7709 Seminole FL 33775; www.caahep.org.

The Diagnostic Medical Sonography, Echocardiography is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org), upon the recommendation of the Joint Review Committee on Education Programs in Cardiovascular Technology. Mailing address: Commission on Accreditation of Allied Health Education Programs, 9355 -113th St. N, #7709 Seminole, FL 33775 ; tel: 727.210.2350; www.caahep.org.

Curriculum: Bachelor of Science in Diagnostic Medical Sonography Pre-professional Phase

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Laboratory	1
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
ITM 101	Introduction to the Major	1

LIB 111	Academic Writing and Research	3
MAT 141	Algebra and Trigonometry*	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1
LIB 112	Writing in the Humanities	3
PHY 181	General Physics*	4
TOTAL		15

Year I — summer

COURSE	TITLE	CREDIT HOURS
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		12

**NOTE: The student must earn a minimum grade of C in BIO 110/210, CHE 110/210, MAT 141, and PHY 181. Medical terminology is integrated into the professional phase and thus is not a course requirement. General DMS students must earn a minimum grade of C+ in BIO 110/210, CHE 110/210, MAT 141 and PHY 181.*

***Progression into the Professional Phase for DMS—Echocardiography Track*:**
An overall cumulative grade point average (GPA) of 2.0 and successful completion of the above courses is required as prerequisite for entry into the professional phase of the DMS programs. These requirements apply to students entering MCPHS as freshmen, students who are transferring into the DMS program from other programs within MCPHS, and those who are transferring from another accredited college or university.

Progression into the Professional Phase for DMS – General Track:
All students must meet the following pre-requisite criteria to progress into the professional phase of the Bachelor of Science in Diagnostic Medical Sonography (BS)—Accelerated General Track (Boston) and Fast Track (Boston):

- The student must earn a minimum grade of C+ in MAT 141, PHY 181 and all BIO and CHE courses.
- A minimum overall cumulative grade point average (GPA) of 2.7 and successful completion of all the above pre-requisite courses is required for consideration for entry into the professional phase of the DMS programs.
- These requirements apply to students entering MCPHS as freshman students, students who are transferring into the DMS program from other programs within MCPHS, and those who are transferring coursework from another accredited college or university.
- **Note:** Matriculation into the professional phase of the Bachelor of Science in Diagnostic Medical Sonography—Accelerated General Program depends upon space availability. Acceptance is based on overall academic performance, including performance in pre-requisite coursework and grade point average requirements, spots available at the time, and clinical site availability. Review of academic performance for matriculation into the professional phase will take place at the completion of the spring year 1 semester and, also be contingent on successful completion of the summer year 1 semester courses. Once the Bachelor of Science in Diagnostic Medical Sonography—General program in Boston is full (cap of 21), those meeting admission criteria will be placed on a waitlist (see information for waitlisted students below).

Curriculum: Professional Phase: Bachelor of Science in Diagnostic Medical Sonography-General Track (Accelerated, 36 months)

Year II — fall

COURSE	TITLE	CREDIT HOURS
DMS 200	Introduction to Diagnostic Medical Sonography	2
DMS 202	Obstetrics/Gynecology Sonography I	3
DMS 204L	Sonography Laboratory Procedures I	4
DMS 206	Abdominal Sonography I	3
DMS 208	Sonographic Physics and Instruments I	3
TOTAL		15

Year II — spring

COURSE	TITLE	CREDIT HOURS
DMS 212	Obstetrics/Gynecology Sonography II	3
DMS 214L	Sonography Laboratory Procedures II	4
DMS 216	Abdominal Sonography II	3
DMS 218	Sonographic Physics and Instruments II	3
	Distribution Elective*	3
TOTAL		16

Year II — summer

COURSE	TITLE	CREDIT HOURS
DMS 304	Problem Solving in Physics and Instruments III	3
DMS 205	Breast Sonography	3
DMS 320	Introduction to Vascular Sonography (with lab)	5
DMS 224L	Sonography Laboratory Procedures III	1
TOTAL		12

Year III — fall

COURSE	TITLE	CREDIT HOURS
DMS 302C	General Clinical Sonography I	8
DMS 310	Critical Thinking in Sonography I	2
DMS 315	Pediatric Sonography	3
LIB 512O	Healthcare Ethics	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
DMS 312C	General Clinical Sonography II	8
DMS 410	Critical Thinking in Sonography II	2
DMS 420	Musculoskeletal Sonography	3
	Distribution Elective*	3
TOTAL		16

Year III — summer

COURSE	TITLE	CREDIT HOURS
DMS 412C	General Clinical Sonography III	8
DMS 440	Advanced Problem Solving in Sonography	2
DMS 443	Advanced Problem Solving in Vascular Sonography**	(1)
	Distribution Elective*	3
TOTAL		13 (14)

** During Years II and III, students complete three liberal arts distribution electives: an HUM course, an SSC course, and a BEH course.*

***If the elective DMS 443 Advanced Problem Solving in Vascular Sonography is taken, total semester credits come to 14, and degree credits to 131.*

Total credits to complete degree requirements: 130 credit hours

Curriculum: Professional Phase: Bachelor of Science in Diagnostic Medical Sonography-Echocardiography Track (Accelerated, 36 months)

Year II — fall

COURSE	TITLE	CREDIT HOURS
DMS 200	Introduction to Diagnostic Medical Sonography	2
DMS 208	Sonographic Physics and Instrument I	3
DMS 235	Cardiac Ultrasound I: Cardiovascular Principles	3
DMS 236L	Cardiac Ultrasound Imaging Lab I	4
TOTAL		12

Year II — spring

COURSE	TITLE	CREDIT HOURS
DMS 218	Sonographic Physics and Instruments II	3
DMS 245	Cardiac Ultrasound II: Introduction to Heart Disease	4
DMS 246L	Cardiac Ultrasound Imaging Lab II	5
	Distribution Elective*	3
TOTAL		15

Year II — summer

COURSE	TITLE	CREDIT HOURS
DMS 304	Problem Solving in Physics and Instrument III	3
DMS 305	Cardiac Ultrasound III: Pediatric and Adult Congenital Heart Disease	3
DMS 307L	Cardiac Ultrasound Imaging Lab III	2
DMS 320	Introduction to Vascular Sonography (with lab)	5
TOTAL		13

Year III — fall

COURSE	TITLE	CREDIT HOURS
DMS 325	Cardiac Ultrasound IV: Advanced Echocardiography	3
DMS 330C	Cardiac Ultrasound Practicum I	8
LIB 512O	Healthcare Ethics	3
	Distribution Elective*	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
DMS 401	Cardiac Ultrasound V: Critical Thinking in Echocardiography	4
DMS 415C	Cardiac Ultrasound Practicum II	8
DMS 446	Cardiac Ultrasound Capstone I	1
	Distribution Elective*	3
TOTAL		16

Year III — summer

COURSE	TITLE	CREDIT HOURS
DMS 425C	Cardiac Ultrasound Practicum III	8
DMS 431	Cardiac Ultrasound Registry Review	3
DMS 443	Advanced Problem Solving in Vascular Sonography**	(1)
DMS 456	Cardiac Ultrasound Capstone II	1
TOTAL		12 (13)

**During Years II & III, students complete three liberal arts distribution electives: a HUM course, a SSC course, and a BEH course.*

***If the elective DMS 443 Advanced Problem Solving in Vascular Sonography is taken, total semester credits come to 14, and degree credits to 128.*

Total credits to complete degree requirements: 127 credit hours

Bachelor of Science in Diagnostic Medical Sonography, General and Echocardiography (Fast Track, 24 months)

The Diagnostic Medical Sonography (DMS) profession uses sound waves (ultrasound) to produce multi-dimensional dynamic images of tissue, organs, and blood flow inside the human body for the diagnosis of various medical conditions. The sonographer, a highly skilled imaging technologist, uses sophisticated ultrasound equipment to identify disease. In addition, the sonographer works closely with physicians in the processing of the ultrasound images to make a diagnosis.

The DMS program offers a full-time, Fast Track, 24-month course of study that begins in the fall semester. The comprehensive curriculum includes primary specialties of ultrasound, plus secondary specialties, offered across two tracks; the General ultrasound track, includes training in abdominal, obstetrics/gynecology, breast, pediatric, musculoskeletal and vascular sonography; the Echocardiography track focuses on adult echocardiography with specialty tracks in pediatric echocardiography, and vascular sonography.

Curriculum: Bachelor of Science in Diagnostic Medical Sonography-General Track (Fast Track, 24 months)

Year I — fall

COURSE	TITLE	CREDIT HOURS
DMS 200	Introduction to Diagnostic Medical Sonography	2
DMS 202	Obstetrics/Gynecology Sonography I	3
DMS 204L	Sonography Laboratory Procedures I	4
DMS 206	Abdominal Sonography i	3
DMS 208	Sonographic Physics and Instruments I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
DMS 212	Obstetrics/Gynecology Sonography ii	6
DMS 214L	Sonography Laboratory Procedures II	4
DMS 216	Abdominal Sonography II	3
DMS 218	Sonographic Physics and Instruments II	3
TOTAL		13

Year I — summer

COURSE	TITLES	CREDIT HOURS
DMS 304	Problem Solving in Physics and Instruments III	3
DMS 205	Breast Sonography	3
DMS 320	Introduction to Vascular Sonography (with lab)	5
DMS 224L	Sonographic Laboratory Procedures III	1
TOTAL		12

Year II — fall

COURSE	TITLE	CREDIT HOURS
DMS 302C	General Clinical Sonography I	8
DMS 310	Critical Thinking in Sonography I	2
DMS 315	Pediatric Sonography	3
LIB 220O	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
DMS 312C	General Clinical Sonography II	8
DMS 410	Critical Thinking in Sonography II	2
DMS 420	Musculoskeletal Sonography	3
TOTAL		13

Year II — summer

COURSE	TITLE	CREDIT HOURS
DMS 412C	General Clinical Sonography III	8
DMS 440	Advanced Problem Solving in Sonography	2
LIB 512O	Healthcare Ethics	3
DMS 443	Advanced Problem Solving in Vascular Sonography*	(1)
TOTAL		13 (14)

**If the elective DMS 443 Advanced Problem Solving in Vascular Sonography is taken, total semester credits come to 14, and degree credits to 83.*

Total credits to complete degree requirements: 82 credit hours

Curriculum: Bachelor of Science Program in Diagnostic Medical Sonography-Echocardiography (Fast Track, 24 Months)

Year I — fall

COURSE	TITLE	CREDIT HOURS
DMS 200	Introduction to Diagnostic Medical Sonography	2
DMS 208	Sonographic Physics and Instruments I	3
DMS 235	Cardiac Ultrasound I: Cardiovascular Principles	3
DMS 236L	Cardiac Ultrasound Imaging Lab I	4
TOTAL		12

Year I — spring

COURSE	TITLE	CREDIT HOURS
DMS 218	Sonographic Physics and Instruments II	3
DMS 245	Cardiac Ultrasound II: Introduction to Heart Disease	4
DMS 246L	Cardiac Ultrasound Imaging Lab II	5
TOTAL		12

Year I — summer

COURSE	TITLE	CREDIT HOURS
DMS 304	Problem Solving in Physics and Instruments III	3
DMS 305	Cardiac Ultrasound III: Pediatric and Adult Congenital Heart Disease	3
DMS 307L	Cardiac Ultrasound Imaging Lab III	2
DMS 320	Introduction to Vascular Sonography (with lab)	5
TOTAL		13

Year II — fall

COURSE	TITLE	CREDIT HOURS
DMS 325	Cardiac Ultrasound IV: Advanced Echocardiography	3
DMS 330C	Cardiac Ultrasound Practicum I	8
LIB 220O	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		14

Year II — spring

COURSE	TITLE	CREDIT HOURS
DMS 401	Cardiac Ultrasound V: Critical Thinking in Echocardiography	4
DMS 415C	Cardiac Ultrasound Practicum II	8
DMS 446	Cardiac Ultrasound Capstone I	1
TOTAL		13

Year II — summer

COURSE	TITLE	CREDIT HOURS
DMS 425C	Cardiac Ultrasound Practicum III	8
DMS 456	Cardiac Ultrasound Capstone II	1
DMS 431	Cardiac Ultrasound Registry Review	3
DMS 443	Advanced Problem Solving in Vascular Sonography*	(1)
LIB 512O	Healthcare Ethics	3
TOTAL		15(16)

**If the elective DMS 443 Advanced Problem Solving in Vascular Sonography is taken, total semester credits come to 15, and degree credits to 79.*

Total credits to complete degree requirements: 79 credit hours

Bachelor of Science Degree in Magnetic Resonance Imaging (Accelerated and Fast Track)

Magnetic Resonance Imaging, also referred to as MRI, is a procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed images of body structures for the purpose of diagnosis. MRI technologists use their knowledge of anatomy, physiology, patient care, and MRI physical principles to safely operate advanced MRI scanners and assist the radiologist in the diagnosis of disease and injury. Unlike most MRI programs, this is a primary pathway program that recognizes MRI as a distinct and separate imaging discipline. Hence, no previous background in medical imaging science is required.

Admission Technical Standards
Technical Standards for Admission, Promotion, and Graduation

Candidates for and students enrolled in health sciences professional programs must have abilities and skills in the areas of observation; communication; and motor, intellectual, and behavioral/social attributes. The following technical standards describe the nonacademic qualifications (required in addition to academic standards) that the MRI program considers essential for the successful progression in and completion of the educational objectives of its curriculum.

Although the MRI program will engage in an interactive process with applicants with disabilities, it reserves the right not to admit any applicant who, upon completion of the interactive process, cannot meet the technical standards set forth below, with or without reasonable accommodations. Reasonable accommodation for persons with prior documented disabilities will be considered on an individual basis. Students wishing to request accommodations for disabilities should contact the Director for Office of Student Access and Accommodations.

MRI Technical Standards
A magnetic resonance technologist provides direct care for patients in hospitals or outpatient facilities and must be able to apply acquired knowledge to skillfully perform MRI procedures. These technical standards are based upon the minimum tasks performed by graduates of the program as recommended by the American Society of Radiologic Technologists (www.asrt.org) and the American Registry of Radiologic Technologists (www.arrt.org). Listed below are the technical standards that all applicants must meet in order to participate in and successfully complete the MRI program:

- Sufficient visual acuity to evaluate MR image quality, accurately administer contrast agents, utilize imaging equipment, and provide the necessary patient assessment and care.
- Sufficient ability to receive and provide verbal communication with patients and members of the healthcare team and to assess the health needs of patients through the use of monitoring devices such as intercom systems, cardiac monitors, respiratory monitors, and systems alarms.
- Sufficient gross and fine motor coordination to manipulate equipment such as a scan console, power injectors, and various RF receiver coils; in addition, MRI technologists must possess adequate motor coordination to perform venipuncture that is required for many routine MRI procedures.
- Sufficient communication skills (verbal, reading, writing) to interact with individuals and to communicate their needs promptly and effectively, as may be necessary in the patient's/client's interest.
- Sufficient intellectual and emotional function to plan and implement patient care

Examples of specific technical standards the MRI student must be able to meet are as follows:

- Ability to lift, transfer, and/or move patients from wheelchair/stretcher to scan table; dock/release and wheel scan table to/from scan room to patient waiting area.
- Ability to lift, move, reach, or push MRI equipment (lift MRI coils of up to 35 pounds, push/wheel docking table with patient to/from scan room).
- Manual dexterity and ability to bend/stretch.
- Ability to distinguish colors and shades of gray.
- Ability to endure an eight-hour day with a minimum of four to six hours of standing or walking.
- Effective interpersonal communication skills in the process of interviewing patients and explaining the procedure verbally and/or in writing.
- Ability to recognize and be sensitive to the needs of others
- Ability to function in a fast-paced environment
- Ability to read and extract information from the medical chart, patient requisitions, and doctors' orders

To perform/assist with MRI procedures on patients, students must initially undergo the same screening procedures as patients, staff, and visitors in order to enter the scan room. The MRI scan room contains a region of intense magnetic field. Objects that display any form of ferromagnetism are therefore of particular concern for MRI. Contraindications for entering the MRI scan room include, and are not limited to

- certain biomedical implants, materials, and devices (e.g., aneurysm clips, brain clips);

- certain electrically, magnetically, and mechanically activated implants and devices (e.g., cardiac pacemakers, cochlear implants); and
- certain metallic foreign objects (e.g., shrapnel, bullets, metal in eyes).

The 32-month Bachelor of Science in Magnetic Resonance Imaging is an accelerated program combining online courses, courses on the Boston campus, and clinical internships throughout Massachusetts and southern New Hampshire. The typical course of study begins with 16 months of core curriculum preprofessional courses and general education courses followed by 16 months of professional courses and clinical internships.

Students enrolled in the MRI program receive their internship training at hospital affiliates in the Greater Boston area and southern New Hampshire. These include, but are not limited to, Beth Israel Deaconess Medical Center, Brigham and Women's Hospital, Catholic Medical Center, Dana-Farber Cancer Institute, Elliot Hospital, Mt. Auburn Hospital, and Shields MRI Centers Massachusetts and Rhode Island.

Upon graduation from the Bachelor of Science program in Magnetic Resonance Imaging, students are eligible to apply for certification through examination by the American Registry of Radiologic Technologists.

To meet the residency requirement for the BS in Magnetic Resonance Imaging degree, students must complete at least 64 credit hours at the University.

Curriculum: Bachelor of Science in Magnetic Resonance Imaging (Accelerated)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	
MAT 151	Calculus I	3
TOTAL		15

** If placed in Precalculus, the student receives 3 credit hours of General Elective credit.*

Year I—spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology	3
BIO 210L	Anatomy and Physiology II Lab	1
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1
LIB 112	Writing in the Humanities	3
MAT 151	Calculus I or General Elective	3
LIB 120	Introduction to Psychology	3
TOTAL		17

Year I — summer

COURSE	TITLE	CREDIT HOURS
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
	Distribution Elect	3
HSC 310	Healthcare Informatics	3
TOTAL		12

** The two distribution electives must be a humanities (HUM) elective and a social science (SSC) elective.*

Year II — fall

COURSE	TITLE	CREDIT HOURS
	Distribution Elective	3
PHY 275	Physics for Medical Imaging	4
BEH 250	Health Psychology	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 512O	Healthcare Ethics	3
TOTAL		16

The student must earn a minimum grade of C in BIO 110 and 210; CHE 110 and 210; MAT 150, 151, 152, 197, and 261; RSC 110; HSC 310O; and PHY 270.

Professional Phase: The student must earn a minimum grade of C+ in all professional courses and achieve and maintain a professional 2.5 grade point average (GPA) from this semester on to progress in the program and graduate.

Year II — spring

COURSE	TITLE	CREDIT HOURS
BEH 331	The Patient Experience	3
MRI 305	Patient Care in MRI	2
MRI 401	Physical Principles of MRI	3
MRI 402	Introduction to Clinical MRI	1
MRI 405	MRI Safety and Applications	3
PSB 320	Introduction to Healthcare Delivery	3
RSC 310	Cross-sectional Anatomy	3
TOTAL		18

Year II — summer

COURSE	TITLE	CREDIT HOURS
MRI 410	MRI Procedures	3
RSC 325	Clinical Pathophysiology	4
MRI 420C	Clinical Internship I	4
MRI 418	MRI Clinical Skills Lab 1	1
RSC 110	Medical Terminology	1
TOTAL		13

Year III — fall

COURSE	TITLE	CREDIT HOURS
MRI 415	MRI Image Production and Quality	3
MRI 421C	MRI Clinical Internship II	10
MRI 428	MRI Skills Lab II	1
TOTAL		14

Year III — spring

COURSE	TITLE	CREDIT HOURS
MRI 435	MRI Registry Review	2
MRI 422C	MRI Clinical Internship III	10
MRI 430	MRI Pathology for Imaging Technologists*	3
TOTAL		15

Total credits to complete degree requirements: 120 credit hours (1,008 clinical internship hours)

Curriculum: Bachelor of Science Program in Magnetic Resonance Imaging (Fast Track, 16 months)

The student must earn a minimum grade of C+ in all professional courses and achieve and maintain a professional 2.5 grade point average (GPA) to progress in the program and graduate.

Year I — spring

COURSE	TITLE	CREDIT HOURS
MRI 305	Patient Care in MRI	2
BEH 331	The Patient Experience	3
MRI 401	Physical Principles of MRI	3
MRI 402C	Introduction to Clinical MRI	1
MRI 405	MRI Safety and Applications	3
RSC 310	Cross-sectional Anatomy	3
PSB 320	Introduction to Healthcare Delivery	3
TOTAL		18

Year I — summer

COURSE	TITLE	CREDIT HOURS
MRI 410	MRI Procedures	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
RSC 325	Clinical Pathophysiology	4
MRI 420C	MRI Clinical Internship I	4
MRI 418	MRI Clinical Skills Lab	1
RSC 110	Medical Terminology	1
TOTAL		16

Year I — fall

COURSE	TITLE	CREDIT HOURS
*LIB 512	Healthcare Ethics (transfer and AS students only)	(3)
MRI 415	MRI Image Production and Quality	3
MRI 421C	MRI Clinical Internship II	10
MRI 428	MRI Clinical Skills Lab II	1
TOTAL		14(17)

Year II — spring

COURSE	TITLE	CREDIT HOURS
MRI 422C	MRI Clinical Internship III	10
MRI 430	MRI Pathology for Imaging Technologists*	3
MRI 435	MRI Registry Review	2
TOTAL		15

Total credits to complete degree requirements: 63 (67) credit hours

Bachelor of Science Degree in Nuclear Medicine Technology (Accelerated and Fast Track)

Nuclear medicine is a medical specialty that uses radioactive pharmaceuticals and tracers in the diagnosis and treatment of disease. The specialty relies on the expertise of professionals in the allied health sciences for its sophisticated, high-technology medical procedures. Among these professionals are nuclear medicine technologists, with skills ranging from patient care to the operation of nuclear instrumentation.

The technologist performs functions that complement those of nuclear medicine physicians, such as the care and preparation of patients for nuclear medicine procedures, application of quality control techniques to the nuclear medicine products and procedures, operation of instruments for in vivo and in vitro examinations, involvement in research activities, and participation in the management of the nuclear medicine laboratory.

Students enrolled in the Nuclear Medicine Technology program receive their internship training at hospital affiliates in the Greater Boston and select New England areas. These include, but are not limited to in Boston, Beth Israel Deaconess Medical Center, Boston Medical Center, Brigham and Women's Hospital, Dana-Farber Cancer Institute, Massachusetts General Hospital. Throughout New England, these include, but not limited to Baystate Medical Center, Dartmouth-Hitchcock Medical Center, Hartford Hospital, Maine Medical Center, and UMass Memorial Medical Center. Transportation to and from clinical settings is the responsibility of the student.

Upon graduation from the Bachelor of Science in Nuclear Medicine Technology program, the student is eligible to apply for certification through examination by the American Registry of Radiologic Technologists and the Nuclear Medicine Technology Certification Board. To meet the residency requirement for the Bachelor of Science in Nuclear Medicine Technology, students must complete at least 60 credit hours at the University.

Progression into the Professional Phase for Nuclear Medicine Technology and MCPHS Internal Transfers
All students must meet the following requirements in order to progress into the professional phase of the Nuclear Medicine Technology program. These requirements apply to students entering MCPHS as freshmen, students who are transferring into majors in the Nuclear Medicine Technology program from other programs within MCPHS, and those who are transferring from another accredited college or university into the professional phase of Nuclear Medicine Technology Bachelor or Fast Track Baccalaureate program.

The professional phase of the Nuclear Medicine Technology program is during the third year. Students will follow a synchronous distance/online class schedule, which means that you will log and call in during specific class times. This schedule offers you the flexibility of an online education. Students are required to meet in person approximately twice per semester at predetermined locations (usually the Worcester campus) for labs and/or other class activities. Students participate in clinical experiences at sites predetermined by your specific location, where you'll work alongside industry experts and gain firsthand knowledge of what it's like to be a nuclear medicine technologist.

Technical Standards for Nuclear Medicine Technology
These technical standards conform to the professional technical standards required for the safe and ethical practice of the task/skills associated with clinical nuclear medicine. Each student, with reasonable accommodation, must be able to demonstrate that they are able to:

- Reach and manipulate equipment to its highest position (6 feet);
- Communicate in a clear and concise manner with patients of all ages, including obtaining health history and pertinent information;
- Read and apply appropriate instructions contained in requisitions, notes and patient charts;
- Transfer patients from wheelchairs and stretchers and help them on/off treatment table;
- Exert force and lift objects of 50 pounds routinely;
- Perform simple motor skills for unrestricted time periods;
- Push, pull, bend and stoop;
- Work standing on their feet 80% of the time;
- Reach and work overhead;
- Move a standard wheelchair and/or stretcher from a waiting area to a treatment area;
- Understand and apply clinical instructions given by department personnel;
- Visually monitor patients/charts/machine indicator lights in dimly lit conditions;
- Detect audible alarms and background sounds during procedures to ensure patient/staff safety;
- Demonstrate manual dexterity to perform necessary manipulations such as drawing doses with a syringe, manipulating locks, putting on surgical gloves;
- Endure an eight-hour day with a minimum of four to six hours of standing or walking;
- Endure a minimum of two hours of didactic instructions in a classroom environment;
- Perform tasks requiring satisfactory visual and auditory acuity;

- Read printed words in a textbook, read camera control panel and computer screens, read patient dose and medical charts, and read scintigraphic images;
- Hear instructions from health care professionals and be able to respond to verbal requests by patients at a distance of 6 to 10 feet;
- Give clear verbal commands to patients assigned for an imaging procedure at a distance of 6 to 10 feet;
- Communicate effectively with patients and other health care professionals;
- Interact compassionately and effectively with the sick and injured;
- Protect self and others from unnecessary radiation exposure

Joint Review Committee on Education Programs in Nuclear Medicine Technology
The Nuclear Medicine Technology program is accredited by the Joint Review Committee on Education Programs in Nuclear Medicine Technology. Mailing address: 820 W Danforth Rd, #B1; Edmond, OK 73003; Phone: (405) 285-0546 www.jrcnmt.org.

Requirements for Transfer
An overall cumulative grade point average (GPA) of 2.5 and successful completion of the all BIO, CHE, PHY, and MAT courses with a C+ or better and a grade of C or better for all non-science courses is required in order to progress into the professional phase of the student's chosen program:

COURSE	TITLE	CREDIT HOURS
BIO 110/110L	Anatomy and Physiology I with lab	4
BIO 210/210L	Anatomy and Physiology II with Lab	4
BIO 150/151L	Biology I: Cell & Molecular Biology (with lab)	4
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
LIB 111	Academic Writing and Research	3
LIB 112	Writing in the Humanities	3
PHY 181	General Physics or	
PHY 275	Physics for Medical Imaging	4
MAT 141	Algebra and Trigonometry, or	
MAT 150/151	Pre- calculus and Calculus I	3/6
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory and	1
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1

For internal transfers, admission into the desired program is subject to space availability; in addition to the above requirements, the following must be completed:
- Transcript review by the appropriate program director and the dean of the school
- A written essay (maximum of 500 words) describing the reason for requesting the particular specialty area and what the student knows about the profession
- A Change of Program form signed by the Center for Academic Success and Enrichment
- A personal interview with the program director or designated program faculty

NOTE: All Nuclear Medicine Technology students must fulfill requirements for CPR certification and medical terminology prior to NMT Internship (NMT 330C).

Curriculum: Bachelor of Science in Nuclear Medicine Technology (Accelerated)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150	Biology I: Cell & Molecular Biology	3
BIO 151L	Biology I: Cell & Molecular Biology Lab	1
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1

ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 141	Algebra and Trigonometry	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 261	Statistics	3
SSC	SSC Distribution Elective	3
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
LIB 512	Healthcare Ethics	3
PHY 181	General Physics	4
BEH	Distribution Elective	3
HUM	Distribution Elective	3
TOTAL		17

Professional Phase: The student must earn a minimum grade of C+ in all courses and achieve and maintain a professional 2.5 grade point average (GPA) from this semester on to progress in the program and graduate.

Year III---fall

COURSE	TITLE	CREDIT HOURS
NMT 260	Fundamentals of Nuclear Medicine	3
NMT 305	Cardiovascular Imaging	3
NMT 310	Radiation Sciences & Regulations	3
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 250	Elements of Clinical Care	2
RSC 325	Clinical Pathophysiology	4
TOTAL		16

Year III — spring

COURSE	TITLE	CREDIT HOURS
NMT 320	Nuclear Medicine Imaging	6
NMT 330C	Nuclear Med. Internship I	4
NMT 340	Molecular Imaging and Theranostics	3
TOTAL		**13**

Year III — summer

COURSE	TITLE	CREDIT HOURS
NMT 331C	Nuclear Medicine Internship II	7
NMT 350	Radiopharmacy	3
NMT 390	Problem Solving in Nuclear Medicine I	2
TOTAL		12

Year IV -- fall

COURSE	TITLE	CREDIT HOURS
NMT 332C	Nuclear Medicine Internship III	8
NMT 391	Problem Solving in Nuclear Medicine II	2
RSC 320	CT & Cross-Sectional Anatomy	3
TOTAL		13

Total credits to complete degree requirements: 120 credit hours

Curriculum: Bachelor of Science Program in Nuclear Medicine Technology (Fast Track, 16 Months)

Year I - fall

COURSE	TITLE	CREDIT HOURS
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 250	Elements of Clinical Care	2
RSC 325	Clinical Pathophysiology	4
NMT 260	Fundamentals of Nuclear Medicine	3
NMT 305	Cardiovascular Imaging	3
NMT 310	Radiation Sciences & Regulations	3
TOTAL		16

Year I – spring

COURSE	TITLE	CREDIT HOURS
NMT 320	Nuclear Medicine Imaging	6
NMT 330C	Nuclear Medicine Internship I	4
NMT 340	Molecular Imaging & Theranostics	3
LIB 220	Interprofessional Communications	3
TOTAL		16

Year I - summer

COURSE	TITLE	CREDIT HOURS
NMT 331C	Nuclear Medicine Internship II	8
NMT 350	Radiopharmacy	3
NMT 390	Problem Solving in Nuclear Medicine I	2
LIB 512	Healthcare Ethics	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
NMT 332C	Nuclear Medicine Internship III	7
NMT 391	Problem-Solving in Nuclear Medicine II	2
RSC 320	CT & Cross Sectional Anatomy	3
TOTAL		12

NOTE: All Nuclear Medicine Technology students must fulfill requirements for CPR certification and to pass medical terminology proficiency prior to NMT Internship I (NMT 330C).

Total credits to complete degree requirements: 60* credit hours

*A minimum of 120 credits needed to graduate with a BS in NMT

Bachelor of Science Degree in Radiation Therapy (Four-year and Fast Track)

Radiation therapy is an allied health specialty that utilizes ionizing radiation in the treatment of disease, primarily cancer. The primary responsibilities of a radiation therapist include implementing treatment plans prescribed by a radiation oncologist and assisting in the planning of treatment with the medical dosimetrist and radiation physicist. These responsibilities require highly specialized technical skills as well as highly developed interpersonal skills for interacting effectively with other members of the oncology treatment team, patients, and their families. Students in the radiation therapy program develop these skills through an intensive didactic curriculum and through clinical internships under the supervision of certified and licensed radiation therapists. Internship training is provided at the clinical affiliates. These include, but are not limited to, Baystate Medical Center, Beth Israel Deaconess Medical Center, Beth Israel Deaconess Cancer Center and Surgical Pavilion – Needham, Brigham and Women's Hospital, Dana-Farber / Brigham and Women's (DF/BW) Cancer Center (Milford), Dana-Farber Cancer Institute, DF/BW at South Shore Hospital, Lahey Clinic, Lahey Clinic North, MGH North Shore Center for Outpatient Care, Mt. Auburn Hospital, North Main Radiation, Rhode Island Hospital, Shields Radiation Oncology Center (Mansfield), St. Vincent Hospital Radiation Oncology Center, Southcoast Centers for Cancer Care, UMass Memorial Hospitals in Marlborough, Fitchburg and Worchester, and Winchester Hospital Radiation Oncology Center. Due to the widespread geographical locations of the clinical settings in the radiation therapy program, students must provide their own reliable transportation to and from clinical sites. The majority of the clinical settings are not accessible by public transportation. Transportation to and from clinical settings and laboratory courses is the responsibility of the student.

Upon graduation from the Bachelor of Science in Radiation Therapy program, the graduate is eligible to sit for the certification examination administered by the American Registry of Radiologic Technologists.

To meet the residency requirement for the Bachelor of Science in Radiation Therapy, students must complete at least 61 credit hours at the University.

Technical Standards for Radiation Therapy
MCPHS has established the following list of technical standards for the majors of Radiography, Nuclear Medicine and Radiation Therapy. These technical standards conform to the professional technical standards required for the safe and ethical practice of the tasks/skills associated with medical radiography, clinical nuclear medicine technology and clinical radiation therapy. Each student, with or without a reasonable accommodation, must be able to demonstrate that they are able to:

- Reach and manipulate equipment to its highest position (6 feet);
- Move a standard wheelchair and/or stretcher from a waiting area to the imaging/treatment room;
- Transfer patients from wheelchairs and stretchers and help them on/off imaging/treatment table;
- Lift a minimum of 60 pounds and ensure patient safety;
- Perform CPR;
- Move from room to room and maneuver in small enclosed spaces;
- Demonstrate manual dexterity to perform necessary manipulations such as drawing doses with a syringe, manipulating locks, putting on surgical gloves;
- Use sufficient corrected eyesight to observe patients and evaluate radiographic quality;
- Visually monitor patients/charts/machine indicator lights in dimly lit conditions;
- Read and apply appropriate information and instructions contained in requisitions, notes and patient charts;
- Detect audible alarms and background sounds during procedures to ensure patient and staff safety;
- Possess sufficient verbal and written skills to communicate needs promptly and effectively in English;
- Communicate in a clear and concise manner with patients of all ages, including obtaining health history and pertinent information;
- Understand and apply clinical instructions given by department personnel;
- Be able to adapt to changing environments and schedules;
- Be competently able to use a needle to tattoo a patient and/or administer intravenous access;
- Establish rapport with fellow students, coworkers, patients and families;
- Function under stressful conditions;
- Endure an eight-hour clinical day with a minimum of four to six hours of standing or walking;
- Endure a minimum of two hours of didactic instruction in a normal classroom environment;

Working conditions for Radiation Therapists and Radiation Therapy students typically involve:

- Possible exposure to ionizing radiation.
- Possible exposure to chemical solutions.

Radiation therapy students may be required to assist with MRI procedures on patients. To perform/assist with MRI procedures on patients, students must initially undergo the same screening procedures as patients, staff, and visitors in

order to enter the scan room. The MRI scan room contains a region of intense magnetic field. Objects that display any form of ferromagnetism are therefore of particular concern for MRI. Contraindications for entering the MRI scan room include, and are not limited to

- certain biomedical implants, materials, and devices (e.g., aneurysm clips, brain clips);
- certain electrically, magnetically, and mechanically activated implants and devices (e.g., cardiac pacemakers, cochlear implants); and
- certain metallic foreign objects (e.g., shrapnel, bullets, metal in eyes).

Progression into the Professional Phase for Radiation Therapy Majors and MCPHS Internal Transfers
All students must meet the following requirements to progress into the professional phase of the radiation therapy program. These requirements apply to students entering MCPHS as freshmen, students who are transferring into Radiation Therapy from other programs within MCPHS, and those who are transferring from another accredited college or university into the professional phase of the Radiation Therapy Program Bachelor or Fast Track Baccalaureate program.

Bachelor of Science in Radiation Therapy Program (Four Year)

An overall cumulative grade point average (GPA) of 2.5 and successful completion of the following courses with a grade of C+ or better is required to progress into the professional phase of the radiation therapy program.

COURSE	TITLE	CREDIT HOURS
BIO 110/210	Anatomy and Physiology I and II (with labs)	8
PHY 181	General Physics	4
MAT 141	Algebra and Trig	3
CHE 110	Basic Chemistry I (with labs) *OR*	
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1

A minimum professional grade point average (GPA) of 2.7 is required for all RTT and RSC classes. All BSRTT students must achieve a minimum passing grade of 78% (C+) in each professional radiation therapy (RTT) course or (RSC) course and must maintain a minimal professional GPA of 2.5 in the first four sequential radiation therapy (RTT) courses to progress. A professional GPA of 2.7 is then required at the end of each semester to progress in the radiation therapy major and to fulfill University requirements for graduation.

For internal transfers, admission into the RTT program is subject to space availability; in addition to the above requirements, the following must be completed:

- Transcript review by the appropriate Program Director and The Dean of the School of Medical Imaging and Therapeutics
- A personal meeting with the Program Director, Kelly Ebert, to discuss the reason for changing majors. Students should be prepared to discuss what they know about the profession of radiation therapy.
- A Change of Program form signed by the Center for Academic Success and Enrichment (CASE)
- NOTE: All Radiation Therapy students must be certified in CPR before Clinical Internship (RTT 300C) begins.

Curriculum: Bachelor of Science in Radiation Therapy (Four Year)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 120	Introduction to Psychology	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
LIB 112	Writing in the Humanities	3
MAT 141	Algebra & Trig	3
	SSC Elective	3
TOTAL		13

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
RSC 325	Clinical Pathophysiology	4
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 250	Elements of Clinical Care	2
BEH	Behavioral Science Elective	3
TOTAL		14

Year II — spring

COURSE	TITLE	CREDIT HOURS
HUM	Humanities Elective	3
LIB 220	Interpersonal Communications	3
MAT 261	Statistics	3
PHY 181	General Physics	4
RSC 287	Radiation Protection and Biology	3
TOTAL		16

Professional Phase: The student must earn a minimum grade of C+ in all RTT or RSC courses and maintain a professional 2.5 grade point average (GPA) fin each semester to progress in the program and graduate.

Year III — fall

COURSE	TITLE	CREDIT HOURS
RTT 360	Foundations of Radiation Therapy with Lab	3
RTT 280	Medical Radiation Physics I	3
RSC 320	CT and Cross-Sectional Anatomy	3
RTT300C	Radiation Therapy Internship I	4
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
RTT 262	Technical Aspects of RT	3
RTT 281	Medical Radiation Physics II	3
RTT 283	Treatment Calculations and Planning	3
RTT 290O	RT Treatment Methods and Lab	3
RTT 325C	Radiation Therapy Internship II	4
TOTAL		16

Year III — summer

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
RTT 350C	Radiation Therapy Internship III	8
TOTAL		11

Year IV — fall

COURSE	TITLE	CREDIT HOURS
RTT 400C	Radiation Therapy Internship IV	8
RTT 370O	Radiation Therapy Registry Review I	3
RTT 347O	Practical Physics Concepts in RT	3
TOTAL		14

Year IV — spring

COURSE	TITLE	CREDIT HOURS
RTT 425C	Radiation Therapy Internship V	8
RSC 330	Research in Rad Sci	2
RRTT 371	Radiation Therapy Registry Review II	3
TOTAL		13

Total credits to complete degree requirements: 124 credit hours

Bachelor of Science in Radiation Therapy Program (Fast Track)

Curriculum: Bachelor of Science Program in Radiation Therapy (Fast Track, 24 Months)

NOTE: All enrollees must fulfill requirements for CPR certification prior to taking RTT300C.

Year I — summer

COURSE	TITLE	CREDIT HOURS
RSC 250	Elements of Clinical Care	2
RSC 325	Clinical Pathophysiology	4
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 287	Radiation: Protection and Biology	3
RSC 330	Research in Rad Sci	2
TOTAL		12

Year I — fall

COURSE	TITLE	CREDIT HOURS
RSC 320	CT and Cross-sectional Anatomy	3
RTT 360	Foundations of Radiation Therapy with Lab	3
RTT 280	Medical Radiation Physics I	3
RTT 300C	Radiation Therapy Internship I	4
TOTAL		13

Year I — spring

COURSE	TITLE	CREDIT HOURS
RTT 262	Technical Aspects in RT	3
RTT 281	Medical Radiation Physics II	3
RTT 283	Treatment Calculations and Planning	3
RTT 290	Radiation Therapy Treatment Methods and Lab	3
RTT 325C	Radiation Therapy Internship II	4
TOTAL		16

Year II — summer

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
RTT 350C	Radiation Therapy Internship III	8
TOTAL		11

Year II — fall

COURSE	TITLE	CREDIT HOURS
RTT 400C	Radiation Therapy Internship IV	8
RTT 370	Radiation Therapy Registry Review I	3
RTT 347	Practical Physics Concepts in RT	3
TOTAL		14

Year II — spring

COURSE	TITLE	CREDIT HOURS
RTT 425C	Radiation Therapy Internship V	8
RTT 371	Radiation Therapy Registry Review II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		14

Total credits to complete degree requirements: 80 credit hours

Bachelor of Science Degree in Radiography (Accelerated and Fast Track)

Radiography is an imaging science that utilizes ionizing radiation to assist physicians in the diagnosis of disease. Responsibilities of the radiographer include patient care and assessment, patient education, preparation and positioning for radiographic procedures, and evaluation of image quality.

The first year of this program consists of a core curriculum of preprofessional and general education courses. The didactic and clinical components of the radiography curriculum are integrated into the second and third years. Upon graduation from the Bachelor of Science in Radiography program, the student is eligible to apply for certification through examination by the American Registry of Radiologic Technologists.

To meet the residency requirement for the BS in Radiography, students must complete at least 61 credit hours at the University.

Technical Standards for Radiography
MCPHS has established the following list of technical standards for the majors of Radiography, Nuclear Medicine and Radiation Therapy. These technical standards conform to the professional technical standards required for the safe and ethical practice of the tasks/skills associated with medical radiography, clinical nuclear medicine technology and clinical radiation therapy. Each student, with or without a reasonable accommodation, must be able to demonstrate that they are able to:

- Reach and manipulate equipment to its highest position (6 feet);
- Move a standard wheelchair and/or stretcher from a waiting area to the imaging/treatment room;
- Transfer patients from wheelchairs and stretchers and help them on/off imaging/treatment table;
- Lift a minimum of 60 pounds and ensure patient safety.
- Perform CPR
- Move from room to room and maneuver in small, enclosed spaces
- Demonstrate manual dexterity to perform necessary manipulations such as drawing doses with a syringe, manipulating locks, putting on surgical gloves;
- Use sufficient corrected eyesight to observe patients and evaluate radiographic quality.
- Visually monitor patients/charts/machine indicator lights in dimly lit conditions
- Read and apply appropriate information and instructions contained in requisitions, notes and patient charts;
- Detect audible alarms and background sounds during procedures to ensure patient and staff safety;
- Possess sufficient verbal and written skills to communicate needs promptly and effectively in English.
- Communicate in a clear and concise manner with patients of all ages, including obtaining health history and pertinent information
- Understand and apply clinical instructions given by department personnel;
- Be able to adapt to changing environments and schedules.
- Establish rapport with fellow students, coworkers, patients and families.
- Function under stressful conditions.
- Endure an eight-hour clinical day with a minimum of four to six hours of standing or walking;
- Endure a minimum of two hours of didactic instruction in a normal classroom environment; Working conditions for Radiographers and Radiography students typically involve:
- Possible exposure to ionizing radiation.
- Possible exposure to chemical solutions.

Prior to clinical externships all students must initially undergo the same screening procedures as patients, staff, and visitors in order to enter the scan room. The MRI scan room contains a region of intense magnetic field. Objects that display any form of ferromagnetism are therefore of particular concern for MRI. Contraindications for entering the MRI scan room include, and are not limited to

- certain biomedical implants, materials, and devices (e.g., aneurysm clips, brain clips);
- certain electrically, magnetically, and mechanically activated implants and devices (e.g., cardiac pacemakers, cochlear implants); and
- certain metallic foreign objects (e.g., shrapnel, bullets, metal in eyes).

NOTE: All Radiography students must fulfill the requirement for CPR certification and for medical terminology before the first Radiography Internship (RAD 201C).

Progression into the Professional Phase for BS in Radiography Majors and MCPHS Internal Transfers
All students must meet the following requirements in order to progress into the professional phase of the Radiography Program. These requirements apply to students entering MCPHS as freshmen, students who are transferring into Radiography from other programs within MCPHS, and those who are transferring from another accredited college or

university into the professional phase of the Radiography Program Bachelor or Fast Track Baccalaureate program.

Requirements
An overall cumulative grade point average (GPA) of 2.0 and successful completion of the following courses with a grade of C or better is required in order to progress into the professional phase of the student's chosen program:

COURSE	TITLE	CREDIT HOURS
BIO 110/210	Anatomy and Physiology I and II (with lab)	8
PHY 181	General Physics for DMS, NMT, RAD, and RT, or	
PHY 275	Physics for Medical Imaging	4
MAT 141	Algebra and Trigonometry for DMS, NMT, RAD, RT, or	
MAT 150/151	Pre- calculus and Calculus I	3/6 for MRI
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
For MRI, NMT, RAD		
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1

For internal transfers, admission into the desired program is subject to space availability; in addition to the above requirements, the following must be completed:

- Transcript review by the appropriate program director and the dean of the school
- A written essay (maximum of 500 words) describing the reason for requesting the particular specialty area and what the student knows about the profession
- A Change of Program form signed by the Center for Academic Success and Enrichment
- A personal interview with the program director or designated program faculty

Curriculum: Bachelor of Science in Radiography (Accelerated)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 141	Algebra and Trigonometry	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
PHY 181	General Physics	4
TOTAL		18

Professional Phase: The student must earn a minimum grade of C+ in all courses and achieve and maintain a professional 2.5 grade point average (GPA) from this semester on to progress in the program and graduate.

Year I — summer

COURSE	TITLE	CREDIT HOURS
RAD 205	Foundations of Radiography	3
RAD 240	X-ray Radiation Physics	2
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 250	Elements of Patient Care	2
RSC 325	Clinical Pathology	4
TOTAL		12

Year II — fall

COURSE	TITLE	CREDIT HOURS
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
RAD 210	Radiographic Procedures I	3
RAD 220	Radiographic Exposure Principles I (with lab)	4
RAD 210L	Radiographic Procedures I Lab	1
MAT 261	Statistics	3
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
HUM/SSC	Distribution Elective	3
RAD 231	Radiographic Pathology	2
RAD 201C	Radiography Internship I	4
RAD 211	Radiographic Procedures II	3
RAD 211L	Radiographic Procedures II Lab	1
RAD 221	Radiographic Exposure Principles II	3
TOTAL		16

Year II — summer

COURSE	TITLE	CREDIT HOURS
RAD 202C	Radiography Internship II	5
RAD 250	Image Critique in Radiography	2
LIB 512	Healthcare Ethics	3
HUM/SSC	Distribution Elective	3
TOTAL		13

Year III — fall

COURSE	TITLE	CREDIT HOURS
RAD 303C	Radiography Internship III	6
RAD 212	Radiographic Procedures III	3
RSC 320	CT and Cross-sectional Imaging	3
RAD 270	Introduction to Problem Solving	2
TOTAL		14

Year III — spring

COURSE	TITLE	CREDIT HOURS
RAD 304C	Radiography Internship IV	6
RAD 370	Problem Solving in Radiography	3
RSC 287	Radiation: Protection and Biology	3
BEH	BEH Elective	3
TOTAL		15

Total credits to complete degree requirements: 120 credit hours

Curriculum: Bachelor of Science Program in Radiography (Fast Track, 24 Months)

Year I — summer

COURSE	TITLE	CREDIT HOURS
RAD 205	Foundations of Radiography	3
RAD 240	X-ray Radiation Physics	2
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 250	Elements of Patient Care	2
RSC 325	Clinical Pathology	4
TOTAL		12

Year I — fall

COURSE	TITLE	CREDIT HOURS
LIB 420	Introduction to Interpersonal Communication for Healthcare Professionals	3
RAD 210	Radiographic Procedures I	3
RAD 210L	Radiographic Procedures I Lab	1
RAD 220	Radiographic Exposure Principles I (with lab)	4
BEH	BEH Elective	3
TOTAL		14

NOTE: All Radiography students must fulfill requirements for CPR certification and medical terminology prior to Radiography Internship (RAD 201C).

Year I — spring

COURSE	TITLE	CREDIT HOURS
RAD 201C	Radiography Internship I	4
RAD 211	Radiographic Procedures II	3
RAD 211L	Radiographic Procedures II Lab	1
RAD 221	Radiographic Exposure Principles II	3
RAD 231	Radiographic Pathology	2
TOTAL		13

Year II — summer

COURSE	TITLE	CREDIT HOURS
RAD 202C	Radiography Internship II	5
RAD 250	Image Critique in Radiography	2
LIB 512	Healthcare Ethics	3
TOTAL		10

Year II — fall

COURSE	TITLE	CREDIT HOURS
RAD 270	Introduction to Problem Solving	2
RAD 212	Radiographic Procedures III	3
RAD 303C	Radiography Internship III	6
RSC 320	CT and Cross-sectional Anatomy	3
TOTAL		14

Year II — spring

COURSE	TITLE	CREDIT HOURS
RAD 304C	Radiography Internship IV	6
RAD 370	Problem Solving in Radiography	3
RSC 287	Radiation: Protection and Biology	3
TOTAL		12

Total credits to complete degree requirements: 75 credit hours

Bachelor of Science in Radiography, Physician Assistant Pathway

This alternative pathway program is designed specifically for students who want the B.S. in Radiography and wish to transfer into a physician assistant program. The program satisfies the prerequisites for most physician assistant programs. Students should be aware, a passing GPA in the radiography program is 2.5 professional and 2.0 cumulative, but acceptance into PA programs would require a much higher GPA.

Curriculum: Bachelor of Science in Radiography, Physician Assistant Pathway

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
BIO 150L	Biology I: Cell and Molecular Biology Lab	1
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 141	Algebra and Trigonometry	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
PHY 181	General Physics	4
TOTAL		14

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
CHE 230	Organic Chemistry for Health Professionals	3
LIB 120	Introduction to Psychology	3
LIB 512	Healthcare Ethics	3
TOTAL		14

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
TOTAL		14

Professional Phase: The student must earn a minimum grade of C+ in all courses and achieve and maintain a professional 2.5 grade point average (GPA) from this semester on to progress in the program and graduate

Year II — summer

COURSE	TITLE	CREDIT HOURS
RAD 205	Foundations of Radiography	3
RAD 240	X-ray Radiation Physics	2
RSC 110	Medical Terminology for the Radiologic Sciences	1
RSC 250	Elements of Patient Care	2
RSC 325	Clinical Pathophysiology	4
TOTAL		12

Year III — fall

COURSE	TITLE	CREDIT HOURS
MAT 261	Statistics	3
RAD 210	Radiographic Procedures I	3
RAD 201L	Radiographic Procedures I Lab	1
RAD 220	Radiographic Exposure Principles I (with lab)	4
BEH	BEH Elective	3
TOTAL		14

NOTE: All Radiography students must fulfill requirements for CPR certification and medical terminology prior to Radiography Internship (RAD 201C).

Year III — spring

COURSE	TITLE	CREDIT HOURS
RAD 201C	Radiography Internship I	4
RAD 211	Radiographic Procedures II	3
RAD 211L	Radiographic Procedures II Lab	1
RAD 221	Radiographic Exposure Principles II	3
RAD 231	Radiographic Pathology	2
TOTAL		13

Year III — summer

COURSE	TITLE	CREDIT HOURS
RAD 202C	Radiography Internship II	5
RAD 250	Image Critique in Radiography	2
LIB 512	Healthcare Ethics	3
TOTAL		10

Year IV — fall

COURSE	TITLE	CREDIT HOURS
RAD 270	Introduction to Problem Solving	2
RAD 212	Radiographic Procedures III	3
RAD 303C	Radiography Internship III	6
RSC 320	CT and Cross-sectional Anatomy	3
TOTAL		14

Year IV — spring

COURSE	TITLE	CREDIT HOURS
RAD 304C	Radiography Internship IV	6
RAD 370	Problem Solving in Radiography	3
RSC 287	Radiation: Protection and Biology	3
TOTAL		12

Total Credits to complete this degree requirement: 132 credit hours

Bachelor of Science Degree in Respiratory Therapy

The Bachelor of Science in Respiratory Therapy degree completion program provides graduates of entry into respiratory care professional practice degree programs with additional knowledge, skills, and attributes in leadership, management, education, research, and/or advanced clinical practice that will enable them to meet their current professional goals and prepare them for practice as advanced degree respiratory therapists."

Eligible candidates for the BS in Respiratory Therapy Degree Completion Program require the following:

- An AS degree in Respiratory Care from a regionally accredited institution
- Earned the Registered Respiratory Therapy (RRT) credential from the National Board for Respiratory Care (NBRC)

Applicants will receive the following transfer credit:

- 72 credits for the AS Degree *Must be from regionally accredited institution*
    - Please Note: some AS programs award less than 72 credits students from these will be evaluated by the admission team and the program faculty (the standard AS programs is 64-72 credits)
- 12 credits for the RRT Credential
- Transfer credits will be applied as a block of credits and the total maximum number possible is 84 credits.

The program of study is 36 credits **all online**. The program can be completed full time in 12 months or part time over 24 months. To earn the BS completion degree, students must complete a total of at least 120 credits with transfer credit and the MCPHS coursework.

The MCPHS BS in Respiratory Therapy Degree Completion Program requires the student to complete a total of 36 credits:

- 27 credits Core curriculum required courses
- 3 credits Respiratory/Healthcare Electives core subjects can choose between courses from health sciences, public health, research and healthcare administration
- 6 credits MCPHS focus – These are requirements from the core curriculum LIB 220 and LIB 512.

The curriculum outlined below provides for a part-time curriculum; however, the program is designed for either part-time or full-time. Students may begin the program in the Fall, Spring or Summer. Part-time students may complete 6 credits, or two courses, each semester for 6 semesters or 2 years. All RES courses are to be taken in a sequenced order as defined by the program.

Curriculum: Bachelor of Science Degree in Respiratory Therapy

Respiratory Care Required Classes (cannot be transferred in)

COURSE	TITLE	CREDIT HOURS
RES 405	Introduction to BSRT Studies	3
RES 410	Leadership in Healthcare	3
RES 420	Protocols and Guidelines in Respiratory Care	3
RES 430	Introduction to Healthcare Research	3
RES 440	Advanced Cardiopulmonary Physiology for Respiratory Care	3
RES 450	Teaching in the Healthcare Setting	3
RES 470	Principles of Care Coordination in Respiratory Disease Management	3
RES 480	Evidence-Based Care in RC Practice	3
RES 490	Respiratory Care Capstone	3

Required MCPHS Classes (can be transferred in)

COURSE	TITLE	CREDIT HOURS
LIB 220	Intro to Interpersonal Communication for Healthcare Professionals	3
LIB 512	Healthcare Ethics	3

Elective (only one is required) 3 credits

COURSE	TITLE	CREDIT HOURS
RES 460	Essentials of ECLS	3
RES 495	Respiratory Care Internship	3
MCPHS elective (any course offered at MCPHS approved by the Respiratory Therapy program director)		3

Total Credits to complete this degree requirement: 36 credit hours

The MCPHS Degree Completion Program, CoARC # 500037, Bachelor of Science in Respiratory Therapy degree awarded, and campus location holds Provisional Accreditation from the Commission on Accreditation for Respiratory Care.

This status signifies that a program with an Approval of Intent has demonstrated sufficient compliance with the Standards (through submission of an acceptable Provisional Accreditation Self Study Report (PSSR) and any other documentation required by the CoARC, as well as satisfactory completion of an initial on-site visit.

CoARC accredits respiratory therapy education programs in the United States. To achieve this end, it utilizes an 'outcomes based' process. Programmatic outcomes are performance indicators that reflect the extent to which the educational goals of the program are achieved and by which program effectiveness is documented. Commission on Accreditation for Respiratory Care | 264 Precision Boulevard, Telford, TN 37690 | 817.283.2835 | www.coarc.com.

Bachelor of Science in Health Sciences/BS Medical Imaging and Therapeutics Dual Degree

The Bachelor of Science in Health Sciences (BSHS)/BSMIT (Postbaccalaureate) Dual Degree program provides a pathway to medical imaging and therapeutics for students not yet holding a BS degree but interested in joining a SMIT program. The program will allow students to earn a BSHS while at the same time completing some SMIT courses that can then be used in the SMIT (Fast Track) program. The only students who will be considered for this dual degree option are those who can fully complete prerequisites prior to matriculation.

Health Sciences students who are interested in the Dual Degree should contact transfers@mcphs.edu

Curriculum: Dual Degree Bachelor of Science in Health Sciences/Bachelor of Science in Medical Imagining and Therapeutics

Year I – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		14

Year I – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HSC 110	Health Sciences Seminar I	1
LIB 112	Writing in the Humanities	3
	Math Requirement (100-level)	3
	Social Sciences Elective (SSC)	3
TOTAL		14

Year II – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
HSC 220	Personal Health and Wellness	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
TOTAL		16

Year II – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Lab	1
HSC 210	Health Sciences Seminar II	1
HSC.308	Healthcare Leadership and Teamwork	3
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 410	Health Research Methods	3
	Humanities Elective (HUM)	3
TOTAL		14

Year III – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Lab	1
HSC 301	Health Promotion	3
HSC 305	Navigating Healthcare Systems	3
HSC 308	Healthcare Leadership and Teamwork	3
	General Elective (MRI Candidates take PHY 275 Physics for Med. Image)	3-4
TOTAL		16-17

Year III – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
HSC 311	Health Sciences Seminar III	1
HSC 340	Health and Safety	3
HSC 401	Public Health and Policy	3
	Behavioral Science Elective (BEH)	3
	General Elective (Other SMIT programs take PHY 181 General Physics)	3-4
	Health Sciences Elective (HSC)	3
TOTAL		16-17

Students accepted into the BSHS/BSMIT Dual Degree will continue in their respective medical imaging and therapeutics program following Year III spring.

Master of Science in Radiologic and Imaging Sciences Program

As the field of radiologic and imaging sciences continues to expand, graduate degrees are becoming more common and advantageous to technologists who want to pursue roles in research, leadership, or education. A master's degree in radiologic and imaging sciences gives technologists a competitive edge and deeper knowledge base within their field, and ultimately opens up opportunities for career growth. The program is open to individuals already in the field of DMS, MRI, NMT, RAD, or RTT.

For admission to the program, an applicant must have:

- Graduated with a bachelor's degree. Earned a minimum cumulative GPA of 2.5 (on a 4.0 scale) in the medical imaging or therapeutics program courses.
- Successfully completed or eligible for one of the national certification/registry examinations in a medical imaging or therapeutics modality (ARRT, NMTCB, RDMS, CAMRT).
- A license to practice in a radiological or imaging science field or eligibility for licensure in at least one jurisdiction in the United States or Canada.
- A minimum TOEFL score of 79 or a score of 6.5 on the IELTS (required of all candidates for whom English is not the native language.)

Curriculum: Master of Science in Radiologic and Imaging Sciences

COURSE	TITLE	CREDIT HOURS
RIS 701	Leadership and Communication in Radiologic Sciences	3
RIS 705	Special Considerations in Patient Care	3
RIS 710	Professional Practice Trends in Imaging and Radiologic Sciences	3
RIS 720	Imaging Preclinical and Clinical Research	3
RIS 730	Imaging Applied Research Methodology I	3
RIS 731	Imaging Applied Research Methodology II	3
RIS 750	Teaching & Learning in Radiologic & Imaging Sciences	3
RIS 800	Radiologic and Imaging Practicum	3
HCM 711	Applied Management for Health & Life Sciences.	3
HCM 740	Managing Teams, Perform., & Human Cap	3
TOTAL		30

Total Credits to complete this degree requirement: 30 credit hours

Master of Science in Radiologic and Imaging Sciences Bridge Program

The AS to MS in Radiologic and Imaging Sciences Bridge Program is designed for technologists who want to quickly advance their career within the field. In this program, students build on your associate degree to advance to the master's level without needing to first earn a bachelor's degree. This program is the **first in the nation** to offer a direct pathway from the associate degree to a master's degree specifically related to radiologic and imaging sciences.

In this online, 52-credit program, you can choose between two 9-credit tracks—one for Teaching & Learning Leadership and one for Administrative Leadership. Designed to meet your needs, the extremely flexible curriculum allows you to take courses in any order after completion of your core courses. When you graduate, you will hold a master's degree in radiologic and imaging sciences and be able to advance into roles within research, leadership, or education.

Admissions:

- Graduated with an associate degree from one of the medical imaging or therapeutics programs (DMS, MRI, NMT, RAD, or RTT).
- Earned a minimum cumulative GPA of 2.5 (on a 4.0 scale) in the medical imaging or therapeutics program courses.
- Successfully completed one of the national certification/registry examinations in a medical imaging or therapeutics modality (ARRT, NMTCB, RDMS, CAMRT).
- A license to practice in a radiological or imaging science field or eligibility for licensure in at least one jurisdiction in the United States or Canada.
- A minimum TOEFL score of 79 or a score of 6.5 on the IELTS (required of all candidates for whom English is not the native language.)

Curriculum: Master of Science in Radiologic and Imaging Sciences Bridge

To be completed prior to starting MS portion of the program. *

COURSE	TITLE	CREDIT HOURS
HSC 320	Writing for Health Professionals	3
LIB 512	Healthcare Ethics	3
MAT 210	Statistics	3
RSC 330	Research in Radiologic Sciences	2
RSC 325	Pathophysiology	4
RSC 340	Success in Radiologic Sciences	1
RSC 410	Advanced Radiation Biology	4
TOTAL		20

Graduate Courses

Radiologic & Imaging Sciences Core

COURSE	TITLE	CREDIT HOURS
RIS 701	Leadership and Communication in Radiologic Sciences	3
RIS 705	Special Considerations in Patient Care	3
RIS 710	Professional Practice Trends in Imaging and Radiologic Sciences	3
RIS 720	Imaging Preclinical and Clinical Research	3
RIS 730	Imaging Applied Research Methodology I	3
RIS 731	Imaging Applied Research Methodology II	3
RIS 750	Teaching & Learning in Rad. & Imag. Sci.	3
RIS 800	Radiologic and Imaging Practicum	3
HCM 711	Applied Mgmt for Health & Life Sci.	3
HCM 740	Managing Teams, Perform., & Human Capital	3
TOTAL		30

Bridge Courses: 20 credits
MS Courses: 30 credits
Total Credits to complete this degree requirement: 50 credit hours

Advanced Certificate Programs in Medical Imaging

Four certificate programs for working technologists seeking advanced certification in the advanced imaging modalities are offered by the School of Medical Imaging and Therapeutics. The certificate programs provide both didactic and clinical training, and students, upon successful completion of the program, are eligible to sit for the advanced certification examinations administered by the American Registry of Radiologic Technologists (ARRT). Certificate programs are available in Computed Tomography (CT) and Magnetic Resonance Imaging (MRI), Mammography, and Nuclear Medicine Technology. The Nuclear Medicine Technology program is also available for students who hold a bachelor's degree in any field.

Eligibility for each certificate program is established in accordance with ARRT and/or NMTCB guidelines. Applicants must hold current ARRT/NMTCB certification in the appropriate discipline as well as current CPR certification. For Nuclear Medicine Technology, applicants may hold a bachelor's degree in any field in place of holding current ARRT/NMTCB certification.

Advanced Certificate in Computed Tomography (Online)

Prerequisites ARRT/NMTCB/ARDMS certification in Radiography, Nuclear Medicine Technology or Radiation Therapy, and current CPR certification

A minimum grade of C is required in *all* courses to progress and receive the certificate. Transfer credits are not accepted.

Curriculum: Advanced Certificate in Computed Tomography

Semester I

COURSE	TITLE	CREDIT HOURS
RSC 320	CT and Cross-Sectional Anatomy	3
RSC 425C	CT Clinical Internship	3
TOTAL		6

Semester II

COURSE	TITLE	CREDIT HOURS
RSC 315	CT Imaging-Board Review	3
TOTAL		3

Total credits to complete Computed Tomography Certificate requirements: 9 credit hours

Advanced Certificate in Magnetic Resonance Imaging (Online)

Prerequisites: ARRT/NMTCB/ARDMS certification in Radiography, Nuclear Medicine Technology, Radiation Therapy, or Sonography is required. A grade of C+ or better in a cross-sectional anatomy course also is required. A minimum grade of C+ is required in all *courses to progress and receive the certificate.*

Curriculum: Advanced Certificate in Magnetic Resonance Imaging

Summer Semester

COURSE	TITLE	CREDIT HOURS
MRI 401O.O	Physical Principles of MRI	3
MRI 405O.O	MRI Safety and Applications	3
TOTAL		6

** RSC 310 is offered during the fall semester for students who have not previously completed a 3 credit cross-sectional anatomy course.*

Fall Semester

COURSE	TITLE	CREDIT HOURS
MRI 410O.O	MRI Procedures	3
RSC 310O.O	Cross-sectional Anatomy	3
MRI 435C	Advanced Certificate Clinical Internship (Optional)	8
TOTAL		6 or 15 with clinical rotation

Spring Semester

COURSE	TITLE	CREDIT HOURS
MRI 415O.O	MRI Image Production and Quality	3
MRI 430O.O	MRI Pathology	3
TOTAL		6

*** MRI clinical rotations at affiliated hospitals will be offered to students who wish to enroll in the fall semester.*

Total credits to complete MRI Advanced Certificate requirements: 18 credit hours

Advanced Certificate in Nuclear Medicine Technology (Online)

Over the course of 16 consecutive months, students follow a synchronous distance/online class schedule, which means that you will log and call in during specific class times, offering you the flexibility of an online education coupled with the community-building experience associated with classroom learning. Students are required to meet in person approximately twice per semester at predetermined locations (usually at the Worcester campus) for labs and/or other class activities. Students participate in clinical experiences at sites predetermined by your specific location, where you'll work alongside industry experts and gain firsthand knowledge of what it's like to be a nuclear medicine technologist. And you'll graduate ready to positively impact patients' lives and sit for the Nuclear Medicine Technology Certification Board, as well as the American Registry of Radiologic Technologists.

Candidates must meet ONE of the following two options:

- Prior Bachelor's Degree in any field OR
- ARRT/ARDMS certification in Radiography, Radiation Therapy, or Sonography

In addition to the requirements already mentioned for students in the advanced certificate program, one must have successful completion of 2.5 GPA and the following courses with a grade of C+ or better is required as prerequisites.

BIO 110/210 Anatomy and Physiology I and II (with lab)

LIB 111 Academic Writing and Research

General Physics (algebra or calculus based) OR Radiation Physics

College Algebra or higher

CHE 110 Basic Chemistry I

CHE 110L Basic Chemistry I Laboratory

Requirements

In addition to the requirements already mentioned for students in the fast-track program, students must successfully complete the following courses with a grade of C+ or better and a minimum GPA of 2.5.

Curriculum: Advanced Certificate in Nuclear Medicine Technology

Fall Semester

COURSE	TITLE	CREDIT HOURS
NMT 260	Fundamentals of Nuclear Medicine	3
NMT 305	Cardiovascular Imaging	3
NMT 310	Radiation Sciences & Regulations	3
RSC 110*	Medical Terminology for Radiologic Sciences	1
RSC 250	Elements of Clinical Care	2
TOTAL		12

Spring Semester

COURSE	TITLE	CREDIT HOURS
NMT 320	Nuclear Medicine Imaging	6
NMT 330C	Nuclear Medicine Internship I	4
NMT 340	Molecular Imaging & Theranostics	3
TOTAL		13

Summer Semester

COURSE	TITLE	CREDIT HOURS
NMT 331C	Nuclear Medicine Internship II	7
NMT 350	Radiopharmacy	3
NMT 390	Problem Solving in Nuclear Medicine I	2
TOTAL		12

Fall Semester

COURSE	TITLE	CREDIT HOURS
NMT 332C	Nuclear Medicine Internship III	8
NMT 391	Problem-Solving in Nuclear Medicine II	2
RSC 320	CT & Cross-Sectional Anatomy	3
TOTAL		13

Total credits to complete Nuclear Medicine Advanced Certificate requirements: 50 credit hours

Medical Terminology may be transferred from another institution if previously taken prior to entering MCPHS.

NOTE: All Nuclear Medicine Technology students must fulfill requirements for CPR certification and to pass medical terminology proficiency prior to NMT Internship (NMT 330C).

Advanced Certificate in Mammography (Online)

Prerequisites: State license and ARRT certification in Radiography.
A minimum grade of C is required in *all* courses to progress and receive the certificate. Transfer credits are not accepted.

Curriculum: Advanced Certificate in Mammography

Fall Semester

COURSE	TITLE	CREDIT HOURS
RSC 450	Mammography Board Review Course	3
RSC 452	Mammography Imaging Procedures & Patient Care	3
TOTAL		6

Spring Semester

COURSE	TITLE	CREDIT HOURS
RSC 456C	Clinical Internship	3
TOTAL		3

Total credits to complete Mammography Advanced Certificate requirements: 9 credit hours

MCPHS–Boston
School of Nursing

Tammy Gravel, EdD, MS, RN, Dean of the School of Nursing and Chief Nurse Administrator and Associate Professor

Deborah McManus, PhD, MSN, RN, Associate Professor, Program Director, and Associate Dean

Erin Murphy-Swenson, DNP, MS, CNM, Associate Professor and Associate Dean of Clinical Education & Experiential Learning

Anne Marie Staula, MSN, RN, Assistant Professor, Boston Lab Manager

Caliope Archon, BSN, Faculty Associate, NCLEX Success Coach

Associate Professors Eichhorn, Galindo, Gravel, Lee, Mataoui, McManus, Murphy-Swenson; Assistant Professors McGowan, Malinn, Bozkurt, Gagnon, Doczi; Faculty Associate Archon

Degree Programs

Bachelor of Science in Nursing (Accelerated)
Bachelor of Science in Nursing (Postbaccalaureate)
Bachelor of Science in Health Sciences/BSN (Postbaccalaureate) Dual Degree

School of Nursing Academic Policies

Academic Progression
A minimum grade of C+ (2.3) is required in selected prerequisite non-Nursing courses (Anatomy and Physiology, Basic Chemistry, Chemistry of Nutrition, Microbiology, Math for Nurses, Statistics, and Human Growth and Development) and all professional Nursing courses. Successful completion of both the theory and the clinical laboratory / practicum in a clinical Nursing course is required to pass the course. A minimum professional grade point average (GPA) of 2.7 is required.

All Boston BSN students must achieve a minimum passing grade of 78 (C+) in each professional nursing (NUR) course and in order to progress. A professional GPA of 2.7 is then required at the end of each semester in order to progress in the nursing major and to fulfill University requirements for graduation.

Students who do not achieve the required professional GPA needed to fulfill School of Nursing graduation requirements must complete a select remediation course(s) to reach the required professional GPA. Official University graduation and approval to write for the NCLEX will not occur until professional GPA and all graduation requirements have been met.

Any Nursing course that is graded below a C+ may be repeated only once. A second grade below C+ in the repeated course will result in dismissal from the Nursing program. Throughout the Nursing program, a student may repeat no more than two separate Nursing courses. Three grades below C+ in any combination of Nursing courses will result in dismissal from the Nursing program.

All courses must be taken sequentially.

Professional courses (designated NUR) may not be taken pass/fail.

Test of Essential Academic Skills (TEAS)

- Students admitted or transferring to the BSN program must successfully complete the ATI TEAS test prior to the transition into the professional nursing curriculum.
- The ATI TEAS test must be taken before the end of the Summer Semester for students entering the Professional BSN Curriculum in the Spring Semester. ATI TEAS test results must be reported to the School of Nursing and will be documented in the student's program of study.
- Students must achieve a score of 65.3 or better within three attempts.
- Students who do not meet the benchmark score of 65.3 or better within three attempts will be dismissed from the BSN program.

Progression and Retention Policies
Students must complete the requirements for the BSN degree within five (5) years (32-month track) or three (3) years (16-month track). If this time limit from the date of admission into the major has elapsed and the student has not completed degree requirements, the student must request an extension in writing and meet with the School Dean, who may approve or deny the extension request. The School Dean's decision is final and not subject to further appeal.

CPR Certification
All students must complete CPR training prior to beginning clinical experiences in NUR 204: Health and Wellness I. Students must be certified in Basic Cardiac Life Support (BCLS) at the Healthcare Provider Level by the American Heart Association (AHA). Students must provide a copy of the AHA Healthcare Provider Level card indicating active certification. (AHA requires recertification every two years.) It is recommended that the student verify the course in advance to ensure that the course is appropriate.

Transportation
Reliable transportation to, from, and during all clinical and field experiences is the responsibility of the student. A number of clinical rotations in the required curriculum may be scheduled at some distance from the campus. This is necessary to provide a range of learning experiences and to ensure availability and quality of clinical rotation sites. The University will make every effort to accommodate requests regarding assignments to experiential education sites, but students generally can expect to be assigned to clinical sites some distance from the campus for at least a portion of their required clinical rotations. In such instances, students are responsible for transportation and other related travel expenses.

Licensure
Students who successfully complete the program will be eligible to sit for the National Council Licensure Examination for Registered Nurses (NCLEX-RN).

Employment
Due to the rigorous nature of the Nursing program, the demands placed on students are extremely high, particularly with respect to their clinical schedule and course requirements. It is for this reason that students are strongly discouraged from engaging in outside, non-program-related employment throughout the program of study.

School of Nursing Professional and Technical Standards

A prelicensure candidate for the Bachelor of Science in Nursing degree must have abilities and skills in four areas: communication, observation, motor function and endurance, and behavioral maturity.

Communication
- Must be able to communicate effectively with patients, families, and members of the healthcare team through oral, written, and interpersonal means;
- Must be able to obtain information, describe patient situations, and perceive both oral and nonverbal communication (including ability to understand normal speech without seeing the speaker's face);
- Must be able to speak, comprehend, read, and write in English at a level that meets the need for accurate, clear, and effective communication. Examples include but are not limited to giving clear oral reports, reading watches or clocks with second hands, reading graphs, reading and understanding documents printed in English, writing legibly in English, and discriminating subtle differences in medical terminology.

Observation
- Must be able to observe a patient accurately. Examples include but are not limited to listening to heart and breath sounds; visualizing the appearance of a surgical wound; detecting bleeding, unresponsiveness, or other changes in patient status; detecting the presence of a foul odor; and palpating an abdomen;
- Must be able to detect and respond to emergency situations, including audible alarms (e.g., monitors, call bells, fire alarms)

Motor Function and Endurance
- Must have sufficient strength and mobility to work effectively and safely with patients and carry out nursing care activities. Examples include but are not limited to lifting and positioning patients (lifting up to 50 pounds, carrying up to 25 pounds), transferring patients in and out of bed, performing cardiopulmonary resuscitation (AHA Healthcare Provider Level certification), preparing and administering medications (oral, injection, and intravenous, including hanging IV bags at shoulder height), reading and emptying body fluid collection devices below bed level, applying pressure to stop bleeding, clearing/opening an obstructed airway, and providing daily hygiene care;
- Must be able to complete assigned periods of clinical practice, including up to 12-hour shifts, including days, evenings, nights, and weekends;
- Must be able to respond at a speed and in a manner sufficient to carry out patient assignments within the allotted time
- Must be able to tolerate physically taxing workloads.

- The need for assistive devices may compromise the safety of patients and healthcare professionals. Therefore, their use is not permitted to ensure optimal safety standards in the lab and clinical setting. Assistive devices include (but are not limited to): Crutches, canes, braces and walkers

Behavior
- Must possess mental and emotional health required for total utilization of intellectual abilities;
- Must be able to tolerate physically taxing workloads;
- Must be able to respond and function effectively during stressful situations;
- Must be capable of adapting to rapidly changing environments and of responding with flexibility in uncertain situations;
- Must be able to interact appropriately with others (i.e., patients, families, members of healthcare team) in various healthcare contexts;
- Must meet the ethical standards of the profession

Policy for Content Validation after Non-progression or Leave of Absence
A student who fails or withdraws from an undergraduate Nursing professional course, or who withdraws from a Nursing program via leave of absence, must validate previous knowledge and skills held prior to program exit before they may reenroll in Nursing clinical professional courses. Reenrollment is subject to clinical placement availability. (NOTE: Students returning from a leave of absence must confirm their intent to return as specified in the Return from Leave of Absence section. There is no guarantee that space will be available at the student's desired return date. It may take up to two years for reentry due to lack of clinical placement availability.)

The validation will occur via the student's demonstration of knowledge and skills—that is, meeting established program clinical competencies—in a selected clinical facility or simulation laboratory. The student must notify the Dean of the desired date of return a minimum of 30 days prior to the anticipated return date to make arrangements for preparing for and performing validation testing. Program faculty will provide guidance as to what content and skills (competencies) the student needs to review prior to the testing, but it is student's responsibility to prepare for the validation testing. The student must pass the validation testing as per the outcome measures determined by the faculty. Failure to meet the required outcome(s) will result in dismissal from the Nursing program and/or the need to repeat identified courses.

A student attempting to return from a leave of absence also must have been cleared to return to classes by their Academic Dean or the Student Affairs office at their campus (if a medical leave of absence) prior to performing validation testing. The Student Affairs office and Nursing faculty will coordinate communication regarding student clearance for leave of absence return and subsequent eligibility to schedule validation testing.

Bachelor of Science in Nursing (Accelerated) – 32-month Curriculum

Responding to the growing demand for nurses nationally, MCPHS offers an innovative accelerated 32-month nursing professional program leading to the Bachelor of Science in Nursing (BSN) degree. Reflecting the American Association of Colleges of Nursing (AACN), The Essentials: Core Competencies for Professional Nursing Education (2021) E and the National Council of State Boards of Nursing Detailed Test Plan for the National Council of State Boards of Nursing Licensure Examination for Registered Nurses (NCLEX-RN), the program prepares graduates to be able to respond to the complex challenges of a rapidly changing healthcare environment. The curriculum builds upon a strong foundation in the liberal arts and sciences, and guides the student toward gaining the knowledge, skills, competencies, and values required to practice as a professional nurse. This program has full approval from the Massachusetts Board of Registration in Nursing (MBORN) and is accredited by the Commission on Collegiate Nursing Education (2021-2031)

The Bachelor of Science in Nursing is offered as a full-time baccalaureate degree program, in a 32-month accelerated, year-round format. The first two years of the program consist of 15-week fall semesters and 15-week spring semesters, and a 12-week summer session in Year II; the third and final year consists of a 15-week fall semester and a 15-week spring semester, concluding in May of the third year. The program requires 120 credit hours of credit for completion, which includes the core curriculum requirements common to all MCPHS undergraduate and first professional degree programs, additional professional support courses in the natural and social sciences, and courses in the Nursing major. Upon completion of the program, students will be eligible to sit for the NCLEX-RN.

To meet the residency requirement for the Bachelor of Science in Nursing, students must complete at least 61 credit hours at MCPHS.

NOTE: An exception to the policy that no course examinations or graded assignments worth more than 15% of final course grade may be scheduled during the week before final examinations exists for Nursing courses. Major graded assignments or exams may be administered the week before the final week of the course. A reading day (scheduled

only on a weekday, no Saturday or Sunday) will be provided between the end of scheduled classes / clinical rotations and the administration of any final exams.

Curriculum: Bachelor of Science in Nursing (Accelerated)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II lab	1
NUR 250O	Chemistry of Nutrition	3
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
TOTAL		13

Year I — summer

COURSE	TITLE	CREDIT HOURS
BEH 352*	Human Development through the Life Cycle	3
MAT 261	Statistics	3
	Distribution Electives	6
TOTAL		12

** BEH 352 fulfills the behavioral science core curriculum requirement.*

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Lab	1
LIB 220	Interpersonal Communication in the Health Professions	3
LIB 512	Healthcare Ethics	3
MAT 142	Math for Nurses	3
HUM	Humanities Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
NUR 201	Professional Practice I	3
NUR 204	Health and Wellness I	6
NUR 245	Healthcare Participant I	4
NUR 226	Pathophsylolgy and Pharmacology-I	3
TOTAL		16

Year II - summer

COURSE	TITLE	CREDIT HOURS
NUR 304	Health and Wellness II	7
NUR 326	Pathophsylolgy and Pharmacology-II	3
NUR 346	Healthcare Participant II	3
NUR 347	Professional Practice II	3
TOTAL		16

Year III - fall

COURSE	TITLE	CREDIT HOURS
NUR 401	Professional Practice III	3
NUR 404	Health and Wellness III	6
NUR 422	Healthcare Participant III	5
NUR 435	Preparation of Professional Licensure I	2
TOTAL		16

Year III - spring

COURSE	TITLE	CREDIT HOURS
NUR 525	Professional Practice IV	4
NUR 504	Health and Wellness IV	7
NUR 522	Healthcare Participant IV	4
NUR 535	Preparation for Professional Licensure-II	1
TOTAL		16

Total credits to complete degree requirements: 120 credit hours

Bachelor of Science Degree in Nursing (Postbaccalaureate) – 16-month Curriculum

The 16-month accelerated BSN program implemented at the MCPHS–Boston, Worcester and Manchester, NH campuses is designed specifically for students with a bachelor's degree in another field. The curriculum is identical to that currently offered at the Worcester and Manchester campuses. Students attend classes in Boston. Program instruction is conducted in state-of-the-art facilities at the MCPHS-Boston campus with clinical experiences in selected hospital and community agencies locally and regionally.

This 16-month program of study provides an accelerated option for students ready for a challenging transition to a career as a Bachelor of Science in Nursing registered nurse. Building on previous learning and experience gained from the student's first bachelor's degree, the 16-month program of study mirrors the Boston-based program's professional major, guiding students toward gaining the knowledge, skills, competencies, and values required to practice as a registered nurse in the 21st century.

The Postbaccalaureate BSN is offered in a 16-month year-round format with a January or September admission. The September-admission program consists of a 15-week fall semester, a 15-week spring semester, a 12-week summer session, and a 15-week fall semester, concluding in December of the second year. The January-admission program consists of a 15-week spring semester, a 12-week summer session, a 15-week fall semester and a 15-week spring semester, concluding in May of the second year.

To be eligible for the program, the student must possess a prior Bachelor of Science or Bachelor of Arts degree and have completed the following prerequisite coursework with a minimum grade of C within the past 10 years: chemistry (with lab), anatomy and physiology (with lab), microbiology (with lab), statistics, nutrition and human development. Students with a baccalaureate degree will not be required to meet the MCPHS general education core requirements. The program requires a total of 120 credit hours of credit for completion. Upon completion of the program, students will be eligible to sit for the National Council of State Boards of Nursing Licensure Examination for Registered Nurses (NCLEX-RN).

NOTE: An exception to the policy that no course examinations or graded assignments worth more than 15% of final course grade may be scheduled during the week before final examinations exists for Nursing courses. Major graded assignments or exams may be administered the week before the final week of the course. A reading day (scheduled only on a weekday, no Saturday or Sunday) will be provided between the end of scheduled classes / clinical rotations

and the administration of any final exams.

Curriculum: Bachelor of Science in Nursing (Postbaccalaureate)

Year I — semester I

COURSE	TITLE	CREDIT HOURS
NUR 201	Professional Practice I	3
NUR 204	Health and Wellness I	6
NUR 245	Healthcare Participant I	4
NUR 226	Pathophsylolgy and Pharmacology-I	3
TOTAL		16

Year I - semester II

COURSE	TITLE	CREDIT HOURS
NUR 304	Health and Wellness II	7
NUR 326	Pathophsylolgy and Pharmacology-II	3
NUR 346	Healthcare Participant II	3
NUR 347	Professional Practice II	3
TOTAL		16

Year I - semester III

COURSE	TITLE	CREDIT HOURS
NUR 401	Professional Practice III	3
NUR 404	Health and Wellness III	6
NUR 422	Healthcare Participant III	5
NUR 435	Preparation of Professional Licensure I	2
TOTAL		16

Year II — semester I

COURSE	TITLE	CREDIT HOURS
NUR 525	Professional Practice IV	4
NUR 504	Health and Wellness I	7
NUR 522	Healthcare Participant IV	4
NUR 535	Preparation for Professional Licensure-II	1
TOTAL		16

Total preprofessional coursework: 56 credit hours*

Total professional major: 64 credit hours

Total institutional credits to complete **BSN requirements: 120 credit hours**

** A maximum of 56 credit hours of credit for the prior Bachelor of Science or Bachelor of Arts degree from a regionally accredited college or university will be awarded upon matriculation in fulfillment of MCPHS core curriculum requirements.*

Bachelor of Science in Health Sciences/BSN (Postbaccalaureate) Dual Degree

The Bachelor of Science in Health Sciences (BSHS)/BSN (Postbaccalaureate) Dual Degree program provides a pathway to nursing for students not yet holding a BS degree but interested in joining the BSN (Postbaccalaureate) program. The program will allow students to earn a BSHS while at the same time completing some BSN courses that can then be used in the BSN (Postbaccalaureate) program. The only students who will be considered for this dual degree option are those who can fully complete prerequisites prior to matriculation.

A cumulative 3.0 grade point average (GPA) in the 83 credit hours of preprofessional and health sciences courses is preferred prior to admission to the BSN courses. A TEAS score of 65.3% in 3 or fewer attempts. A 2.7 GPA is required for progression and graduation in the BSN curriculum**.**

Health Sciences students who are interested in the Dual Degree should contact transfers@mcphs.edu.

Curriculum: Dual Degree Bachelor of Science in Health Sciences/Bachelor of Science in Nursing

Year I – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I	3
BIO 110L	Anatomy and Physiology I Lab	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		14

Year I – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II	3
BIO 210L	Anatomy and Physiology II Lab	1
HSC 110	Health Sciences Seminar I	1
LIB 112	Writing in the Humanities	3
MAT 141	Algebra and Trigonometry	3
	Social Sciences Elective (SSC)	3
TOTAL		14

Year II – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
CHE 110	Basic Chemistry I	3
CHE 110L	Basic Chemistry I Lab	1
HSC 220	Personal Health and Wellness	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
TOTAL		16

Year II – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
CHE 210	Basic Chemistry II	3
CHE 210L	Basic Chemistry II Lab	1
HSC 210	Health Sciences Seminar II	1
HSC.308	Healthcare Leadership and Teamwork	3
HSC 360	Cultural Engagement and Health Outcomes	3
HSC 410	Health Research Methods	3
TOTAL		14

Year III – School of Arts & Sciences – fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Lab	1
HSC 301	Health Promotion	3
HSC 305	Navigating Healthcare Systems	3
	Social Science Elective (SSC)	3
	Humanities Elective (HUM)	3
TOTAL		16

Year III – School of Arts & Sciences – spring

COURSE	TITLE	CREDIT HOURS
HSC 311	Health Sciences Seminar III	1
HSC 340	Health and Safety	3
HSC 401	Public Health and Policy	3
	Behavioral Science Elective (BEH)	3
	General Elective	3
	Health Sciences Elective (HSC)	3
TOTAL		16

Nursing Professional Courses

COURSE	TITLE	CREDIT HOURS
NUR 201	Professional Practice I	3
NUR 204	Health and Wellness I	6
NUR 245	Healthcare Participant I	4
NUR 226	Pathophsylolgy and Pharmacology-I	3
NUR 304	Health and Wellness II	7
NUR 326	Pathophsylolgy and Pharmacology-II	3
NUR 346	Healthcare Participant II	3
NUR 347	Professional Practice II	3
NUR 401	Professional Practice III	3
NUR 404	Health and Wellness III	6
NUR 422	Healthcare Participant III	5
NUR 435	Preparation of Professional Licensure I	2
NUR 525	Professional Practice IV	4
NUR 504	Health and Wellness IV	7
NUR 522	Healthcare Participant IV	4
NUR 535	Preparation for Professional Licensure-II	1
TOTAL		64

Total credits to complete BSHS/BSN dual degree: 156 credit hours

MCPHS–Boston
School of Physician Assistant Studies

Lisa Taglierir, DScPAS, MS, PA-C, Interim Program Director and Associate Professor, School of Physician Assistant Studies – Boston

John Kelly, MD, Medical Director

Professor Moktar; Associate Professors Cooper, Graeff, Hurwitz, Jones, Orrahood, Robinson, Vajravelu; Assistant Professors Baritz, Chiavegato, McDonald, Riley, Webb

Degree Program
Master of Physician Assistant Studies

Physician Assistant Studies (Boston)
See the MCPHS–Manchester and MCPHS–Worcester sections for information on the Physician Assistant Studies (Accelerated) program.

The MCPHS Boston Physician Assistant (PA) Studies program is dedicated to the development of clinically competent physician assistants who are thoroughly prepared to deliver quality patient care in various settings within the healthcare delivery system. Upon successful completion of the degree requirements, the Master of Physician Assistant Studies (MPAS) degree is awarded. The program is accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), and graduates are eligible to sit for the Physician Assistant National Certifying Examination (PANCE).

The MCPHS Boston PA program capitalizes on the extensive educational resources of the university, and medical centers throughout New England and across the U.S. to prepare PA students with the skills, and competencies needed to provide competent and compassionate medical care to patients in a variety of settings. Students acquire experience in health maintenance as well as the evaluation and treatment of a broad spectrum of medical problems through the program's clinical rotations which include surgery, psychiatry, obstetrics & gynecology, pediatrics, emergency medicine, family medicine, internal medicine, and two electives.

Students applying to the Boston Physician Assistant Studies MPAS Program must submit a formal application, including official transcripts and an essay, through the Central Application Service for Physician Assistants (CASPA) by September 1 of the year prior to admission. CASPA may be contacted at www.caspaonline.org. In addition, all MPAS applicants are required to complete a supplemental application, which is submitted via CASPA.

The Physician Assistant
Professional Responsibilities
According to the American Academy of Physician Assistants, PAs are licensed clinicians who practice medicine in every specialty and setting. Trusted, rigorously educated, and trained healthcare professionals, PAs are dedicated to expanding access to care and transforming health and wellness through patient-centered, team-based medical practice.

Professional Credentials
All graduates of the PA program are awarded the Master of Physician Assistant Studies (MPAS) degree which confers eligibility to sit for the Physician Assistant National Certifying Exam (PANCE). Graduates who pass the PANCE are eligible to apply for a PA license, DEA registration, and a controlled substance registration in all 50 states.

Master of Physician Assistant Studies Admission Prerequisites
Students who have earned a baccalaureate degree and have met the following prerequisite course requirements must apply through the Central Application Service for Physician Assistants (CASPA) (www.caspaonline.org). Students who meet the requirements may be invited to campus for an interview which must be successfully completed before an offer of admission is made.

The application must include a transcript demonstrating successful completion of the following course prerequisites:
- Two semesters of Biology (one lab required), minimum of 7 credit hour credits
- One semester of Microbiology with lab, 4 credit hour credits

- Three semesters of chemistry (one lab required), minimum of 10 credit hours. One of the three courses must be at the 200 level or higher (acceptable courses include Organic Chemistry, Analytical Chemistry, Physical Chemistry, or Biochemistry).
- Anatomy and Physiology I and II (6 credits). Acceptable substitutions include one semester's equivalent of Anatomy and one semester's equivalent of Physiology.
- One semester of Psychology, 3 credit hour credits
- One semester of Statistics or Biostatistics, 3 credit hour credits

A grade of C (2.0) or better is required for all the prerequisite courses. An overall cumulative, prerequisite and science GPA of 3.0 or better on a 4.0 scale is required.

All prerequisite courses must be completed within the past 10 years. Prerequisite courses must be completed at a regionally accredited institution of higher education in the United States. A minimum of 250 hands-on patient care hours are required.

Bachelor of Science in Premedical Health Studies—Physician Assistant Pathway students seeking admission into the Master of Physician Assistant Studies program should see Admission for MCPHS Students—Undergraduate Curriculum under School of Physician Assistant Studies Policies and Professional Requirements later in this section.

Please note: MCPHS gives admission preference to students currently in our Bachelor of Science in Premedical Health Studies -- Physician Assistant Pathway.

Health and Technical Standards

Technical Standards for Admission, Promotion, and Graduation

A candidate for the MCPHS Boston Physician Assistant Studies program must have, at a minimum, skills in five categories: observation, communication, motor, intellectual, and behavior/social. Reasonable accommodations will be considered on an individual basis by the Office of Student Access and Accommodation (OSAA), but a candidate must be able to perform in an independent manner. The following skills are required with or without accommodation:

Observation

Candidates must have sufficient capacity to observe in the lecture hall, the laboratory, the outpatient setting, and the patient's bedside. Sensory skills to perform a physical examination are required. Functional vision, hearing, and tactile sensation are required to properly observe a patient's condition and to perform procedures regularly required during a physical examination such as inspection, auscultation, and palpation.

Communication

Candidates must be able to communicate effectively in both academic and healthcare settings. Candidates must show evidence of effective written and verbal communication skills. Candidates must be able to communicate with patients in order to elicit information, describe changes in mood, activity, and posture, and perceive nonverbal communications. Candidates must be capable of completing thorough medical records and documents in a timely and appropriate manner.

Motor

Candidates must be able to participate in basic diagnostic and therapeutic maneuvers and procedures (e.g., palpation, auscultation). Candidates must have sufficient motor function to execute movements reasonably required to properly care for all patients. Candidates must be able to move freely about patient care environments and must be able to move between settings such as clinics, classroom buildings, and hospitals. In addition, physical stamina sufficient to complete the rigorous course of didactic and clinical study is required. Long periods of sitting, standing, or moving are required in classroom, laboratory, and clinical experiences.

Intellectual

Candidates must be able to measure, calculate, reason, analyze, and synthesize. Problem solving, one of the critical skills demanded of physician assistants, requires all of these intellectual abilities. Candidates must be able to read and understand medical literature. In order to complete the Physician Assistant Studies program, candidates must be able to demonstrate mastery of these skills and the ability to use them together in a timely fashion in medical problem-solving and patient care.

Behavioral and Social Attributes

Candidates must possess the emotional health and stability required for full utilization of their intellectual abilities. They must exercise good judgment and be able to promptly complete all academic and patient care responsibilities. The ability to develop mature, sensitive, and effective relationships with patients and other members of the healthcare team is essential. The ability to function in the face of uncertainties is essential. Flexibility, compassion, integrity, motivation, interpersonal skills, and concern for others are required. Candidates must be able to function effectively under stress.

They must be able to accept constructive criticism and handle difficult interpersonal relationships during training.

In addition to the costs of the MPAS–Boston program delineated in the Tuition, Room and Board, Fees section of this catalog, PA students can expect to spend approximately $1,000 on medical equipment and approximately $1,500 for books during the program.

Students in the MPAS program will need to complete a Criminal Offender Record Information (CORI) check prior to starting rotations. Positive CORI checks may impede or preclude a student's progression in the program and result in a student being ineligible for placement at a clinical rotation and/or for state licensure as a physician assistant. Students are responsible for the cost of all CORI checks and for knowledge of the licensure requirements of the state(s) in which they intend to seek licensure.

Clinical Rotations
Clinical rotations may be scheduled throughout the United States. This geographic variability is necessary to provide a breadth of learning experiences and to ensure availability and quality of clinical rotation sites. Students should expect to be assigned to clinical sites outside of Boston for at least a portion of their required clinical rotations. In such instances, students are responsible for transportation, food, parking, housing, and other related incidentals for all clinical rotations. Students are required to have a 2.85 professional GPA to enter into clinical rotations.

School of Physician Assistant Studies Policies and Professional Requirements

Basic and Advanced Life Support
All students in the Physician Assistant program must present proof of successful completion of Basic Life Support (BLS) for Healthcare Providers and Advanced Cardiac Life Support courses (ACLS) prior to entry into the clinical year and must maintain this certification throughout the remainder of the program.

Employment Outside of the University
The Physician Assistant curriculum is rigorous and requires many hours of study outside the classroom. Moreover, clinical rotations often require students to be present on nights, weekends, and holidays. Therefore, employment while in PA school is strongly discouraged.

Transfer of Credit
The MCPHS PA Studies program does not accept transfer credit for any PAS courses during the 30-month professional PA program.

Advanced Placement
The MCPHS Physician Assistant Studies program does not award advanced placement in its professional PA curriculum.

Performance in the Master of Physician Assistant Studies Program
All PAS-designated courses (500 level and above) count toward the professional grade point average (GPA). The following are requirements for remaining in good academic standing:

- To progress within both the didactic and clinical phases of the PA program, students must achieve a final course grade of C (2.0) or better on a 4.0 scale. When a student obtains one course grade below C in a given semester, the student must remediate or repeat the course and progression through the program may be delayed.
- Students who earn two or more course grades below C in a given semester are subject to dismissal.
- To remain in good standing, a cumulative professional GPA of 2.85 on a 4.0 scale must be maintained throughout the entire length of the program. A professional GPA below 2.85 may result in non-progression status, may necessitate retaking courses, or dismissal from the PA program.
- Successful completion of the PA summative examinations, (both written and practical) administered near the end of the final year of the program, is mandatory before graduation. Students who do not pass either of the summative examinations on the first administration will be offered one retake of the exam which must occur between 14 and 28 days following the first administration. Failure to pass the summative examination on the second attempt may result in delayed graduation and/or dismissal from the program.

In order to receive the Master of Physician Assistant Studies (MPAS) degree, students must have earned a cumulative professional GPA of 2.85 or better on a 4.0 scale. They must have successfully completed all required courses and clinical rotations along with any associated requirements and successfully completed all required competencies including summative examinations and procedures logging.

Admission for MCPHS Students—Undergraduate Curriculum

For MCPHS undergraduate students seeking admission into the Boston MPAS program, the prerequisite requirements for application to the PA program may be met through matriculation in the Bachelor of Science in Premedical Health Studies -- Physician Assistant Pathway. Students in that accelerated program must apply to the PA program through the Central Application Service for Physician Assistants (CASPA) prior to the fall semester of the third year of their undergraduate curriculum. The verified CASPA application deadline is September 1. All first-year and second-year Bachelor of Science in Premedical Health Studies courses (including any required supplemental courses and/or seminars such as PAS 402 and 403 Physician Assistant Preparation courses) must be completed successfully prior to applying to the Physician Assistant program. Outstanding third-year courses must also be completed successfully prior to admission into the MPAS program. Students must maintain a science, pre-requisite and cumulative GPA of 3.0 during the 3rd year of the undergraduate program in order to matriculate into the MPAS program. These students enter the professional phase of the program at the beginning of the fall semester of their fourth year and earn their bachelor's degree at the end of the first professional year (3+3). Students must pass the online PAS 404 Pre-PA Pathway Seminar course during the summer semester prior to the fall semester in the MPAS in order to matriculate into the program.

Students in the Premedical Health Studies-Physician Assistant Pathway have two additional prerequisite course requirements including Genetics and Pharmacology for Allied Health Professionals. A grade of C (2.0) or better is required for all prerequisite courses and an overall cumulative, prerequisite and science GPA of 3.0 (on a 4.0 scale) is required to be considered for admission. Also required are 250 hands-on patient contact hours and completion of a successful interview. Please note that meeting these minimal requirements does not guarantee admission to the PA program.

Master of Physician Assistant Studies (Boston)

The Master of Physician Assistant Studies (MPAS) program involves an intensive 30-month course of study of clinical medicine and in-depth exposure to people of all ages in various rotation settings. All courses within the MPAS program must be completed at MCPHS. The MPAS program does not award advanced placement or transfer credit for professional courses.

Curriculum: Master of Physician Assistant Studies (Boston)

Year I — fall

COURSE	TITLE	CREDIT HOURS
PAS 514	Principles of Professional Practice	2
PAS 515	Genetics	1
PAS 516	Introduction to Psychiatry	2
PAS 517	Human Physiology and Pathophysiology I	3
PAS 518	Clinical Pharmacology I	3
PAS 533	Evidence-Based Medicine	2
PAS 534	Introduction to Public Health	2
TOTAL		15

Competencies during the fall semester: library modules and medical terminology

Year I — spring

COURSE	TITLE	CREDIT HOURS
PAS 520	Clinical Pharmacology II	3
PAS 524	Gross Anatomy (with lab)	5
PAS 525	Diagnostic Methods	2
PAS 527	Human Physiology and Pathophysiology II	3
PAS 535	Electrocardiography	2
PAS 523	Medical Interviewing	1
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
PAS 536	Simulation I	2
PAS 537	Clinical Management of the Patient I	2

PAS 538	Physical Exam I with Lab	3
PAS 551	Clinical Medicine I	5
PAS 552	Clinical Medicine II	5
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
PAS 500	Preparation for the Clinical Year	1
PAS 540	Physical Exam II: Skills and Procedures with Lab	3
PAS 546	Simulation II	2
PAS 547	Clinical Management of the Patient II	2
PAS 553	Clinical Medicine III	5
PAS 554	Clinical Medicine IV	5
TOTAL		18

Beginning in the first summer session following the second year, each student begins a series of required clinical rotations for a duration of 45 weeks.

Year III — Clinical Rotations

Summer I and II, 15 credit hours; fall semester, 15 credit hours; spring semester, 15 credit hours

COURSE	TITLE	CREDIT HOURS
PASC 600	Internal Medicine	5
PASC 601	Pediatrics	5
PASC 602	Psychiatry	5
PASC 603	Surgery	5
PASC 604	Emergency Medicine	5
PASC 605	Women's Health	5
PASC 606	Elective I	5
PASC 607	Family Medicine	5
PASC 608	Elective II	5
PASC 609	Elective – Non-Clinical (alternative to Elective I or II)	5
PASC 620	Rotation Graduate Seminar I	0
PASC 621	Rotation Graduate Seminar II	0
PASC 622	Rotation Graduate Seminar III	0
TOTAL		45

Total credits to complete degree requirements: 111 credit hours

MCPHS–Boston
School of Pharmacy–Boston

Executive Staff
Robert DiCenzo, PharmD, BCPS, FCCP, FAPhA, Professor and Associate Provost for Pharmacy Education; Dean, School of Pharmacy, Boston

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Professors Choi, Crosby, DiFrancesco, Donnelly, Ferullo, Grams, Han, Harris, Hwang, Kiritsy, Morelli, Moukhachen, Murray, On, Solodokin, Stanic, Stern, Thumar; Assistant Professors Casella, El HaChem, Frear, Hall, Jain, Murry, Patel, Ricupero, Szumita; Instructors Asher

Office of Experiential Education
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Rita Morelli, PharmD, Associate Professor of Pharmacy Practice and Experiential Coordinator

Ricky Thumar, PharmD, Associate Professor of Pharmacy Practice and Experiential Education Coordinator

Degree and Certificate Programs

Doctor of Pharmacy (PharmD)
Non-Traditional Doctor of Pharmacy Pathway *
Certificate in Advanced Pharmacy Practice Studies (CAPPS)
Doctor of Pharmacy/Master of Science in Clinical Research **
Doctor of Pharmacy/Master of Science in Regulatory Affairs and Health Policy **
Doctor of Pharmacy/Master of Science in Regulatory Sciences**
Doctor of Pharmacy/Master of Science in Clinical Investigation and Development**
Doctor of Pharmacy/Master of Business Administration in Healthcare Technology***
Doctor of Pharmacy/Master of Science in Health Informatics ***
Bachelor of Science in Pharmacy Science
Bachelor of Science in Pharmacy and Life Sciences
Bachelor of Science in Pharmaceutical Business
Bachelor of Science in Pharmaceutical Business / Master of Science in Clinical Research **
Bachelor of Science in Pharmaceutical Business / Master of Science in Regulatory Affairs and Health Policy **
Bachelor of Science in Pharmaceutical Sciences
Bachelor of Science in Pharmaceutical Sciences / Master of Science in Clinical Research**
Bachelor of Science in Pharmaceutical Sciences / Master of Science in Regulatory Affairs and Health Policy**
Bachelor of Science in Pharmaceutical Sciences / Master of Science in Medicinal Chemistry**
Bachelor of Science in Pharmaceutical Sciences / Master of Science in Pharmaceutics**
Bachelor of Science in Pharmaceutical Sciences / Master of Science in Pharmacology**
Bachelor of Science in Pharmacology and Toxicology
Bachelor of Science in Pharmacology and Toxicology / Master of Science in Clinical Research**
Bachelor of Science in Pharmacology and Toxicology / Master of Science in Regulatory Affairs and Health Policy**
Bachelor of Science in Pharmacology and Toxicology / Master of Science in Pharmacology**

*Online program
**See Division of Graduate Studies for additional details
***See School of Healthcare Business and Technology for additional details

Doctor of Pharmacy (PharmD) Programs

The School of Pharmacy–Boston offers a six-year program leading to a Doctor of Pharmacy (PharmD) degree. Students follow a curriculum that combines general, specialized, and applied science courses with those in the liberal arts, preparing them for an increasingly visible role on the healthcare team. In addition, required experiential courses provide opportunities to learn while practicing in areas such as ambulatory, community, inpatient adult patient care, and hospital/health systems pharmacy, as well as elective experiences in geriatrics, pediatrics, industry, long-term care, and regulatory agencies. Credits earned in professional courses are valid for up to seven years.

Technical Non-Academic Standards

Introduction
The School of Pharmacy (SOP) is committed to creating and sustaining a climate of inclusive excellence which is essential to prepare our students to embrace differences in experience and perspectives in a manner that would enrich their engagement and collaboration as healthcare providers and members of our global community. As a global leader in healthcare education, SOP welcomes individuals from various backgrounds, personal and professional experiences, and ways of thinking. As part of SOP's commitment to inclusive excellence, SOP prohibits discrimination according to

all applicable state and federal laws. The purpose of this document is to ensure all students entering the PharmD program understand the clinical and nonacademic requirements of the program so that they can make informed decisions regarding their pursuit of the profession of pharmacy.

Candidates for admission to and students enrolled in the PharmD program must have abilities and skills in multiple domains, including communication, intellectual, behavioral/social, and visual/auditory/tactile/motor competencies. The following technical standards (non-academic standards are essential for the students' successful progression and completion of the educational outcomes of the curriculum.

All students are expected to meet these technical standards, with or without reasonable accommodations. Students wishing to request accommodations for disabilities should contact the Office of Student Access and Accommodations (see Office of Student Access and Accommodations in the Student Services Section of the catalog).

Domain: Communication
Performance Standards
- Must have functional English speaking, reading, and writing skills to communicate clearly and professionally with patients, family, caregivers, physicians, and other healthcare professionals, colleagues, and faculty.
- Communication encompasses both verbal and non-verbal expression, reading, writing, and computer skills.

Essential Functions
- Must have the ability to participate in class discussions, group projects, and practical labs for the purpose of the delivery and receipt of medical information
- Must have the ability to recognize both verbal and non-verbal communication,
- Must have the ability to report accurately and legibly in patients' charts, demonstrating the knowledge of the meaning and spelling of words, rules of composition and grammar
- Must have the ability to explain to other healthcare team members, patients, and/or caregivers' reason for treatment, preventive measures, disease process, and need for referral
- Must have the ability to use computers and other technology to accurately record information and convey critical health-related documentation
- Must have the ability to recognize and respond to physical and psychological needs of patients

Domain: Intellectual
Performance Standards
- Must have critical and logical thinking skills to engage in clinical judgment and problem solving to address issues and problems within all learning environments
- Must have ability to multi-task and to perform work in a logical and sequential manner

Essential Functions
- Must possess the skills to memorize, perform scientific measurement and calculation, reason, analyze, and synthesize information
- Must demonstrate the ability to retrieve, read, understand, and interpret medical, scientific and professional information and literature
- Must have the skills to develop problem-solving and decision-making skills
- Must demonstrate the ability to learn effectively through a variety of modalities including, but not limited to classroom instruction, small group discussion, individual study of materials, preparation and presentation of written and oral reports, and use of computers and other technology
- Must demonstrate the ability to prioritize and complete tasks in laboratory, clinical, and patient care settings with time constraints
- Must perform a variety of duties accurately, often changing from one task to another without loss of efficiency or composure.

Domain: Behavioral/Social
Performance Standards
- Must possess the ability to relate to patients, caregivers, other members of the healthcare team, and faculty in a professional manner
- Must demonstrate sensitivity to people from various backgrounds and experiences
- Must possess the ability to interact with and respond to needs of patients and caregivers from a variety of backgrounds and with differences in emotional, intellectual, and physical health issues

Essential Functions
- Must be able to exercise good judgment; to complete patient care responsibilities appropriately; and to relate to patients, families, and colleagues with courtesy, compassion, maturity, and respect for their dignity
- Must be able to effectively function when faced with challenges and uncertainties in classroom, laboratory, and experiential settings
- Must be able to accept criticism and be able to respond and modify behavior accordingly

- Must be able to interact with faculty, staff, peers, patients, and members of the healthcare team in a mature and professional manner that reflects the core values of the University and the School.

Domain: Data
Performance Standard
- Must have the skills to gather data from written reference material, oral presentations, illustrations, diagrams, and patient observation

Essential Functions
- Must have the ability to gather data from written reference material, computer-based programs, and oral presentations
- Must have the ability to observe and/or conduct demonstrations and experiments
- Must have the ability to utilize various types of assessment skills required for patient-centered care, including reading digital or analog representations of physiologic phenomena
- Must have the ability to execute and properly participate in the activities of a laboratory or an experiential rotation that are components of pharmacy practice
- Must have the skills to read and interpret prescriptions, prescription labels, and drug labels

Domain: Additional Competencies
Performance Standards
- Must have the skills to prepare pharmaceutical products, evaluate patients, and perform basic laboratory tests
- Must have the skills to manipulate and control laboratory equipment and materials

Essential Functions
- Must possess the skills to accurately compound and prepare pharmaceutical products for dispensing to patients
- Must possess the skills to perform basic patient assessments including, but not limited to palpation, auscultation, percussion, and other diagnostic maneuvers
- Must possess the skills to conduct laboratory diagnostic tests and administer non-oral medications

Academic Complaint Policy
It is the policy of the MCPHS School of Pharmacy–Boston (SOP-B) to objectively review student grievances related to academic and non-academic issues.

Students with complaints regarding discrimination are referred to the University discrimination grievance policy. Students with issues or complaints regarding their grade or performance in an individual class are referred to the grade appeals policy. Both policies are in the Academic Policies and Procedures section of this course catalog.

If a student wishes to complain about an issue related to the accreditation standards of the Accreditation Council for Pharmacy Education (ACPE), the student should follow the procedure detailed below.

Procedure
- The student writes a letter detailing the complaint to the School of Pharmacy–Boston Assistant Dean for Academic Affairs;
- If the Assistant Dean is unable to resolve the issue, they form an ad hoc committee of three faculty members (at least one member from each department) and asks the committee to review the complaint and make a recommendation;
- The student receives a written response within 30 days;
- If the student wishes to appeal the decision, they may appeal to the SOP-B Dean within five days;
- The Dean makes a decision and informs the student within 14 days. The decision of the school dean is final;
- The SOP-B Dean's Office keeps a file of all complaints and responses

If a student wishes to file a complaint with ACPE, the student should contact the council via email, phone or mail. The ACPE contact information is available in the catalog in the introduction section under Accreditation.

Doctor of Pharmacy (PharmD) - 6-year Program

Progression Requirements
Students must have a minimum 2.8 grade point average (GPA) by the end of the spring semester of the second year to progress into the first professional year (third year) of the PharmD program.

Students must also complete all preprofessional courses with a minimum grade of C- by the end of spring semester of the second year to progress into the first professional year. In addition to the GPA and course completion and passing requirements, the School of Pharmacy Boston and the Accreditation Council for Pharmacy Education requires all preprofessional students in the second year of the PharmD program to file an application through PharmCAS, complete an oral interview and written assessment (PharmCAS essay) (Progression Interview) to progress into the first professional year (third year) of the PharmD program. Students must achieve a satisfactory score on both the verbal and written assessments in order to progress into the first professional year.

- *All decisions concerning progression into the first professional year are made at the end of the spring semester of the second preprofessional year.*
- *Students must maintain a cumulative GPA of 2.7 in years III-VI of the program. In addition, the minimum passing grade for all required professional courses is C-.*
- *All PharmD students must complete all requirements and be in good academic standing before beginning sixth-year advanced clinical rotations.*

All professional coursework in the PharmD program must be completed within a period of seven years. Any coursework older than seven years must be repeated.

Policy on Enrollment Management for the Doctor of Pharmacy Program
The MCPHS, School of Pharmacy–Boston seeks to maintain an appropriate balance of qualified Doctor of Pharmacy (PharmD) students per class with the need to assure high academic standards that are consistent with those of the profession. Students who are enrolled in the Pharmaceutical Sciences and Premedical Studies degree programs within the University, who have successfully completed all required prerequisites for the PharmD program, and who have attained *a minimum GPA of 3.0 without failing or repeating courses* are eligible to apply for transfer into the first professional year of the PharmD program. Students must successfully fulfill all requirements prior to the fall semester of the first professional year, in accordance with the standards of June 2016 of the Accreditation Council on Pharmacy Education (ACPE) and those described in the policy of the School of Pharmacy–Boston on progression into the Doctor of Pharmacy program.

Applications for internal transfer into the fall semester of a given year must be submitted to the Office of Admissions. Students file an application through PharmCAS, complete an oral interview and writing assessment (PharmCAS essay) and must achieve a satisfactory score on both the verbal and written assessments in order to progress into the first professional year. Decisions regarding acceptance of internal transfer applicants into the PharmD program will be made by mid-August based on space availability in the first-professional-year class for the following fall semester. Matriculating students who wish to transfer into the PharmD program at any time after the close of final grades at the end of the spring semester of the second year will be required to complete their current program and may then apply after they have been awarded their degree.

External transfers into the PharmD program are required to comply with the transfer admission policy as described in the University catalog, file an application through PharmCAS, complete an oral interview and writing assessment (PharmCAS essay) and achieve a satisfactory score on both the verbal and written assessments.

Pharmacy Experiential Rotations
Pharmacy Experiential education rotations are required throughout the professional curriculum. Three hundred twenty (320) hours of introductory pharmacy practice experiences are required prior to the sixth (fourth professional) year; 1,440 hours of advanced pharmacy practice experiences are required in the sixth (fourth professional) year. A number of experiential rotations in the required curriculum may be scheduled at some distance from the campus. This is necessary to provide a range of learning experiences and to ensure availability and quality of clinical rotation sites. The University will make every effort to accommodate requests regarding assignments to experiential education sites, but students generally can expect to be assigned to clinical sites at some distance from the campus for at least a portion of their required clinical rotations. In such instances, students are responsible for transportation and other related travel expenses.

Advanced Pharmacy Practice Experiences
During the final year of study, PharmD students earn 36 credit hours by completing 36 weeks of advanced pharmacy practice experiential rotations. The rotations start as early as May and run consecutively through late November or December. The rotations resume in January and finish in May.

Students are required to complete rotations in inpatient adult patient care, hospital/health systems pharmacy, ambulatory care, and community pharmacy. Additionally, students complete two elective rotations from areas such as administration, cardiology, community practice, critical care medicine, drug information, emergency medicine, gastroenterology, infectious diseases, nephrology, oncology/hematology, obstetrics/gynecology, pediatrics, poison information, and psychiatry.

Elective rotations chosen by the student are reviewed by the coordinators of experiential education to determine whether the rotations provide appropriate emphasis and balance to the student's overall program. Scheduling of the rotations is completed by the Office of Experiential Education and may be modified at the discretion of the coordinator(s).

Students must also successfully complete the NAPLEX Readiness course (PPB.700) during the 6th year as a condition for graduation.

Residency Requirement
Students must take all preprofessional (years 1-2) and professional courses (years 3-5) in residence at MCPHS.

Electives
Students are required to take two professional electives during the fifth year of the PharmD program. A list of professional electives is provided in the Self-Service platform.

Students have the option to apply for a 9 credit Graduate Certificate in Precision Medicine through the MCPHS School of Professional Studies. Coursework completed as part of this certificate may be applied towards professional elective credit. For further information about this pathway, students may consult with the Associate Dean of Student Engagement & Success or PharmD faculty mentors in the Center for Academic Success and Enrichment (CASE).

Technology Requirements for the Doctor of Pharmacy (PharmD) and Bachelor of Science in Pharmacy and Life Sciences
Beginning with the first professional year, students must have access to a laptop for the duration of each year to utilize the School's assessment platform of ExamSoft. To begin utilizing ExamSoft software at this time, students need to ensure that their laptops fulfill the following minimum requirements based on the type of device they choose to use with ExamSoft. Students need to confirm that computers meet minimum requirements prior to the start of each semester.

Curriculum: Doctor of Pharmacy (6 year) For Freshmen Admits YOG 2026 and 2027

Year I —fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus *OR*	
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3

MAT 151	Calculus I *OR*	
MAT 152*	Calculus II	3
TOTAL		17

*Students must complete MAT 152 prior to progression into PHY 270 Foundations of Physics I

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PHY 270	Foundations of Physics I or Distribution Elective	3
PPB 210	Introduction to Pharmacy	1
MAT 152	Calculus II or Distribution Elective	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 261	Statistics	3
PHY 270	Foundations of Physics I or Distribution Elective	3
PSB 225	Anatomy and Physiology for Pharmacy3	
	Distribution Elective	3
TOTAL		18

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 325	Introduction to Practice Management I (with lab)	3
PSB 328	Physiology/Pathophysiology I	4
PSB 337	Medical Biochemistry I	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 320	Introduction to Healthcare Delivery	3
PHB 380	Personal and Professional Development I	0
TOTAL		18

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 338	Medical Biochemistry II	3
PPB 335	Introduction to Practice Management II (with lab)	2
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 424	Research Methods in Pharmacoepidemiology	2
PHB 381	Personal and Professional Development I	1
	Distribution Elective *	3
TOTAL		15

If placed in Pre-Calculus, the 3rd distribution elective may be taken this semester

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419	Introductory Pharmacy Practice Experience I	2
PPB 485	Drug Literature Evaluation	3
PSB 441	Medicinal Chemistry I	3
PSB 451	Pharmacology I	4
PPB 445	Therapeutics I	3
PPB 435	Seminar I	1
PHB 480	Personal and Professional Development II	0
TOTAL		16

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PPB 414	Virology and Anti-infectives	4
PPB 446	Therapeutics II	3
PSB 430	Pharmacokinetics	3
PSB 442	Medicinal Chemistry II	3
PSB 454	Pharmacology II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		19

Year V (third professional year)—fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics or Professional Elective*****	3
PPB 519	Introductory Pharmacy Practice Experience II	1
PPB 502	OTC Drugs / Self-Care	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 555	Advanced Therapeutics I	4
PPB 551	Advanced Seminar I	1
PPB 510	Clinical Pharmacokinetics	3
PHB 580	Personal and Professional Development III	0
TOTAL		18

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics or Professional Elective*****	3
PPB 546	Advanced Practice Management II (with lab)	3
PPB 552	Advanced Seminar II	1
PPB 556	Advanced Therapeutics II	4
PSB 411	Pharmacy Law	3
PHB 581	Personal and Professional Development III	1
	Professional Elective	3
TOTAL		18

***** *May be taken either semester.*

Year VI (fourth professional year) summer, fall and spring

COURSE	TITLE	CREDIT HOURS
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36
TOTAL		36

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

Total credits to complete degree requirements: 207 credit hours

Curriculum: Doctor of Pharmacy (6 year) For Freshman Admits YOG 2028

Year I —fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus *OR*	
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 151	Calculus I *OR*	
MAT 152*	Calculus II	3
TOTAL		17

*Students must complete MAT 152 prior to progression into PHY 270 Foundations of Physics I

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PHY 270	Foundations of Physics I	3
PPB 210	Introduction to Pharmacy	1
MAT 152	Calculus II or Distribution Elective	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 261	Statistics	3
PSB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective	3
TOTAL		17

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 325	Introduction to Practice Management I (with lab)	3
PSB 328	Physiology/Pathophysiology I	4
PSB 337	Medical Biochemistry I	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 320	Introduction to Healthcare Delivery	3
PHB 380	Personal and Professional Development I	0
TOTAL		18

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 338	Medical Biochemistry II	3
PPB 335	Introduction to Practice Management II (with lab)	2
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 424	Research Methods in Pharmacoepidemiology	2
PHB 381	Personal and Professional Development I	1
	Distribution Elective	3
TOTAL		18

If placed in Pre-Calculus, the 3rd distribution elective may be taken this semester

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419	Introductory Pharmacy Practice Experience I	2
PPB 485	Drug Literature Evaluation	3
PSB 441	Medicinal Chemistry I	3
PSB 451	Pharmacology I	4
PPB 445	Therapeutics I	3
PPB 435	Seminar I	1
PHB 480	Personal and Professional Development II	0
TOTAL		16

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PPB 414	Virology and Anti-infectives	4
PPB 446	Therapeutics II	3
PSB 430	Pharmacokinetics	3
PSB 442	Medicinal Chemistry II	3
PSB 454	Pharmacology II	4

PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		19

Year V (third professional year)—fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics or Professional Elective*****	3
PPB 519	Introductory Pharmacy Practice Experience II	1
PPB 502	OTC Drugs / Self-Care	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 555	Advanced Therapeutics I	4
PPB 551	Advanced Seminar I	1
PPB 510	Clinical Pharmacokinetics	3
PHB 580	Personal and Professional Development III	0
TOTAL		18

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics or Professional Elective*****	3
PPB 546	Advanced Practice Management II (with lab)	3
PPB 552	Advanced Seminar II	1
PPB 556	Advanced Therapeutics II	4
PSB 411	Pharmacy Law	3
PHB 581	Personal and Professional Development III	1
	Professional Elective	3
TOTAL		18

***** *May be taken either semester.*

Year VI (fourth professional year)

COURSE	TITLE	CREDIT HOURS
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36
TOTAL		36

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

Total credits to complete degree requirements: 209 credit hours

Curriculum: Doctor of Pharmacy (6-year) for freshman admits YOG 2029 and beyond

Year I —fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3

MAT 150	Precalculus *OR*	
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 151	Calculus I *OR*	
MAT 261	Statistics	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective*	3
	Distribution Elective*	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PSB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

* Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PSB 328	Physiology/Pathophysiology I	4
PSB 339	Essentials of Medical Biochemistry	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 322	Pharmacy Law I & Healthcare Delivery	3
PPB 325	Introduction to Practice Management I (with lab)	2
PHB 380	Personal and Professional Development I	0
TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
PPB 386	Drug Information & Literature Eval I	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 335	Introduction to Practice Management II (with lab)	2
PHB 381	Personal and Professional Development I	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419	Introductory Pharmacy Practice Experience I	4*
PSB 463	Drug Action I	4
PSB 422	Pharmacy Law II	1
PPB 445	Therapeutics I	4
PPB 435	Seminar I	1
PPB 486	Drug Information & Literature Eval II	3
PHB 480	Personal and Professional Development II	0
TOTAL		17

*Scheduled during the Summer semester after Year III

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PSB 430	Pharmacokinetics	3
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		13

Year V (third professional year)—fall

COURSE	TITLE	CREDIT HOURS
	Professional Elective	3
PPB 519	Introductory Pharmacy Practice Experience II	4*
PSB 563	Drug Action III	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 5XX	Therapeutics III	4
PPB 551	Seminar III	1
PPB 514	Infectious Diseases	4
PHB 580	Personal and Professional Development III	0
TOTAL		22

*Scheduled during the Summer semester after Year IV

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
	Professional Elective	3
PPB 546	Advanced Practice Management II (with lab)	3
PPB 5XX	Therapeutics IV	4
PPB 5XX	Seminar IV	1

PPB 510	Clinical Pharmacokinetics	3
PSB 522	Pharmacy Law III	1
PHB 581	Personal and Professional Development III	1
TOTAL		16

Year VI (fourth professional year)

COURSE	TITLE	CREDIT HOURS
Advanced Pharmacy Experience Program Rotations (APPE) by placement (must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36
TOTAL		36

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

Total credits to complete degree requirements: 202 credit hours

Doctor of Pharmacy (PharmD) Honors Program

The School of Pharmacy–Boston Honors Program is an enrichment of the Doctor of Pharmacy curriculum that expands educational opportunities for highly motivated and academically talented students.

Program Overview

Students in the Honors Program will:

- participate in small class seminars with peers that help students develop and improve research and presentation skills
- conduct a research project under the supervision of a research mentor in Pharmaceutical, Clinical, or Social and Administrative Sciences
- earn an Honors designation on their degree transcript with completion of all Honors Program requirements

Honors Program Eligibility

A student who is interested in applying for admission to the Honors Program must:

- be a third-year pharmacy student (first professional year, PY1) in the PharmD program; and
- have a minimum professional grade point average (GPA) of 3.50 by the end of the Fall semester of the PY1 year.

Applications for admission to the Honors Program are due by the last Friday in January of the Spring semester of the PY1 year. The applicant must:

- complete the application form
- submit their curriculum vitae / résumé
- provide two professional references
- submit an essay that outlines the reasons for pursuing the Honors Program as well as how the student expects the Honors Program to contribute to their professional goals after graduation

All applicants who meet the eligibility criteria, whose application materials are received by the deadline, are invited for an interview with members of the Honors Program Committee during the Spring semester. Applicants must maintain their professional GPA of 3.50 or higher through the end of the Spring semester of the PY1 year to be eligible for acceptance. The Honors Program Committee makes the final determination of eligible students' acceptance into the Honors Program.

Honors Program Requirements
Honors students are expected to maintain a professional GPA of a 3.30 or higher throughout the remaining professional years of the Doctor of Pharmacy curriculum.

Honors students participate in an Honors seminar that meets during the Fall and Spring semesters of the second professional year (PY2) and the Fall and Spring semesters of the third professional year (PY3). This seminar will foster intellectual inquiry and the technical skills necessary for development, completion and presentation of the Honors project.

During the second professional year (PY2), each Honors student will work on a specific literature-based research question for their Honors Program Coursework requirement. The Honors student will work under the supervision and guidance of a faculty facilitator to further develop their literature search, literature evaluation, written communication, and presentation skills. The student must fulfill the Honors Coursework requirement by the end of the second professional year (PY2). Evidence of student progress and completion will be through submission of summary and progress reports and an abstract submission to the University's Student Research Conference. By the end of the PY2 year, the Honors student will be paired with a faculty research mentor who will supervise their Honors research project throughout the remainder of the student's time in the Honors Program.

During the third professional year (PY3), the student will focus on advancing their Honors research project under the supervision and guidance of their research mentor. In October, the student will submit their research project proposal with a timeline and budget and present their proposal to the Honors Program Committee, who must approve the proposal prior to initiation of the project. The student begins work on his or her research project in the latter portion of the Fall semester of the PY3 year and continues into the PY4 year. The student may elect to work on their Honors project with their faculty research mentor through completion of an Undergraduate Research elective as a professional elective in the Spring semester of the PY3 year. The student may also select one or two six-week rotations that will advance the goals of the research project. Rotation selections must be indicated within their proposal. These rotations should occur in the first part of the PY4 academic year since the student must complete the research project during the final semester of the PY4 year.

During the fourth professional year (PY4), the student will focus on the advancement and completion of their research project under the supervision and guidance of their research mentor. The Honors student must submit a scientific report and give a formal presentation on the results of their research in the Spring semester of their PY4 year. Students will be encouraged to submit their projects as abstracts for presentations at regional and national meetings and to prepare manuscripts for publications.

Additional information on the Honors Program is available from the Office of the Dean of the School of Pharmacy-Boston.

Residencies in Pharmacy Practice
The School of Pharmacy–Boston offers several residencies in pharmacy practice. These postgraduate programs provide 12 months of intensive practice experience in pharmacy. Residents are appointed as adjunct instructors in the School of Pharmacy–Boston and participate in the teaching program at MCPHS and its clinical affiliates. Further information on these programs may be obtained from the Chair of the Department of Pharmacy Practice.

Non-Traditional Doctor of Pharmacy Pathway (PharmD) (Online)

The Non-Traditional Doctor of Pharmacy Pathway is designed for qualified practitioners with a BS in pharmacy degree who wish to earn a degree on a part-time basis. It is currently offered in a Web-supported format with online lectures and group discussions. This program helps pharmacists learn how to collect and interpret data to design a pharmaceutical care plan for their individual patients in collaboration with other healthcare professionals. Pharmacists learn how to recommend and implement a therapeutic plan; perform ongoing patient evaluations; and document and report new, unusual, or severe adverse drug reactions, drug interactions, or unexpected effects of newly marketed drugs.

Admission
Requests for formal admission into the pathway are obtained from and processed through the Admission Office. The PharmD Admission Committee in the School of Pharmacy–Boston is responsible for evaluating the applications and making admission decisions. All applicants to the program must:

- have a Bachelor of Science in Pharmacy from an accredited College/University
- have licensure to practice pharmacy in the United States;
- be employed in a patient care setting or have access to a site that provides opportunities to practice pharmaceutical care (e.g., community pharmacy, hospital pharmacy, managed care pharmacy).

Applications to the Non-Traditional Doctor of Pharmacy Pathway must include official transcripts from all institutions attended as well as the institution that granted the BS in pharmacy degree, curriculum vitae/resume, a short essay of 500 words stating professional goals and objectives, and proof of current pharmacy licensure. Course-by-course evaluations from World Education Services or equivalent are required of all foreign transcripts.

The priority filing date for submitting application materials to the Admission Office is May 1. The program begins In September; however, an onsite 3-day orientation is required before the start of the program. The online application is available at http://www.mcphs.edu/apply. Because seats in the pathway are limited, it is important that applications be returned early in the application period.

Academic Policies for the Non-Traditional Doctor of Pharmacy Pathway
In addition to the academic policies of the Doctor of Pharmacy program, the following requirements apply to PharmD students in the non-traditional pathway:

- The minimum overall grade point average for graduation from the Non-Traditional Doctor of Pharmacy program is 2.7. If the cumulative grade point average of any student falls below 2.7, the student is placed on academic probation and has two semesters to correct the deficiency. Failure to achieve a grade point average of 2.7 following the probationary period is grounds for dismissal from the pathway. For a description of the appeal process, refer to the MCPHS student handbook.
- The minimum acceptable grade is C– in courses in the pathway. Courses in which grades below passing are earned must be repeated until the minimum grade level is met. A student may petition to replace a maximum of one repeated course grade in his or her calculated grade point average.
- All coursework must be completed within a period of six years of matriculation into the Non-Traditional Doctor of Pharmacy program.

Pharmacy Experiential Rotations
Students are required to complete four core rotations in the areas of inpatient adult patient care hospital/health systems pharmacy, ambulatory care, and community pharmacy. These clinical experiences will occur outside of current work duties and after the completion of Phase II of the NTDP program. Students may apply to waive up to three of the four core 4-week rotations at two time points: once upon admission and once at the start of Phase II of the curriculum. The ability to waive rotations will be based on verified prior work experience (minimum 8 weeks of experience in the rotation area), board certification, or other qualifications. The waiver evaluation includes a formalized faculty interview to document competence related to the rotation area.

Curriculum: Non-Traditional Doctor of Pharmacy Pathway

The current pathway is organized into three phases that provide for progression toward the terminal educational outcomes. Completion of 43 credit hours of coursework is required to receive the degree.

Phase I — fall

COURSE	TITLE	CREDIT HOURS
PPB 600	Principles of Pharmaceutical Care	3
PSB 421	Pharmacoepidemiology	2
TOTAL		5

Phase I — spring

COURSE	TITLE	CREDIT HOURS
PPB 672	Drug Literature Resources and Evaluation	3
PPB 681	Clinical Pharmacokinetics	2
TOTAL		5

Phase II — summer

COURSE	TITLE	CREDIT HOURS
PPB 623	Pharmacotherapeutics I	5
PPB 623A	Pharmacotherapeutics Practice I	0
TOTAL		5

Phase II — fall

COURSE	TITLE	CREDIT HOURS
PPB 625	Pharmacotherapeutics II	6
PPB 625A	Pharmacotherapeutics Practice II	0
TOTAL		6

Phase II — spring

COURSE	TITLE	CREDIT HOURS
PPB 633	Pharmacotherapeutics III	6
PPB 633A	Pharmacotherapeutics Practice III	0
TOTAL		6

Phase III — Experiential Education- Summer/Fall/Spring Experiential Education APPE by placement, must complete PPBC 690-PPBC 693

COURSE	TITLE	CREDIT HOURS
PPBC 690	Ambulatory Care	4
PPBC 691	Community Pharmacy	4
PPBC 692	Hospital/Health Systems Pharmacy	4
PPBC 693	Inpatient Adult Patient Care	4
TOTAL		**16**

Total credits to complete degree requirements: 43 credit hours*

***Total number of program credits will be 31-43 based on the total number of APPE rotations waived.**

Certificate in Advanced Pharmacy Practice Studies (CAPPS)

The Certificate in Advanced Pharmacy Practice Studies (CAPPS) is a 65-credit-hour, postbaccalaureate certificate of advanced graduate study. The program may be completed over five semesters on a full-time basis. Semesters I and II are composed of didactic coursework and preparation for both the Foreign Pharmacy Graduate Equivalency Examination (FPGEE), which is administered by National Association of Boards of Pharmacy (NABP) and the North American Pharmacist Licensure Examination (NAPLEX). Semesters III through V are composed of pharmacy internships in inpatient and outpatient pharmacy practice settings. Additional presentations are offered during Semester V to assist students in continued preparation for the NAPLEX and Multistate Pharmacy Jurisprudence Examination (MPJE). During the pharmacy internships, students accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.

Admission Requirements and Certificate Requirements

For admission to the CAPPS program, an applicant must meet the following criteria:

- Earned a BPharm or PharmD from a five-year or six-year degree program outside the United States;
- Registered for the FPGEE;
- Achieved a minimum TOEFL score of 79 prior to acceptance

The CAPPS will be awarded to students who have successfully completed 65 credit hours of required coursework and pharmacy internship rotations. Progression to Semesters III–V is contingent upon a minimum passing grade of C- on all didactic coursework in the CAPPS program. Students must complete pharmacy internship rotation requirements with a minimum passing grade of C-.

While the CAPPS program is designed to assist students in applying for pharmacy licensure in the United States, it is the responsibility of each student to meet the licensure requirements of NABP and the Massachusetts Board of Registration in Pharmacy. Students are responsible for achieving (1) a passing score on the FPGEE, as determined by NABP; (2) a passing score on the TOEFL Internet-based Test (iBT), as determined by NABP; and (3) a passing score on NAPLEX and the state law examination, as determined by NABP and the Massachusetts Board of Registration in Pharmacy.

Curriculum: Certificate in Advanced Pharmacy Practice Studies (CAPPS)

Year I — fall

COURSE	TITLE	CREDIT HOURS
INT 400	Seminar in Pharmacy Practice and Pharmaceutical Sciences I	4
LIB 253	Oral Communication in Healthcare	3
PPB 445	Therapeutics I	3
PPB 502	Over-the-Counter Drugs / Self-Care	3
PSB 320	Introduction to Healthcare Delivery	3
TOTAL		16

Year I — spring

COURSE	TITLE	CREDIT HOURS
INT 201*	Intensive TOEFL Preparation	0–6
INT 401	Seminar in Pharmacy Practice and Pharmaceutical Sciences II	4
LIB 254	Oral Communication in Healthcare II	3
PSB 411	Pharmacy Law	3
PPB 446	Therapeutics II	3
TOTAL		13–19

** Students with satisfactory TOEFL scores prior to admission do not take INT 201. Students assigned to INT 201 complete the course off-site.*

Year I — summer

COURSE	TITLE	CREDIT HOURS
INT 500	Pharmacy Internships I and II	12
TOTAL		12

Year II — fall

COURSE	TITLE	CREDIT HOURS
INT 501	Pharmacy Internships III and IV	12
TOTAL		12

Year II — spring

COURSE	TITLE	CREDIT HOURS
INT 502	Pharmacy Internships V and VI	12
TOTAL		12

Total credits to complete program requirements: 65 credit hours

Doctor of Pharmacy/Master of Science in Clinical Research

This novel dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with clinical research. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Directors of the MCR program as well as the Assistant Dean of Academic Affairs, and pass an interview facilitated by the MCR program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. The dual degree program is designed to be completed in the six years that it takes to complete the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship.

Curriculum: Doctor of Pharmacy/Master of Science in Clinical Research (YOG 2029 and beyond)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	3
MAT 151	Calculus I	
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
MAT 151	Calculus I or	3
MAT 261	Statistics	
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective*	3
	Distribution elective*	3
TOTAL		18

Year I I— spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
SB 225	Anatomy and Physiology for Pharmacy	3

PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

*Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PSB 328	Physiology/Pathophysiology I	4
PSB 339	Essentials of Medical Biochemistry	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 322*	Pharmacy Law I & Healthcare Delivery	3
PPB 325	Introduction to Practice Management I (with lab)	2
PHB 380	Personal and Professional Development I	0

* Will be counted as an elective in the Master of Science in Clinical Research program

TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
PPB 386	Drug Information & Literature Eval I	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 335	Introduction to Practice Management II (with lab)	2
PHB 381	Personal and Professional Development I	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year III - summer

COURSE	TITLE	CREDIT HOURS
MCR 802	Research Methodology and the Development of Protocols and Proposals	3
DRA 808	Protection of Human Research Subjects	3
Total		6

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419**	Introductory Pharmacy Practice Experience I	4
PSB 463	Drug Action I	4
PSB 422	Pharmacy Law II	1
PPB 445	Therapeutics I	4
PPB 435	Seminar I	1
PPB 486**	Drug Information & Literature Eval II	3
PPB 480	Personal and Professional Development II	0
TOTAL		17

*Scheduled during the Summer semester after Year III

** Will be counted as an elective in the Master of Science in Clinical Research program

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PSB 430	Pharmacokinetics	3
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		13

Year IV - summer

COURSE	TITLE	CREDIT HOURS
MCR 803	Conducting Clinical Research Studies	3
DRA 804	FDA and Regulatory Affairs	3
Total		6

Year V (third professional year) — fall

COURSE	TITLE	CREDIT HOURS
MCR 801*	Pharmaceutical R&D: From Discovery to Market	3
PPB 519**	Introductory Pharmacy Practice Experience II	-4
PSB 563	Drug Action III	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 5XX	Therapeutics III	4
PPB 551	Seminar III	1
PPB 514	Infectious Diseases	4
PHB 580	Personal and Professional Development III	0
TOTAL		22

*Will be counted as a PharmD professional elective

**Scheduled during the Summer semester after Year IV

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
DRA 807*	Statistics in Clinical Research	3
PPB 546	Advanced Practice Management II (with lab)	3
PPB 5XX	Therapeutics IV	4
PPB 5XX	Seminar IV	1
PPB 510	Clinical Pharmacokinetics	3
PSB 522	Pharmacy Law III	1
HB 581	Personal and Professional Development III	1
TOTAL		16

*Will be counted as a PharmD professional elective

Year VI (fourth professional year)

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3*
MCR 804	Graduate Project in Clinical Research	3*
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36**

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

*Student t will take DRA 809 and MCR 804 during APPE Blocks 1 and 2.

** Students will take their six APPE rotations during Blocks 3-8.

TOTAL 42

Total credits to complete degree requirements: **220 credit hours**

Doctor of Pharmacy/Master of Science in Regulatory Affairs and Health Policy

This novel dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with regulatory affairs and health policy. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Directors of the Regulatory Affairs and Health Policy program as well as the Assistant Dean of Academic Affairs, and pass an interview organized by the Regulatory Affairs and Health Policy program. Upon acceptance into the program, students will begin studies in this dual degree by taking courses in the summer after the completion of their first professional year. The dual degree program is designed to be completed in the six years that it takes to complete the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship.

Curriculum: Doctor of Pharmacy / Master of Science in Regulatory Affairs and Health Policy (YOG 2029 and beyond)

Year I —f all

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	3
MAT 151	Calculus I	
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
MAT 151	Calculus I or	3
MAT 261	Statistics	
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective	3
	Distribution Elective	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PSB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective	3
	Distribution Elective	
TOTAL		14

*Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PSB 328	Physiology/Pathophysiology I	4
PSB 339	Essentials of Medical Biochemistry	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 322*	Pharmacy Law I & Healthcare Delivery	3
PPB 325	Introduction to Practice Management I (with lab)	2
PHB 380	Personal and Professional Development I	0
* WIll be counted as an elective in the Master of Science in Clinical Research program		
TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
PPB 386	Drug Information & Literature Eval I	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 335	Introduction to Practice Management II (with lab)	2
PHB 381	Personal and Professional Development I	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year III - summer

DRA 802	Law and Health Policy of Drugs and Devices	3
DRA 804	FDA and Regulatory Affairs	3
Total		6

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419*	Introductory Pharmacy Practice Experience I	4
PSB 463	Drug Action I	4
PSB 422	Pharmacy Law II	1
PPB 445	Therapeutics I	4
PPB 435	Seminar I	1
PPB 486**	Drug Information & Literature Eval II	3
PHB 480	Personal and Professional Development II	0
TOTAL		17

*Scheduled during the Summer semester after Year III

** WIll be counted as an elective in the Master of Science in Clinical Research program

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PSB 430	Pharmacokinetics	3
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		13

Year IV - summer

COURSE	TITLE	CREDIT HOURS
DRA 815	International Regulatory Affairs	3
DRA 807	Statistics in Clinical Research	3
TOTAL		6

Year V (third professional year) — fall

COURSE	TITLE	CREDIT HOURS
DRA 812 *	Advanced Topics in Regulatory Affairs	3
PPB 519**	Introductory Pharmacy Practice Experience II	4
PSB 563	Drug Action III	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 5XX	Therapeutics III	4
PPB 551	Seminar III	1
PPB 514	Infectious Diseases	4
PHB 580	Personal and Professional Development III	0

* Will be counted as a PharmD professional elective

**Scheduled during the Summer semester after Year IV

TOTAL 22

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
DRA 809*	Health Epidemiology	3
PPB 546	Advanced Practice Management II (with lab)	3
PPB 5XX	Therapeutics IV	4
PPB 5XX	Seminar IV	1
PPB 510	Clinical Pharmacokinetics	3
PSB 522	Pharmacy Law III	1
HB 581	Personal and Professional Development III	1

*Will be counted as a PharmD professional elective

TOTAL 16

Year VI (fourth professional year)

COURSE	TITLE	CREDIT HOURS
DRA 808	Protection of Human Research Subjects	3*
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3*
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36**

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0
TOTAL		42

* Student will take DRA 809 and MCR 804 during APPE Blocks 1 and 2.

** Students will take their six APPE rotations during Blocks 3- 8.

Total credits to complete degree requirements: 220 credit hours

Doctor of Pharmacy/Master of Science in Regulatory Sciences

This novel dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with regulatory sciences. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Director of the Regulatory Sciences program as well as the Assistant Dean of Academic Affairs, and pass an interview facilitated by the Regulatory Sciences program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. Students take additional courses after completion of the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship and will allow international students to apply for up tp 3 years of OPT.

Curriculum: Doctor of Pharmacy/Master of Science in Regulatory Sciences (YOG 2029 and beyond)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	3
MAT 151	Calculus I	
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
MAT 151	Calculus I or	3
MAT 261	Statistics	
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective*	3
	Distribution elective*	3
TOTAL		18

Year I I— spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
SB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

*Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PSB 328	Physiology/Pathophysiology I	4
PSB 339	Essentials of Medical Biochemistry	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 322*	Pharmacy Law I & Healthcare Delivery	3
PPB 325	Introduction to Practice Management I (with lab)	2
PHB 380	Personal and Professional Development I	0

* Will be counted as an elective in the Master of Science in Clinical Research program

TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
PPB 386	Drug Information & Literature Eval I	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 335	Introduction to Practice Management II (with lab)	2
PHB 381	Personal and Professional Development I	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year III - summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 807	Statistics in Clinical Research	3
Total		6

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419*	Introductory Pharmacy Practice Experience I	4
PSB 463	Drug Action I	4
PSB 422	Pharmacy Law II	1
PPB 445	Therapeutics I	4
PPB 435	Seminar I	1
PPB 486**	Drug Information & Literature Eval II	3
PPB 480	Personal and Professional Development II	0

*Scheduled during the Summer semester after Year III

** Will serve as PEP 807 Introduction to Health Economics and Outcomes Research

TOTAL 17

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PSB 430	Pharmacokinetics	3
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		13

Year IV - summer

COURSE	TITLE	CREDIT HOURS
DRA 808	Protection of Human Research Subjects	3
DRA 816	Principles of Quality Assurance and Control	3
Total		6

Year V (third professional year) — fall

COURSE	TITLE	CREDIT HOURS
DRA 809 *	Health Epidemiology	3
PPB 519**	Introductory Pharmacy Practice Experience II	4
PSB 563***	Drug Action III	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 5XX	Therapeutics III	4
PPB 551	Seminar III	1
PPB 514	Infectious Diseases	4
PHB 580	Personal and Professional Development III	0
TOTAL		22

*Will be counted as a PharmD professional elective

**Scheduled during the Summer semester after Years IV

***WIll serve as PSB 760 Fundamentals of Pharmaceutics

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 764*	Chemistry, Manufacturing and Controls	3
PPB546	Advanced Practice Management II (with lab)	3
PPB 5XX	Therapeutics IV	4
PPB 5XX	Seminar IV	1
PPB 510	Clinical Pharmacokinetics	3

PSB 522	Pharmacy Law III	1
HB 581	Personal and Professional Development III	1
TOTAL		16

*Will be counted as a PharmD professional elective

Year VI (fourth professional year)

COURSE	TITLE	CREDIT HOURS
	MS in Regulatory Sciences elective	3
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36**

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

*Student t will take DRA 809 and MCR 804 during APPE Blocks 1 and 2.

** Students will take their six APPE rotations during Blocks 3-8.

TOTAL 39

Additional course requirement post Doctor of Pharmacy graduation

PSB 761	Active Pharmaceutical Ingredients for Regulatory Sciences	3
PSB 762	Generic Drug and Biosimilar Development	3
PSB 886	Capstone	3
TOTAL		9

Total credits to complete degree requirements: **226 credit hours**

Doctor of Pharmacy/Master of Science in Clinical Investigation and Development

This novel dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with clinical investigation and development. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Director of the Clinical Investigation and Development program as well as the Assistant Dean of Academic Affairs, and pass an interview facilitated by the Clinical Investigation and Development program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. Students take additional courses after completion of the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship and allows international students an opportunity to apply for up to 3 years of OPT.

Curriculum: Doctor of Pharmacy/Master of Science in Clinical Investigation and Development (YOG 2029 and beyond)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	3
MAT 151	Calculus I	
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
MAT 151	Calculus I or	3
MAT 261	Statistics	
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective*	3
	Distribution elective*	3
TOTAL		18

Year I I— spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
SB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

*Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PSB 328	Physiology/Pathophysiology I	4
PSB 339	Essentials of Medical Biochemistry	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 322	Pharmacy Law I & Healthcare Delivery	3
PPB 325	Introduction to Practice Management I (with lab)	2
PHB 380	Personal and Professional Development I	0
TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
PPB 386	Drug Information & Literature Eval I	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 335	Introduction to Practice Management II (with lab)	2
PHB 381	Personal and Professional Development I	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year III - summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 807	Statistics in Clinical Research	3
Total		6

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419**	Introductory Pharmacy Practice Experience I	4
PSB 463	Drug Action I	4
PSB 422	Pharmacy Law II	1
PPB 445	Therapeutics I	4
PPB 435	Seminar I	1
PPB 486**	Drug Information & Literature Eval II	3
PPB 480	Personal and Professional Development II	0

*Scheduled during the Summer semester after Year III

** Will serve as PEP 807 Introduction to Health Economics and Outcomes Research

TOTAL		17

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PSB 430	Pharmacokinetics	3
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		13

Year IV - summer

COURSE	TITLE	CREDIT HOURS
DRA 808	Protection of Human Research Subjects	3
PSB 764	Clinical Research Protocol and Design	3
Total		6

Year V (third professional year) — fall

COURSE	TITLE	CREDIT HOURS
DRA 809*	Health Epidemiology	3
PPB 519**	Introductory Pharmacy Practice Experience II	4
PSB 563***	Drug Action III	3
PPB 545	Advanced Practice Management I (with lab)	3
PPB 5XX	Therapeutics III	4
PPB 551	Seminar III	1
PPB 514	Infectious Diseases	4
PHB 580	Personal and Professional Development III	0
TOTAL		22

*Will be counted as a PharmD professional elective

**Scheduled during the Summer semester after Years IV
***Will serve as PSB 760 Fundamentals of Pharmaceutics

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 773*	Pharmacovigilance	3
PPB 546	Advanced Practice Management II (with lab)	3
PPB 5XX	Therapeutics IV	4
PPB 5XX	Seminar IV	1
PPB 510	Clinical Pharmacokinetics	3
PSB 522	Pharmacy Law III	1
HB 581	Personal and Professional Development III	1
TOTAL		16

*Will be counted as a PharmD professional elective

Year VI (fourth professional year)

COURSE	TITLE	CREDIT HOURS
PSB 765	Clinical Research Coordination	3
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36**

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

*Student t will take DRA 809 and MCR 804 during APPE Blocks 1 and 2.

** Students will take their six APPE rotations during Blocks 3-8.

TOTAL 39

Additional course requirement post Doctor of Pharmacy graduation		
PSB 856J	GCP, GLP, and GMP	3
PSB 885	Capstone	3
One approved MS Clinical Investigation and Development elective		3

Total credits to complete degree requirements: **226 credit hours**

Doctor of Pharmacy/Master of Business Administration (MBA) Healthcare Technology

This dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with skills in business and healthcare technology. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Directors of the MBA program as well as the Assistant Dean of Academic Affairs, and pass an interview organized by the MBA program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. The dual degree program is designed to be completed in the six years that it takes to complete the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship.

Students are required to remain in good standing in both programs (PharmD and MBA)

Program Learning Outcomes

1. Analyze and interpret data derived from health encounters and business operations to identify and support organizational decision-making;
2. Evaluate innovative technologies and recommend solutions to improve healthcare delivery and organizational efficiency;
3. Demonstrate proficiency in data science, analytics, artificial intelligence, and information systems for management and decision-making;
4. Optimize resource allocations based on financial management and health economics principles;
5. Design and implement quality improvement initiatives leveraging statistics, data analytics, and health informatics to address complex challenges;
6. Assess the ethical and legal implications of technology adoption, including issues related to data privacy and security;
7. Formulate strategies for managing change and innovation in organizations transforming to meet the needs of their stakeholders;
8. Evaluate the impact of emerging technologies on healthcare business models and develop adaptive strategies.

For YOG 2029 there are 12 credits completed during the professional phase are counted towards the PharmD and the MBA program:

- PSB 322 fulfills HTM 717 (3 credits)
- LIB 512 YOG fulfills HTM 767 (3 credits)
- PharmD Professional Elective 1 is an MBA Course – Students take HTM 810 (3 credits)
- PharmD Professional Elective 2 is an MBA Course – Students take HTM 830 (3credits)

An Additional 24 MBA Credits are completed in the following semesters:

- Year 3 (P1) Summer 6 credits
- Year 4 (P2) Spring 3 credits
- Year 4 (P2) Fall 3 credits
- Year 4 (P2) Summer 6 credits
- Year 5 (P3) Summer 6 credits (Block one and Block two)

In total YOG 2029 will complete 226 credits.

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	3
MAT 151	Calculus I	
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
MAT 151	Calculus I or	3
MAT 261	Statistics	
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective*	3
	Distribution elective*	3
TOTAL		18

Year I I— spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
SB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

*Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 325	Introduction to Practice Management I (with lab)	2
PSB 328	Physiology/Pathophysiology I	4

PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PHB 380	Personal and Professional Development I	0
PSB 339	Essentials of Medical Biochemistry	3
PSB 322	Pharmacy Law I & Healthcare Delivery	3
TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PPB 335	Introduction to Practice Management II (with lab)	2
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PHB 381	Personal and Professional Development I	1
PPB 345	Self-Care Pharmacotherapy	2
PPB 386	Drug Information & Literature Eval I	2
PSB 363	Foundations of Drug Action	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year III – summer (10 week)

COURSE	TITLE	CREDIT HOURS
HTM 720	Business Statistics s & Data-Driven Decision-Making	3
HTM 727	Strategic Finance for Health Techn & Sciences	3
TOTAL		6

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419*	Introductory Pharmacy Practice Experience I	4
PPB 435	Seminar I	1
PHB 480	Personal and Professional Development II	0
PPB 486	Drug Info & Literature Eval II	3
PPB 445	Therapeutics I	4
PSB 463	Drug Action I	4
PSB 4XX	Pharmacy Law II	1
HTM 747	Management Science: Operations	3

*Scheduled during the Summer semester after Year III

TOTAL		20

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PSB 430	Pharmacokinetics	3
HTM 820	Revenue Cycle: Finance & Accounting	3
PHB 481	Personal and Professional Development II	1
TOTAL		16

Year IV – summer (10 week)

COURSE	TITLE	CREDIT HOURS
HTM 737	Data Science & Analytics for Business Decision-Making	3
HTM 757	Managing and Leading Change	3
TOTAL		6

Year V (third professional year)— fall

COURSE	TITLE	CREDIT HOURS
HTM 810	Project Management	3
PPB 519*	Introductory Pharmacy Practice Experience II	4
PHB 580	Personal and Professional Development III	0
PPB 514	Infectious Disease	4
PPB 580	Personal & Prof Development III	0
PPB 551	Seminar III	1
PPB 5XX	Therapeutics III	4
PSB 563	Drug Action III	3
PPB 545	Advanced Practice Management (with lab)	3
*Scheduled during the Summer Semester after Year IV		
TOTAL		22

Year V (third professional year) — spring

COURSE	TITLE	CREDIT HOURS
HTM 830	Medical Devices and Technology	3
PPB 546	Advanced Practice Management II (with lab)	3
PHB 581	Personal and Professional Development III	1
PPB 510	Clinical Pharmacokinetics	3
PPB 5XX	Seminar IV	1
PPB 5XX	Therapeutics IV	4
PSB 522	Pharmacy Law III	1
TOTAL		16

Year V – summer (10 week)

COURSE	TITLE	CREDIT HOURS
HTM 802 OR 803 (Experiential or Research)		3
HTM 850	Strategic Management Capstone	3
TOTAL		6

Year VI (fourth professional year) summer, fall and spring

COURSE	TITLE	CREDIT HOURS
Advanced Pharmacy Experience Program Rotations (APPE) by placement (must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36
TOTAL		36

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

Total credits to complete degree requirements: 226

Doctor of Pharmacy/Master of Science in Health Informatics

This dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with skills in healthcare informatics. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Directors of the Health Informatics program as well as the Assistant Dean of Academic Affairs, and pass an interview organized by the Health Informatics program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. The dual degree program is designed to be completed in the six years that it takes to complete the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship.

Curriculum

The proposed curriculum takes advantage of existing alignments between the PharmD core and the MHI program. The PharmD Curriculum will award nine credits of the MHI program (see notes regarding YOG 2028/29).

The offering sequence for the remaining 22 credits is designed so that PharmD students can take advantage of their summer semesters to complete the MHI program requirements (please see the offering outline below). All MHI courses are asynchronous online, allowing flexibility for students on rotations. Summer offerings will be in the 10-week summer semester.

Students are required to remain in good standing in both programs (PharmD and MHI).

Master of Science in Health Informatics Program Learning Outcomes

1. Interpret, evaluate, and judiciously act upon statutory, regulatory, and other compliance requirements to ensure ethical and equitable outcomes for patients, providers, and payers;
2. Identify, explain, and use data to illustrate barriers to care and support the development of a health system that reflects and adequately serves constituents;
3. Demonstrate data query, analysis, and display to inform complex decision-making with relevant data collected via electronic health records and other related systems;
4. Design, develop and implement interfaces between clinical data and key constituents in clinical and managerial settings to support patient and family-centered solutions;
5. Translate and interpret human interactions with and within healthcare systems by retrieving and analyzing health data, reported clinical outcomes, and patient experience data;
6. Collaboratively drive opportunities to expand team-based and distributed decision-making with informatics, data retrieval, critical analysis, and display;
7. Practice interdisciplinary and collaborative leadership in seeking and developing innovative and entrepreneurial solutions to complex challenges utilizing informatics, data science, and technology.

Dual Program Specifics

There are 9 credits completed during the professional phase that are counted towards the PharmD and the MHI program:

- for YOG 2029 PSB 322 fulfills HCM 710
- PharmD Professional Elective 1 is an MHI Course – Students take HTM 810 (3 credits)
- PharmD Professional Elective 2 is an MHI Course -Students take HTM 830 (3credits)

An Additional 22 MHI credits are completed in the following semesters:

- Year 3 Summer 9 credits
- Year 4 Summer 7 credits
- Year 5 Summer 6 credits (Block one and Block two)

In total YOG 2029 will complete 224 credits.

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus or	3
MAT 151	Calculus I	
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
MAT 151	Calculus I or	3
MAT 261	Statistics	
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	
PPB 210	Introduction to Pharmacy	1
MAT 261	Statistics or Distribution Elective*	3
	Distribution elective*	3
TOTAL		18

Year I I— spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
SB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

*Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Year III - fall

COURSE	TITLE	CREDIT HOURS
PHB 380	Personal & Prof Development I	0
PPB 325	Intro to Practice Mgmt I (with lab)	2
PSB 322	Pharmacy Law I & Healthcare Delivery	3
PSB 328	Physiology/Pathophysiology I	4

PSB 339	Essentials of Medical Biochem	3
PSB 349	Dosage Forms & Drug Del Systems	3
PSB 353	Pharmaceutical Calculations I	2
TOTAL		17

Year III - spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PHB 381	Personal & Prof Development I	1
PPB 335	Intro to Practice Mgmt II (with lab)	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 386	Drug Information & Literature Eval I	2
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
TOTAL		18

Year III – summer (10 week)

COURSE	TITLE	CREDIT HOURS
HIN 710	Essentials of Healthcare Informatics	3
HIN 720	Health Data Science – Programming and Database Structure	3
HIN 750	Clinical Information Systems	3
TOTAL		9

Year IV - fall

COURSE	TITLE	CREDIT HOURS
PHB 480	Personal & Prof Development II	0
PPB 419*	Intro Pharmacy Practice Experience I	4
PPB 435	Seminar I	1
PPB 486	Drug Info & Literature Eval II	3
PPB 445	Therapeutics I	4
PSB 463	Drug Action I	4
PSB 4XX	Pharmacy Law II	1

*Scheduled during the Summer semester after Year III

TOTAL		17

Year IV - spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PPB 446	Therapeutics II	4
PPB 436	Seminar II	1
PSB 430	Pharmacokinetics	3
PHB 481	Personal & Prof Development II	1
TOTAL		13

Year IV – summer (10 week)

COURSE	TITLE	CREDIT HOURS
HIN 738	Leading Change in Health Informatics	3
HIN 740	Health Data Security and Ethics	3
HIN 799	Orientation to Field Studies/Capstone	1
TOTAL		7

Year V - fall

COURSE	TITLE	CREDIT HOURS
PPB 514	Infectious Disease	4
PPB 519*	Intro Pharmacy Practice Experience II	4

PPB 545	Adv Practice Mgmt I (with lab)	3
PPB 580	Personal & Prof Development III	0
PPB 551	Seminar III	1
PPB 5XX	Therapeutics III	4
PSB 563	Drug Action III	3
HIN 771	Consumer Focused Tools & Systems	3
*Scheduled during the Summer semester after Year IV		
TOTAL		22

Year V - spring

COURSE	TITLE	CREDIT HOURS
PHB 581	Personal & Prof Development III	1
PPB 546	Adv Practice Mgmt II (with lab)	3
PPB 510	Clinical Pharmacokinetics	3
PPB 5XX	Seminar IV	1
PPB 5XX	Therapeutics IV	4
PSB 522	Pharmacy Law III	1
HIN 775	Project Management for Health Informatics	3
TOTAL		16

Year V – summer (10 week)

COURSE	TITLE	CREDIT HOURS
HIN 773	Human Factors Design & Interoperability	3
HIN 800 or 801	Applied Informatics Field Study OR Applied Informatics Capstone	3
TOTAL		6

Year VI (fourth professional year) summer, fall and spring

COURSE	TITLE	CREDIT HOURS
Advanced Pharmacy Experience Program Rotations (APPE) by placement		
(must complete PPBC 601–605, plus one additional elective as PPBC 605 or PPBC 606)		36
TOTAL		36

Year VI (fourth professional year) summer

COURSE	TITLE	CREDIT HOURS
PPB 700A	NAPLEX Readiness	0

Year VI (fourth professional year) fall

COURSE	TITLE	CREDIT HOURS
PPB 700B	NAPLEX Readiness	0

Year VI (fourth professional year) spring

COURSE	TITLE	CREDIT HOURS
PPB 700C	NAPLEX Readiness	0

Total credits to complete degree requirements: 224 credit hours

Bachelor of Science in Pharmacy

Bachelor of Science in Pharmacy Science (Boston) (For Freshman admits only; YOG 2026 and 2027)

This program is intended for first-year undergraduate students whose goal is to complete the Doctor of Pharmacy (PharmD) Program. The bachelor's program consists of two years of pre-professional courses followed by two years in the professional Doctor of Pharmacy program and results in awarding of the Bachelor of Science degree. Upon completion of the bachelor's degree, students' progress into the final two years of the Doctor of Pharmacy curriculum.

For students choosing to complete the Doctor of Pharmacy program in the SOP-Boston, successful completion of all pre-professional Bachelor's degree-related courses (years 1 & 2; For YOG 2026 and 2027 students 67 credits and for YOG 2028 students 66 credits) qualifies the student to be considered for progression into the professional phase of the program. In addition to the GPA and course completion and passing requirements, the School of Pharmacy-Boston and the Accreditation Council for Pharmacy Education requires all preprofessional students in the second year of the program to complete an oral interview and writing proficiency exam (Progression Interview) to progress into the first professional year (third year) of the Doctor of Pharmacy program. Students must achieve a satisfactory score on both the verbal and written proficiency exam in order to progress into the first professional year.

(Note that students completing the Bachelor of Science degree are not eligible for pharmacist licensure; all requirements for the Doctor of Pharmacy degree must be completed to be eligible to take the pharmacy licensure exams. Similarly, completing the Bachelor of Science degree does not qualify the graduate for entrance into the Non-Traditional Doctor of Pharmacy Pathway.)

Curriculum: Bachelor of Science in Pharmacy Science

Year I —fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus *OR*	
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 151	Calculus I *OR*	
MAT 152*	Calculus II	3
TOTAL		17

*Students must complete MAT 152 prior to progression into PHY 270 Foundations of Physics I

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PHY 270	Foundations of Physics I or Distribution Elective	3
PPB 210	Introduction to Pharmacy	1
MAT 152	Calculus II or Distribution Elective	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 261	Statistics	3
PHY 270	Foundations of Physics I or Distribution Elective	3
PSB 225	Anatomy and Physiology for Pharmacy	3
	Distribution Elective	3
TOTAL		18

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 325	Introduction to Practice Management I (with lab)	3
PSB 328	Physiology/Pathophysiology I	4
PSB 337	Medical Biochemistry I	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 320	Introduction to Healthcare Delivery	3
PHB 380	Personal and Professional Development I	0
TOTAL		18

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 338	Medical Biochemistry II	3
PPB 335	Introduction to Practice Management II (with lab)	2
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 424	Research Methods in Pharmacoepidemiology	2
PHB 381	Personal and Professional Development I	1
	Distribution Elective *	3
TOTAL		15

If placed in Pre-Calculus, the 3rd distribution elective may be taken this semester

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419	Introductory Pharmacy Practice Experience I	2
PPB 485	Drug Literature Evaluation	3
PSB 441	Medicinal Chemistry I	3
PSB 451	Pharmacology I	4
PPB 445	Therapeutics I	3
PPB 435	Seminar I	1
PHB 480	Personal and Professional Development II	0
TOTAL		16

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PPB 414	Virology and Anti-infectives	4
PPB 446	Therapeutics II	3
PSB 430	Pharmacokinetics	3
PSB 442	Medicinal Chemistry II	3
PSB 454	Pharmacology II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		19

Year V (third professional year) – fall)

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3

Total credits to complete degree requirements: 138 credit hours. ***BS in Pharmacy Sciences degree will be conferred in December 2024 for YOG 2026 and in December 2025 for YOG 2027.***

Bachelor of Science in Pharmacy Science (Boston) (For Freshman admits only; YOG 2028)

Year I —fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150*	Precalculus *OR*	
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3

CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 151	Calculus I *OR*	
MAT 152*	Calculus II	3
TOTAL		17

*Students must complete MAT 152 prior to progression into PHY 270 Foundations of Physics I

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PHY 270	Foundations of Physics I	3
PPB 210	Introduction to Pharmacy	1
MAT 152	Calculus II or Distribution Elective	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
MAT 261	Statistics	3
PSB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective	3
TOTAL		17

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 325	Introduction to Practice Management I (with lab)	3
PSB 328	Physiology/Pathophysiology I	4
PSB 337	Medical Biochemistry I	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 320	Introduction to Healthcare Delivery	3
PHB 380	Personal and Professional Development I	0
TOTAL		18

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 338	Medical Biochemistry II	3

PPB 335	Introduction to Practice Management II (with lab)	2
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 424	Research Methods in Pharmacoepidemiology	2
PHB 381	Personal and Professional Development I	1
	Distribution Elective	3
TOTAL		18

If placed in Pre-Calculus, the 3rd distribution elective may be taken this semester

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419	Introductory Pharmacy Practice Experience I	2
PPB 485	Drug Literature Evaluation	3
PSB 441	Medicinal Chemistry I	3
PSB 451	Pharmacology I	4
PPB 445	Therapeutics I	3
PPB 435	Seminar I	1
PHB 480	Personal and Professional Development II	0
TOTAL		16

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PPB 414	Virology and Anti-infectives	4
PPB 446	Therapeutics II	3
PSB 430	Pharmacokinetics	3
PSB 442	Medicinal Chemistry II	3
PSB 454	Pharmacology II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		19

Year V (third professional year) – fall)

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3

Total credits to complete degree requirements: 140 credit hours. ***BS in Pharmacy Sciences degree will be conferred in December 2026.***

Bachelor of Science in Pharmacy and Life Sciences (Boston) for YOG 2029 and beyond

This program is intended for first-year undergraduate students whose goal is to complete the Doctor of Pharmacy (PharmD) Program. The bachelor's program consists of two years of pre-professional courses followed by two years in the professional Doctor of Pharmacy program and results in awarding of the Bachelor of Science degree. Upon completion of the bachelor's degree, students progress into the final two years of the Doctor of Pharmacy curriculum.

For students choosing to complete the Doctor of Pharmacy program in the SOP-Boston, successful completion of all pre-professional Bachelor's degree-related courses (years 1 & 2; 63 credits) qualifies the student to be considered for progression into the professional phase of the program. In addition to the GPA and course completion and passing requirements, the School of Pharmacy Boston and the Accreditation Council for Pharmacy Education requires all preprofessional students in the second year of the program to complete an oral interview and writing proficiency exam (Progression Interview) to progress into the first professional year (third year) of the Doctor of Pharmacy program. Students must achieve a satisfactory score on both the verbal and written proficiency exam in order to progress into the first professional year.

(Note that students completing the Bachelor of Science degree are not eligible for pharmacist licensure; all requirements for the Doctor of Pharmacy degree must be completed to be eligible to take the pharmacy licensure exams. Similarly, completing the Bachelor of Science degree does not qualify the graduate for entrance into the Non-Traditional Doctor of Pharmacy Pathway.)

Curriculum: Bachelor of Science in Pharmacy and Life Sciences (Boston)

Year I —fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cellular and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 150	Precalculus *OR*	
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 151	Calculus I *OR*	
MAT 261	Statistics	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology *OR*	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
PPB 210	Introduction to Pharmacy	1

MAT 261	Statistics or Distribution Elective*	3
	Distribution Elective*	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PSB 225	Anatomy and Physiology for Pharmacy	3
PSB 230	Introduction to Pharmaceutical Sciences	2
	Distribution Elective*	3
	Distribution Elective*	
TOTAL		14

* Three distribution courses (HUM, SSC, BEH) must be successfully completed prior to Professional year I

Professional Years III–VI

Year III (first professional year) — fall

COURSE	TITLE	CREDIT HOURS
PSB 328	Physiology/Pathophysiology I	4
PSB 339	Essentials of Medical Biochemistry	3
PSB 349	Dosage Forms and Drug Delivery Systems	3
PSB 353	Pharmaceutical Calculations I	2
PSB 322	Pharmacy Law I & Healthcare Delivery	3
PPB 325	Introduction to Practice Management I (with lab)	2
PHB 380	Personal and Professional Development I	0
TOTAL		17

Year III (first professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 329	Physiology/Pathophysiology II	4
PSB 354	Pharmaceutical Calculations II	2
PSB 359L	Dosage Forms Laboratory	1
PSB 363	Foundations of Drug Action	1
PPB 386	Drug Information & Literature Eval I	2
PPB 345	Self-Care Pharmacotherapy	2
PPB 335	Introduction to Practice Management II (with lab)	2
PHB 381	Personal and Professional Development I	1
LIB 512	Healthcare Ethics	3
TOTAL		18

Year IV (second professional year) — fall

COURSE	TITLE	CREDIT HOURS
PPB 419*	Introductory Pharmacy Practice Experience I	4
PSB 463	Drug Action I	4
PSB 422	Pharmacy Law II	1
PPB 4XX	Therapeutics I	4
PPB 435	Seminar I	1
PPB 486	Drug Information & Literature Eval II	3
Personal and Professional Development II		0

*Scheduled during the Summer semester after Year III

TOTAL		17

Year IV (second professional year) — spring

COURSE	TITLE	CREDIT HOURS
PSB 465	Drug Action II	4
PSB 430	Pharmacokinetics	3
PPB 4XX	Therapeutics II	4
PPB 436	Seminar II	1
PHB 481	Personal and Professional Development II	1
TOTAL		13

Total credits to complete degree requirements: 128 credit hours. ***BS in Pharmacy Sciences degree will be conferred in December 2027.***

Bachelor of Science in Pharmaceutical Business

(Formerly Bachelor of Science in Pharmaceutical Healthcare Business)

This full-time, four-year undergraduate degree provides a blended curriculum of biological/pharmaceutical sciences and business for students interested in business careers in the pharmaceutical industry. The integration of these pre-professional studies with the Arts and Sciences core curriculum fosters critical thinking, decision-making, and oral and written communication skills – all key strengths for executive success.

As a pharmaceutical executive in management, sales or marketing, students work alongside clinicians and researchers to make meaningful contributions. This program educates students to have a business professional's skills and a scientist's understanding, so they can manage operations, develop market opportunities, find innovative business approaches, and improve healthcare outcomes through data analysis.

To meet the residency requirement for this program, students must complete at least 62 credit hours at MCPHS.

Curriculum: Bachelor of Science in Pharmaceutical Business (YOG 2025 to 2027)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology 1: Cell and Molecular Biology	3
CHE 110	Basic Chemistry I (w/lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms (w/lab)	4
CHE 210	Basic Chemistry II (w/lab)	4
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology OR	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BEH 355	Organizational Psychology	3
BIO 110	Anatomy and Physiology I (no lab)	3
LIB 120	Introduction to Psychology OR	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PSB 210	Macroeconomics	3
TOTAL		15

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II (no lab)	3
LIB 220	Introduction to Interpersonal Comm	3
PSB 215	Microeconomics	3
PSB 235	Intro to Business	3
	Social Science Elective	3
TOTAL		15

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 377	Healthcare Management	3
PSB 375	Fundamentals of Drug Development	3
PSB 376	Healthcare Marketing	3
PSB 415	Financial Accounting	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 320	Introduction to Healthcare Delivery	3
PSB 456	Entrepreneurship	3
PSB 380	Applied Business Techniques	3
PSB 416	Managerial Accounting	3
	Distribution Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 410	FDA and Regulatory Affairs	3
PSB 429	Operations Management	3
PSB 418	Pharmacoeconomics	3
	PSB Program Elective	3
TOTAL		15

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 445	Sales of Pharmaceuticals and Med Devices	3
PSB 446	Healthcare Finance	3
PSB 447	Fundamentals of Business Law	3
	PSB Program Elective	3
	PSB Program Elective	3
TOTAL		15

Total Credits to complete degree requirements: 121

Curriculum: Bachelor of Science in Pharmaceutical Business (YOG 2028 and beyond)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I (no lab)	3
CHE 110	Basic Chemistry I (w/lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II (no lab)	3
CHE 210	Basic Chemistry II (w/lab)	4
LIB 112	Writing in the Humanities	3

LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
BEH 355	Organizational Psychology	3
PSB 235	Introduction to Pharmaceutical Business	3
PSB 210	Macroeconomics	3
MAT 261	Statistics	3
PBP 260	Career Exploration & Development I	1
PSB 320	Introduction to Healthcare Delivery	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
PBP 250	Introduction to Project Management	3
LIB 220	Introduction to Interpersonal Comm	3
PSB 215	Microeconomics	3
PBP 261	Career Exploration & Development II	2
	Social Science Elective	3
	Distribution Elective	3
TOTAL		17

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 377	Management Principals	3
PSB 375	Fundamentals of Drug Development	3
PSB 376	Pharmaceutical Marketing	3
PSB 415	Financial Accounting	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 456	Entrepreneurship	3
PSB 380	Data Analysis	3
PSB 416	Managerial Accounting	3
PBP 360	Professional Development Seminar	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 542	Fundamentals of Bio Pharma Industry	3
PSB 410	FDA and Regulatory Affairs	3
PSB 429	Operations Management	3
PSB 418	Pharmacoeconomics	3
PSB 560	Internship	3
TOTAL		15

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 445	Sales of Pharmaceuticals and Med Devices	3
PSB 446	Healthcare Finance	3
PSB 447	Fundamentals of Business Law	3

PBP 449	Pharmaceutical Business Capstone	3
PSB 560	Internship	3
TOTAL		15

Total Credits to complete degree requirements: 123

NOTE: Students transferring from the PharmD program will have taken Chemical Principles I (CHE 131) and Chemical Principles II (CHE 132), which may be applied to Basic Chemistry I (CHE 110) and Basic Chemistry II (CHE 210). Organic Chemistry I (CHE 231) and Organic Chemistry II (CHE 232) may be applied to two electives.

Elective Requirements

Students in the Bachelor of Science in Pharmaceutical Business program are required to select a minimum of four elective courses (or at least 12 credits) in the area of business administration, including additional coursework in marketing, management, and accounting, or in a related area of study. The following is a list of recommended courses. Other courses offered by the Colleges of the Fenway also may be acceptable upon approval of the student's academic advisor or the program director.

Recommended Electives

COURSE	TITLE
BEH 250	Health Psychology
BEH 350	Abnormal Psychology
MAT 197	Computer Applications
PSB 424	Research Methods in Pharmacoepidemiology
PSB 434	Managed Healthcare Management and Administration
PSB 444	Organizational Development
PSB 530	Undergraduate Research
PSB 532	Directed Study
PSB 542	Fundamentals of the Biopharmaceutical Industry
PSB 560	PHCB Internship

NOTE: While an industry internship is encouraged as a valuable learning experience, it cannot be guaranteed by the University.

Curriculum: Bachelor of Science in Pharmaceutical Business / Master of Science in Clinical Research (YOG 2028 and beyond)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I (no lab)	3
CHE 110	Basic Chemistry I (w/lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II (no lab)	3
CHE 210	Basic Chemistry II (w/lab)	4
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
BEH 355	Organizational Psychology	3
PSB 235	Introduction to Pharmaceutical Business	3
PSB 210	Macroeconomics	3

MAT 261	Statistics	3
PBP 260	Career Exploration & Development I	1
PSB 320	Introduction to Healthcare Delivery	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
PBP 250	Introduction to Project Management	3
LIB 220	Introduction to Interpersonal Comm	3
PSB 215	Microeconomics	3
PBP 261	Career Exploration & Development II	2
	Social Science Elective	3
	Distribution Elective	3
TOTAL		17

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 377	Management Principals	3
PSB 375	Fundamentals of Drug Development	3
PSB 376	Pharmaceutical Marketing	3
PSB 415	Financial Accounting	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 456	Entrepreneurship	3
PSB 380	Data Analysis	3
PSB 416	Managerial Accounting	3
PBP 360	Professional Development Seminar	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 542	Fundamentals of Bio Pharma Industry	3
PSB 410	FDA and Regulatory Affairs	3
PSB 429	Operations Management	3
PSB 418	Pharmacoeconomics	3
PSB 560	Internship	3
MCR 801	Pharma R&D: From Discovery to Market	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 445	Sales of Pharmaceuticals and Med Devices	3
PSB 446	Healthcare Finance	3
PSB 447	Fundamentals of Business Law	3
PBP 449	Pharmaceutical Business Capstone	3
PSB 560	Internship	3
DRA 807	Statistics in Clinical Research	3
TOTAL		18

Year IV – summer (10 or 12 week)

Course	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
MCR 802	Research Methodology & the Development of Protocol	3
TOTAL		6

Year V – fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
MCR 803	Conducting Clinical Research Studies	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		9

Year V – spring

COURSE	TITLE	CREDIT HOURS
MCR 804	FDA and Regulatory Affairs	3
DRA/PBH/PEP/PSB selected graduate electives		3
DRA/PBH/PEP/PSB selected graduate electives		3
TOTAL		9

Total Credits to complete BS and MS degree requirements: 153

NOTE: Students transferring from the PharmD program will have taken Chemical Principles I (CHE 131) and Chemical Principles II (CHE 132), which may be applied to Basic Chemistry I (CHE 110) and Basic Chemistry II (CHE 210). Organic Chemistry I (CHE 231) and Organic Chemistry II (CHE 232) may be applied to two electives.

Curriculum: Bachelor of Science in Pharmaceutical Business / Master of Science in Regulatory Affairs and Health Policy (YOG 2028 and beyond)

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 110	Anatomy and Physiology I (no lab)	3
CHE 110	Basic Chemistry I (w/lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 210	Anatomy and Physiology II (no lab)	3
CHE 210	Basic Chemistry II (w/lab)	4
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
BEH 355	Organizational Psychology	3
PSB 235	Introduction to Pharmaceutical Business	3
PSB 210	Macroeconomics	3
MAT 261	Statistics	3
PBP 260	Career Exploration & Development I	1
PSB 320	Introduction to Healthcare Delivery	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
PBP 250	Introduction to Project Management	3
LIB 220	Introduction to Interpersonal Comm	3
PSB 215	Microeconomics	3
PBP 261	Career Exploration & Development II	2
	Social Science Elective	3
	Distribution Elective	3
TOTAL		17

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 377	Management Principals	3
PSB 375	Fundamentals of Drug Development	3
PSB 376	Pharmaceutical Marketing	3
PSB 415	Financial Accounting	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 456	Entrepreneurship	3
PSB 380	Data Analysis	3
PSB 416	Managerial Accounting	3
PBP 360	Professional Development Seminar	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 542	Fundamentals of Bio Pharma Industry	3
PSB 410	FDA and Regulatory Affairs	3
PSB 429	Operations Management	3
PSB 418	Pharmacoeconomics	3
PSB 560	Internship	3
DRA 802	Law and Health Policy	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 445	Sales of Pharmaceuticals and Med Devices	3
PSB 446	Healthcare Finance	3
PSB 447	Fundamentals of Business Law	3
PBP 449	Pharmaceutical Business Capstone	3
PSB 560	Internship	3
DRA 807	Statistics in Clinical Research	3
TOTAL		18

Year IV – summer (10 or 12 week)

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		6

Year V – fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
DRA 812	Advanced Topics in Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
TOTAL		9

Year V –spring

COURSE	TITLE	CREDIT HOURS
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3
DRA/PBH/PEP/PSB selected graduate electives		3
DRA/PBH/PEP/PSB selected graduate electives		3
TOTAL		9

Total Credits to complete BS and MS degree requirements: 153

NOTE: Students transferring from the PharmD program will have taken Chemical Principles I (CHE 131) and Chemical Principles II (CHE 132), which may be applied to Basic Chemistry I (CHE 110) and Basic Chemistry II (CHE 210). Organic Chemistry I (CHE 231) and Organic Chemistry II (CHE 232) may be applied to two electives.

Bachelor of Science in Pharmaceutical Sciences

The Bachelor of Science in Pharmaceutical Sciences program (BSPS) emphasizes specific coursework in the core areas of the pharmaceutical industry, preparing students for a variety of careers in industry or for a continuation of their education in postgraduate programs that could include pharmaceutics / industrial pharmacy, biotechnology, and regulatory affairs master's or doctoral degrees. The BSPS degree provides skills and experience for use in pharmaceutical, biotechnology, and medical device development, formulation, and manufacturing; and in the evaluation and regulatory oversight of the drug and medical device industry. Career opportunities for degree holders will exist within pharmaceutical, biotechnology, and medical device companies; research laboratories; governmental regulatory agencies; and other areas where the application of these skills and capabilities is sought.

Students in the Bachelor of Science in Pharmaceutical Sciences program must have a minimum grade point average (GPA) of 2.20 at the end of Year II and must maintain a minimum GPA of 2.20 thereafter to remain in good academic standing and to progress in the program. To meet the residency requirements for this program, students must complete at least 63 credit hours at MCPHS.

Curriculum: Bachelor of Science in Pharmaceutical Sciences

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I (with lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PHY 270*	Foundations of Physics I	3
PHY 272L*	Foundations of Physics I Lab	1
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

LIB 252	Introduction to Speech	3
PSB 210	Macroeconomics	3
	Distribution Electives	6
TOTAL		16

** PHY 270 Foundations of Physics I with PHY 272L may be taken fall or spring semester.*

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
PSB 340	Pharmaceutics I	4
	Distribution Elective	3
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 341	Pharmaceutics II	3
PSB 420	Pharmaceutical Analysis (with lab)	3
	Program Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 335	Pharmaceutical Technology	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
PSB 410	FDA and Regulatory Affairs	3
	Program Elective	3
TOTAL		15

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 301	Pharmacology for Allied Health Professionals	3
PSB 452	Pharmacokinetics	3
PSB 440	Molecular Biotechnology	3
	Program elective	3
TOTAL		12

Total credits to complete degree requirements: 120 credit hours

Elective Requirements

Students in the Bachelor of Science in Pharmaceutical Sciences program are required to select a minimum of three elective courses (or at least 9 credits) in the areas of chemistry, pharmaceutics, or industrial pharmacy. The following is a list of recommended courses. Other courses offered by the Colleges of the Fenway also may be acceptable upon approval by the student's academic advisor or the program director. Students may also use PharmD courses towards fulfilling their program electives when transferring from the PharmD program to the BSPS.

Recommended Electives

COURSE	TITLE
BIO 434	Immunology
CHE 333L	Introductory Biochemistry Laboratory
CHE 340	Inorganic Chemistry (with lab)
CHE 530	Undergraduate Research Project
CHE 532	Directed Study

CHE 714	Spectroscopic Analysis (with lab)
CHE 717	Instrumental Analysis (with lab)
CHE 755	Stereochemistry
CHE 365	Thermodynamics and Kinetics (with lab)
CHE 367	Quantum Mechanics and Molecular Structure
CHE 367L	Quantum Mechanics and Molecular Structure Laboratory
INF 210	Survey of the Literature of Chemistry
MAT 763	Advanced Statistics
PHY 274	Foundations of Physics II
PHY 274L	Foundations of Physics II Laboratory
PSB 320O	Introduction to Health Care Delivery
PSB 377	Management Principles
PSB 377O	Management Principles
PSB 415	Financial Accounting
PSB 415O	Financial Accounting
PSB 416	Managerial Accounting
PSB 416O	Managerial Accounting
PSB 429	Operations Management
PSB 429O	Operations Management
PSB 445	Sales of Pharmaceuticals and Medical Products
PSB 446	Healthcare Finance
PSB 456	Entrepreneurship
PSB 458	Pharmaceutics Seminar
PSB 460	Principles of Toxicology I
PSB 461	Principles of Toxicology II
PSB 530	Undergraduate Research
PSB 532	Directed Study
PSB 807	Unit Operations

Curriculum: Bachelor of Science in Pharmaceutical Sciences/Master of Science in Clinical Research

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I (with lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PHY 270*	Foundations of Physics I	3
PHY 272L*	Foundations of Physics I Lab	1
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
LIB 252	Introduction to Speech	3
PSB 210	Macroeconomics	3
	Distribution Electives	6
TOTAL		16

** PHY 270 Foundations of Physics I with PHY 272L may be taken fall or spring semester.*

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
PSB 340	Pharmaceutics I	4
	Distribution Elective	3
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 341	Pharmaceutics II	3
PSB 420	Pharmaceutical Analysis (with lab)	3
	Program Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 335	Pharmaceutical Technology	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
PSB 410	FDA and Regulatory Affairs	3
	Program Elective	3
MCR 801	Pharma R&D: From Discovery to Market	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 301	Pharmacology for Allied Health Professionals	3
PSB 452	Pharmacokinetics	3
PSB 440	Molecular Biotechnology	3

PSB 458	Pharmaceutics Seminar	1
	Program Elective	3
DRA 807	Statistics in Clinical Research	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
MCR 802	Research Methodology & Development of Protocol	3
TOTAL		6

Year I — spring

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
MCR 803	Conducting Clinical Research Studies	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		9

Year V— spring

COURSE	TITLE	CREDIT HOURS
MCR 804	FDA and Regulatory Affairs	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 151 credit hours

Curriculum: Bachelor of Science in Pharmaceutical Sciences/Master of Science in Regulatory Affairs and Policy

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I (with lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1

CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PHY 270*	Foundations of Physics I	3
PHY 272L*	Foundations of Physics I Lab	1
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
LIB 252	Introduction to Speech	3
PSB 210	Macroeconomics	3
	Distribution Electives	6
TOTAL		16

** PHY 270 Foundations of Physics I with PHY 272L may be taken fall or spring semester.*

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
PSB 340	Pharmaceutics I	4
	Distribution Elective	3
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 341	Pharmaceutics II	3
PSB 420	Pharmaceutical Analysis (with lab)	3
	Program Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 335	Pharmaceutical Technology	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
PSB 410	FDA and Regulatory Affairs	3
	Program Elective	3
DRA 802	Law and Health Policy of Drugs and Devices	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 301	Pharmacology for Allied Health Professionals	3
PSB 452	Pharmacokinetics	3
PSB 440	Molecular Biotechnology	3
PSB 458	Pharmaceutics Seminar	1
	Program Elective	3
DRA 807	Statistics in Clinical Research	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
DRA 812	Advanced Topics in Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 151 credit hours

Curriculum: Bachelor of Science in Pharmaceutical Sciences/Master of Science in Medicinal Chemistry

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I (with lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PHY 270*	Foundations of Physics I	3

PHY 272L*	Foundations of Physics I Lab	1
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
LIB 252	Introduction to Speech	3
PSB 210	Macroeconomics	3
	Distribution Electives	6
TOTAL		16

** PHY 270 Foundations of Physics I with PHY 272L may be taken fall or spring semester.*

Year III— fall

COURSE	TITLE	CREDIT HOURS
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
PSB 340	Pharmaceutics I	4
	Distribution Elective	3
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 341	Pharmaceutics II	3
PSB 420	Pharmaceutical Analysis (with lab)	3
	Program Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 335	Pharmaceutical Technology	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
PSB 410	FDA and Regulatory Affairs	3
	Program Elective	3
PSB 718	Drug Discovery and Development	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 301	Pharmacology for Allied Health Professionals	3
PSB 452	Pharmacokinetics	3
PSB 440	Molecular Biotechnology	3
PSB 458	Pharmaceutics Seminar	1
	Program Elective	3
PSB 851	Bio-organic Chemistry	2
TOTAL		15

Year IV — summer

COURSE	TITLE	CREDIT HOURS
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
CHE 731	Advanced Organic Chemistry	4
CHE 714	Spectroscopy	3
PSB 815	Drug Metabolism	3
PSB 819	Seminar	0
TOTAL		10

Year V — spring

COURSE	TITLE	CREDIT HOURS
PSB 820	Advanced Medicinal Chemistry	3
PSB 802	Chemistry of Macromolecules	3
PSB/DRA/MCR	Graduate Elective	3
PSB 819	Seminar	1
TOTAL		10

Total credits to complete BS and MS degree requirements: 152 credit hours

Curriculum: Bachelor of Science in Pharmaceutical Sciences/Master of Science in Pharmaceutics

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I (with lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PHY 270*	Foundations of Physics I	3
PHY 272L*	Foundations of Physics I Lab	1
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
LIB 252	Introduction to Speech	3
PSB 210	Macroeconomics	3
	Distribution Electives	6
TOTAL		16

** PHY 270 Foundations of Physics I with PHY 272L may be taken fall or spring semester.*

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
PSB 340	Pharmaceutics I	4
	Distribution Elective	3
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 341	Pharmaceutics II	3
PSB 420	Pharmaceutical Analysis (with lab)	3
	Program Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 335	Pharmaceutical Technology	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
PSB 410	FDA and Regulatory Affairs	3
	Program Elective	3
MAT 763	Advanced Statistics	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 301	Pharmacology for Allied Health Professionals	3
PSB 452	Pharmacokinetics	3
PSB 440	Molecular Biotechnology	3
PSB 458	Pharmaceutics Seminar	1
	Program Elective	3
PSB	Graduate Elective	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
PSB 825	Controlled Drug Delivery	3

PSB 808	Advanced Physical Pharmacy	3
PSB 825	Advanced Pharmacokinetics	3
PSB 819	Seminar	0
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
PSB 826	Novel Drug Delivery	3
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
PSB 819	Seminar	1
TOTAL		10

Total credits to complete BS and MS degree requirements: 151 credit hours

Curriculum: Bachelor of Science in Pharmaceutical Sciences/Master of Science in Pharmacology

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I (with lab)	4
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		14

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 261	Statistics	3
PHY 270*	Foundations of Physics I	3
PHY 272L*	Foundations of Physics I Lab	1
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1

LIB 252	Introduction to Speech	3
PSB 210	Macroeconomics	3
	Distribution Electives	6
TOTAL		16

** PHY 270 Foundations of Physics I with PHY 272L may be taken fall or spring semester.*

Year III — fall

COURSE	TITLE	CREDIT HOURS
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
PSB 340	Pharmaceutics I	4
	Distribution Elective	3
TOTAL		13

Year III — spring

COURSE	TITLE	CREDIT HOURS
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 341	Pharmaceutics II	3
PSB 420	Pharmaceutical Analysis (with lab)	3
	Program Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
PSB 335	Pharmaceutical Technology	3
PSB 346	Physico-chemical Properties of Drug Molecules	3
PSB 410	FDA and Regulatory Affairs	3
	Program Elective	3
MAT 763	Advanced Statistics	3
TOTAL		18

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB 301	Pharmacology for Allied Health Professionals	3
PSB 452	Pharmacokinetics	3
PSB 440	Molecular Biotechnology	3
PSB 458	Pharmaceutics Seminar	1
	Program Elective	3
PSB 847	Graduate Biochemistry	3
TOTAL		16

Year IV — spring

COURSE	TITLE	CREDIT HOURS
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
PSB 712	Systems Pharmacology I	3
PSB 841	Receptor Pharmacology	3
PSB 815	Drug Metabolism	3
PSB 819	Seminar	0
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
PSB 713	Systems Pharmacology II	3
PSB	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
PSB 819	Seminar	1
TOTAL		10

Total credits to complete BS and MS degree requirements: 152 credit hours

Bachelor of Science in Pharmacology and Toxicology

This program provides students with a strong foundation in the pharmacological and toxicological sciences for careers in the pharmaceutical and biotechnology research and development sectors, and also provides an excellent preparation for graduate and professional schools. The program is designed to meet the industrial need for qualified Bachelor of Science graduates with strong laboratory skills, particularly in integrative pharmacology and toxicology. Students have the opportunity to perform a senior (Year IV) research project or industrial internship that enhances their career potential.

Program-Level Outcomes. The student will: 1) be able to describe and apply scientific information directly related to pharmacology/toxicology 2) be able to propose practical laboratory procedures in the solution of problems related to pharmacology/toxicology 3) demonstrate essential laboratory skills and understand the techniques and analytical methods necessary to problem solve or find additional information in pharmacology/toxicology 4) be able to communicate science in written and/or oral manner 5) demonstrate professional work ethic and teamwork.

Students in the Bachelor of Science in Pharmacology and Toxicology program must have a minimum grade point average (GPA) of 2.50 at the end of Year II and must maintain a minimum GPA of 2.50 thereafter to remain in good academic standing and to progress in the program. To meet the residency requirement for this program, students must complete at least 63 credit hours at MCPHS.

Curriculum: Bachelor of Science in Pharmacology and Toxicology

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 252	Introduction to Speech	3
PHY 270	Foundations of Physics I**	3
PHY 272L	Foundations of Physics I Laboratory**	1
	Distribution Elective	3
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
BIO 260	Molecular Biology	3
CHE 232	Organic Chemistry II	3
PHY 274	Foundations of Physics II**	3
PHY 274L	Foundations of Physics II Laboratory**	1
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 370	Analytical Methods in Pharmacology and Toxicology I	2
PSB 401	Pharmacology and Toxicology Seminar I	1
	Distribution Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 371	Analytical Methods in Pharmacology and Toxicology II	2
PSB 402	Pharmacology and Toxicology Seminar II	1
PSB 460	Principles of Toxicology I	3
PSB 462	Basic Pharmacology I	3
	Program Electives	6
TOTAL		15

Research or Curricular Track
Fourth year students will be required to designate their selected track (research vs. curricular) by end of add/drop period of fall semester of senior year to facilitate appropriate course registration. The research track provides students the ability to participate in a senior research project in parallel with a seminar course during the spring semester.

Candidates who wish to pursue the Research Track in the Spring of Year IV must meet the following criteria:

- Achieve Good Academic Standing at the end of the Spring semester of Year III, *and* maintain Good Academic Standing through the Fall of Year IV
- Identify a temporally appropriate internship, cooperative education, research laboratory, or equivalent to complete the 5 credit PSB 535: Senior Research Project or Industrial Internship course
- Obtain a written approval from the Director of the B.S. in Pharmacology & Toxicology Program by the last day of the 12 Week Summer Semester
- Designate Research Track as the preferred track by the end of the Add/Drop period of the Fall semester of Year IV

Year IV — spring (Research Track)

COURSE	TITLE	CREDIT HOURS
PSB 403	Pharmacology and Toxicology Seminar III	1
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3
PSB 535	Senior Research Project or Industrial Internship	5
TOTAL		12

Year IV — spring (Curricular Track)

COURSE	TITLE	CREDIT HOURS
PSB/BIO	Course #1*	3
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3
PSB/BIO	Course #2*	3
TOTAL		12

***Course #1 and Course #2 must come from the following select list**:

1. **PSB 440**: Molecular Biotechnology – 3 credits – offered in Spring semester
2. **PSB 346**: Physicochemical Properties of Drug Molecules – 3 credits – offered in Fall semester
3. **PSB 452**: Pharmacokinetics – 3 credits – offered in Spring semester
4. **BIO 434**: Immunology – 3 credits – offered in Fall semester
5. **PSB 457**: Pharmacognosy – 3 credits – offered in Fall semester
6. **BIO 430**: Molecular Biology of Cancer – 3 credits – offered in Spring semester
7. **BIO 440:** Cell Biology – 3 credits – offered in Spring semester
8. **PSB 420**: Pharmaceutical Analysis/Lab – 3 credits – offered in Spring semester
9. **BIO 470:** The Biology of Obesity – 3 credits – offered in Spring semester

Students selecting the curricular track cannot utilize courses from above list as additionally fulfilling program elective requirements.

**For students who will be taking professional school entrance exams such as the MCAT, GRE, or OAT, they should take PHY 280/280L & 284/284L in the place of PHY 270/270L & 274/274L. These students should also take CHE 234L in Year II-spring.

Total credits to complete degree requirements: 120 credit hours

Elective Requirements
Students in the Bachelor of Science in Pharmacology and Toxicology program are required to select a minimum of two program elective courses (or at least 6 credits) in areas of pharmacology, biotechnology, toxicology, or advanced biological science. The following is a list of recommended courses. Other courses offered by the Colleges of the Fenway also may be acceptable upon approval of the student's academic advisor or the program director.

Recommended Electives

COURSE	TITLE
BEH 457	Drugs & Behavior
BIO 430	Molecular Biology of Cancer
BIO 434	Immunology
BIO 440	Cell Biology
BIO 445	Applied Human Physiology
BIO 465	Medical Parasitology

CHE 450	Pharmaceutical Chemistry
PBH 340	Environment Public Health
PBH 450U	Occupational Health
PSB 210	Macroeconomics
PSB 376	Pharmaceutical Marketing
PSB 377	Management Principles
PSB 375	Fundamentals of Drug Development
PSB 410	FDA and Regulatory Affairs
PSB 415	Financial Accounting
PSB 420	Pharmaceutical Analysis/Laboratory
PSB 452	Pharmacokinetics
PSB 440	Molecular Biotechnology
PSB 444	Organizational Development
PSB 456	Entrepreneurship
PSB 530	Undergraduate Research
SSC 432	Medical Anthropology
SSC 444	Cigarettes in American Culture

Curriculum: Bachelor of Science in Pharmacology and Toxicology/Master of Science in Clinical Research

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 252	Introduction to Speech	3
PHY 270	Foundations of Physics I**	3
PHY 272L	Foundations of Physics I Laboratory**	1
	Distribution Elective	3
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
BIO 260	Molecular Biology	3
CHE 232	Organic Chemistry II	3
PHY 274	Foundations of Physics II**	3
PHY 274L	Foundations of Physics II Laboratory**	1
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 370	Analytical Methods in Pharmacology and Toxicology I	2
PSB 401	Pharmacology and Toxicology Seminar I	1
	Distribution Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 371	Analytical Methods in Pharmacology and Toxicology II	2
PSB 402	Pharmacology and Toxicology Seminar II	1
PSB 460	Principles of Toxicology I	3
PSB 462	Basic Pharmacology I	3
	Program Electives	6
MCR 801	Pharma R&D: From Discovery to Marketing	3
TOTAL		18

Year IV — spring (Research Track)

COURSE	TITLE	CREDIT HOURS
PSB 403	Pharmacology and Toxicology Seminar III	1
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3
PSB 535	Senior Research Project or Industrial Internship	5
DRA 807	Statistics in Clinical Research	3
TOTAL		15

Year IV — spring (Curricular Track)

COURSE	TITLE	CREDIT HOURS
PSB/BIO	Course #1*	3
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3

PSB/BIO	Course #2*	3
DRA 807	Statistics in Clinical Research	3
TOTAL		15

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
MCR 802	Research Methodology & Development of Protocol	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
MCR 803	Conducting Clinical Research Studies	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
MCR 804	FDA and Regulatory Affairs	3
DRA/MCR	Program Electives	6
TOTAL		9

Total credits to complete BS and MS degree requirements: 150 credit hours

Curriculum: Bachelor of Science in Pharmacology and Toxicology/Master of Science in Regulatory Affairs and Health Policy

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3

LIB 252	Introduction to Speech	3
PHY 270	Foundations of Physics I**	3
PHY 272L	Foundations of Physics I Laboratory**	1
	Distribution Elective	3
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
BIO 260	Molecular Biology	3
CHE 232	Organic Chemistry II	3
PHY 274	Foundations of Physics II**	3
PHY 274L	Foundations of Physics II Laboratory**	1
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
	Distribution Elective	3
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 370	Analytical Methods in Pharmacology and Toxicology I	2
PSB 401	Pharmacology and Toxicology Seminar I	1
	Distribution Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 371	Analytical Methods in Pharmacology and Toxicology II	2
PSB 402	Pharmacology and Toxicology Seminar II	1
PSB 460	Principles of Toxicology I	3
PSB 462	Basic Pharmacology I	3
	Program Electives	6
DRA 802	Law and Health Policy	3
TOTAL		18

Year IV — spring (Research Track)

COURSE	TITLE	CREDIT HOURS
PSB 403	Pharmacology and Toxicology Seminar III	1
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3
PSB 535	Senior Research Project or Industrial Internship	5
DRA 807	Statistics in Clinical Research	3
TOTAL		15

Year IV — spring (Curricular Track)

COURSE	TITLE	CREDIT HOURS
PSB/BIO	Course #1*	3
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3
PSB/BIO	Course #2*	3
DRA 807	Statistics in Clinical Research	3
TOTAL		15

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
DRA 812	Advanced Topics in Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 150 credit hours

Curriculum: Bachelor of Science in Pharmacology and Toxicology/Master of Science in Pharmacology

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organisms	3
BIO 152L	Biology II: Biology of Organisms Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
LIB 120	Introduction to Psychology or	
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
LIB 252	Introduction to Speech	3
PHY 270	Foundations of Physics I**	3
PHY 272L	Foundations of Physics I Laboratory**	1
	Distribution Elective	3
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Medical Microbiology Laboratory	1
BIO 260	Molecular Biology	3
CHE 232	Organic Chemistry II	3
PHY 274	Foundations of Physics II**	3
PHY 274L	Foundations of Physics II Laboratory**	1
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
LIB 512	Healthcare Ethics	3
MAT 261	Statistics	3
PSB 326	Principles of Anatomy and Physiology I	3
PSB 331	Biochemistry I	3
	Distribution Elective	3
TOTAL		15

Year III— spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
PSB 327	Principles of Anatomy and Physiology II	3
PSB 332	Biochemistry II	3
PSB 370	Analytical Methods in Pharmacology and Toxicology I	2
PSB 401	Pharmacology and Toxicology Seminar I	1
	Distribution Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
PSB 371	Analytical Methods in Pharmacology and Toxicology II	2
PSB 402	Pharmacology and Toxicology Seminar II	1
PSB 460	Principles of Toxicology I	3
PSB 462	Basic Pharmacology I	3
	Program Electives	6
MAT 763	Advanced Statistics	3
TOTAL		18

Year IV— spring (Research Track)

COURSE	TITLE	CREDIT HOURS
PSB 403	Pharmacology and Toxicology Seminar III	1
PSB 461	Principles of Toxicology II	3

PSB 464	Basic Pharmacology II	3
PSB 535	Senior Research Project or Industrial Internship	5
PSB 847	Graduate Biochemistry	3
TOTAL		15

Year IV — spring (Curricular Track)

COURSE	TITLE	CREDIT HOURS
PSB/BIO	Course #1*	3
PSB 461	Principles of Toxicology II	3
PSB 464	Basic Pharmacology II	3
PSB/BIO	Course #2*	3
PSB 847	Graduate Biochemistry	3
TOTAL		15

Year IV — summer

COURSE	TITLE	CREDIT HOURS
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
PSB 712	Systems Pharmacology I	3
PSB 841	Receptor Pharmacology	3
PSB 815	Drug Metabolism	3
PSB 819	Seminar	0
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
PSB 713	Systems Pharmacology II	3
PSB Elective	Graduate elective	3
PSB/DRA/MCR	Graduate elective	3
PSB 819	Seminar	1
TOTAL		10

Total credits to complete BS and MS degree requirements: 151 credit hours

MCPHS–Boston
School of Pharmacy–Boston
Graduate Programs
Department of Pharmaceutical Sciences
Department of Pharmaceutical Business and Administrative Sciences

Professors Acquaah-Mensah, Andey, Belmonte (Emeritus), Camiel, Campbell, Cohen (Emeritus), D'Souza, Eguale, Frankhauser, Friel, Kerr, Kosegarten (Emeritus), Mehanna, Mekary, Migliore, Priefer, Rittenhouse, Williams (Emeritus); Associate Professors Betharia, Gayakwad, Kaplita, Kelley, Kiel, Landry, Maher (Emeritus), Metcalf, Mulla, Sharma, Sridhar, Yan; Assistant Professors Duran, Murimi-Worstell, Subramaniam

Degree Programs

Master of Science in Clinical Investigation and Development**
Master of Science in Clinical Research**
Master of Science in Regulatory Sciences**
Graduate Certificate in Clinical Research*
Master of Science in Medicinal Chemistry**
Master of Science in Medicinal Chemistry – Thesis**
Doctor of Philosophy in Medicinal Chemistry**
Master of Science in Pharmaceutical Economics and Policy*
Doctor of Philosophy in Pharmaceutical Economics and Policy**
Master of Science in Pharmaceutics***
Master of Science in Pharmaceutics – Thesis***
Doctor of Philosophy in Pharmaceutics***
Master of Science in Pharmacology***
Master of Science in Pharmacology – Thesis***
Doctor of Philosophy in Pharmacology***
Master of Science in Regulatory Affairs and Health Policy*
Graduate Certificate in Health Policy*
Graduate Certificate in Regulatory Affairs*
Graduate Certificate in Clinical Development of Drugs and Devices
* Boston and Online programs
** Boston only
*** Boston and Worcester
**** See School of Healthcare Business and Technology for additional details

Overview

The Division of Graduate Studies is dedicated to the education of advanced students in the pharmaceutical and health sciences. Each graduate program deepens students' understanding in specialized fields of knowledge to prepare them for leadership roles in higher education, industry, government, and healthcare practice.

Graduate education is highly individualized with respect to both coursework and research requirements as relevant to the individual programs. MCPHS requires specific courses relevant to the discipline that enable the student to develop the requisite conceptual and technical competencies needed to initiate meaningful research towards discovery learning. Students also must develop the communication skills required to disseminate professional and scientific information. Finally, and most importantly, graduate students are expected to demonstrate an ever-increasing ability to independently identify and resolve significant problems in their areas of specialization.

Participation in Research
Research, the experimental portion of graduate education, is the major focus of the course of study in many graduate programs and prepares students for their future careers. For certain programs, the advanced degree is awarded only after the timely completion of a written thesis or dissertation on the student's research. This research must be an original work of a quality that merits publication following critical peer review. Experienced faculty mentors work closely with students to guide them in their research and other educational endeavors.

Degree Requirements

Master of Science

The Master of Science (MS) degree is conferred upon a graduate student who has demonstrated a general proficiency of advanced scientific knowledge and/or basic research methodology in their area of specialization and fulfilled the following basic requirements:

- Successful completion of the required credit hours at the graduate level for that specific discipline. For non-thesis students, a capstone or a case study may be required, depending on the program, in their final semester. For thesis-based Masters, a specified number of credit hours of research are required; the specific number depends on the program.
- Maintenance of a cumulative grade point average (GPA) of 3.0 for all coursework taken at the University. The student must earn a grade of B- or higher in all courses. Transfer credits are not used in calculation of the GPA.
- Completion of all requirements for the Master of Science degree within a period of three years.
- For thesis-based Masters:
    - The student will select their research advisor within the first year of their enrollment in the MS program. The student, with input from their research advisor will populate their Graduate Advisory Committee, which will be made up of their advisor, one graduate faculty in the student's sub-discipline, and one graduate faculty outside of their sub-discipline. Students should consult the Associate Dean of Graduate Studies to confirm if the Graduate Advisory Committee is populated correctly.
    - Presentation of a thesis proposal must be given within 8 months of a student choosing a thesis advisor or being granted permission to do a thesis MS (depending on the specific program). The proposal is openly defended and approved/not-approved by the student's Graduate Advisory Committee. Successful defense requires a simple majority vote. If a student is unsuccessful in defending their thesis proposal, they will be granted only one more attempt, which must be scheduled within 3 months of original attempt. Initial proposal failure may imply a graduation delay; a second failure will result in the student reverting to the non-thesis MS and may require further delay in graduation as those requirements for the non-thesis MS are met.
    - Presentation of a thesis that is a contribution to knowledge in the major discipline and that has been openly defended and voted upon by the student's Graduate Advisory Committee and the Associate Dean of Graduate Studies. Successful defense requires a two-thirds positive vote. If unsuccessful, the Graduate Advisor Committee will indicate to the student what work is still needed. The student will then work with their advisor to determine the timeline for work to be completed and re-defended. The work conducted during the thesis should be of quality and quantity to be published as a peer-reviewed scientific manuscript.
    - Minimum of one, but no more than three, continuous academic years in residence at the University conducting thesis research.
    - All MS students involved in research, after they have successfully defended their thesis proposal, completed the required research credits, and all other program requirements other than thesis defense, will register for Graduate Study Extension (PSB895 or PEP895) until the thesis has been successfully defended. Graduate Study Extension registration is not required during the summer term.

NOTE:

- Enrolling in Practicums (PSB870 or PEP830) is allowable, but only with approval by the appropriate Program Director (and thesis advisor if a thesis student). Programs have their own rules about credits for an internship and credits allowed to substitute for electives in programs – consult these.
    - For non-thesis MS students (unless international students), requesting approval for a Practicum is not required.
    - International students must adhere to Curricular Practical Training (CPT) guidelines; contact the Office of International Services for further information. CPT internships must be clearly related to the fields of study of the degree the student is seeking and approved by their Program Director (and advisor if a thesis-based student). A student who wishes to enroll in a Practicum must be making adequate progress towards their degree.
- Additional requirements may be established by the individual graduate programs.
- A MS-thesis student may request to be evaluated for consideration for admission into their corresponding PhD program at any time after the student's first year; specific processes are determined by the appropriate Program Director and are based on faculty input. If a positive recommendation is made, this will allow the student to forgo the admissions process and be accepted immediately into the PhD program. For some programs, this admission may trigger a requirement to take the PhD qualification examination at the next opportunity.
- A MS thesis student may request at the time of their thesis defense that their Graduate Advisory Committee and the Associate Dean of Graduate Studies evaluate them for consideration into their corresponding PhD

program. If a positive recommendation is made, this will allow the student to forgo the admissions process and be accepted immediately into the PhD program. For some programs, this admission may trigger a requirement to take the PhD qualification examination at the next opportunity.

Doctor of Philosophy

The granting of the Doctor of Philosophy (PhD) degree is based on evidence of having mastered an area or research/discovery with distinctive attainments in a specialized field, particularly on the demonstrated ability to conduct independent and original investigation.

For the PhD degree, the student must complete the following basic requirements:

- Complete a minimum of 50 credit hours at the graduate level and no less than 4 credit hours (excluding summers) of doctoral research (individual programs have different research credit requirements). A student who has earned a Master of Science degree from another institution and has successfully transferred some credits to the MCPHS program must complete a minimum of 40 credit hours at MCPHS in addition to fulfilling all other requirements of the PhD program.
- Maintain a cumulative grade point average (GPA) of 3.0 for all coursework taken at the University. The student must earn a grade of B- or higher in all courses. Transfer credits are not used in calculation of the GPA.
- Completion of no less than two, but no more than six continuous academic years of residence at the University conducting dissertation research.
- Select their research advisor within the first year of their enrollment in the PhD program if lab-based or immediately after passing their Qualification Examination if non-lab based. The student, with input from their research advisor will populate their Graduate Advisory Committee, which will be made up of their advisor, one graduate faculty in the student's sub-discipline, and one graduate faculty outside of their sub-discipline. The student should consult the Associate Dean of Graduate Studies to confirm if Graduate Advisory Committee is populated correctly.
- Successfully complete qualifying examinations, both written and oral, in the student's area of concentration, prior to the defense of a dissertation proposal. A student has no more than 2 attempts in each of the written and oral qualifying examinations.
    - The comprehensive qualifying written examinations are conducted twice per year (2nd Monday in September and 2nd Monday in March) and must be taken at the first opportunity after prerequisite courses for the exam have been completed (this differs by program).
    - The written qualifying exam will be a 4-hour comprehensive exam, approximately equally distributed amongst the graduate faculty within the student's concentration (i.e., Medicinal Chemistry, Pharmacology, Pharmaceutics, or Pharmaceutical Economics and Policy). Where exams are partitioned based upon sub-disciplines, students must pass all sub-sections and a minimum of 4 of 6 questions overall. Should a student be unsuccessful at their first attempt on the written qualifying exam, they must retake it during the next offering. If a student is twice unsuccessful on the written qualifying exam, they cannot advance in the program and are granted a Masters (non-thesis) in their corresponding field (assuming that they have completed the required courses).
    - An oral exam will be scheduled to be completed within 6 weeks after being informed of successfully passing the written qualifying exam. The oral qualifying exam will consist of questions on general knowledge of the student's concentration. This will be evaluated by the student's Graduate Advisory Committee or permanent faculty (depending on the specific program) . At least 50% of the committee members must vote yes for the student to pass. Should a student be unsuccessful at their first attempt on the oral qualifying exam, they must retake it within 3-6 months. If a student is twice unsuccessful on the oral qualifying exam, they cannot advance in the program and are granted a Masters (non-thesis) in their corresponding field (assuming that they have completed the required courses).

- Present and defend a dissertation proposal within 3-9 months (depending on the specific program) after successfully passing both the oral and written QEs. Passing the dissertation proposal is the final requirement for a student to officially be identified as a PhD Candidate. The proposal is defended openly and is voted upon by the student's Graduate Advisory Committee. Successful defense requires a simple majority vote. If a student is unsuccessful in defending their dissertation proposal, they will be granted one more attempt, which must be scheduled within 3 months of the original attempt. If a student is twice unsuccessful with defending their dissertation proposal, they cannot advance in the program and are granted a Masters (non-thesis) in their corresponding field (assuming that they have completed the required courses). Present and defend a dissertation that is a contribution to knowledge in the major discipline. [Within Medicinal Chemistry, Pharmaceutics, and Pharmacology, students must have at least one peer-reviewed scientific manuscript accepted for publication on their original research related to their PhD work (i.e. not only a review article) prior to submitting their dissertation for defense.] Dissertation must be openly defended and voted upon by the

student's Graduate Advisory Committee and the Associate Dean of Graduate Studies. Successful defense requires a two-thirds positive vote. If unsuccessful, the Graduate Advisor Committee will provide the student with what work is still needed. The student will then work with their advisor to determine the timeline for work to be completed and re-defended.

- All PhD students who have defended their dissertation proposal and completed all required coursework (including research credits) will register for Graduate Study Extension (PSB895 or PEP895) until dissertation has been successfully defended. Graduate Study Extension registration is not required during the summer term.
- From the date of matriculation into the PhD program, all requirements for the PhD must be completed within six (6) years. For students transferring credits from a MS degree in the same area, the completion of all requirements for the PhD must be done within four (4) years from date of matriculation.

NOTE:

- Enrolling in Practicums (PSB870 or PEP830) is allowable, but only with approval by the appropriate Program Director and/or dissertation advisor (if already determined). Different programs may have their own rules regarding credits for an internship and credits allowed to substitute for electives in programs.
- A PhD student within the Pharmaceutical Sciences may enroll in only two Practicums (PSB870), conducted during the summer semesters, and only with approval by both the student's dissertation advisor and the Associate Dean of Graduate Studies, and these must occur prior to a student being identified as a PhD candidate (i.e. prior to dissertation proposal defense).
- A PEP PhD student may enroll in Practicums (PEP830) internship credits but must be discussed and approved by the Program Director, dissertation advisor, and the Associate Dean of Graduate Studies.
- International students must adhere to Curricular Practical Training (CPT) guidelines (contact the Office of International Services for further information). CPT internships must be clearly related to the fields of study of the degree the student is seeking, approved by their Program Director (and dissertation advisor, if one has already been determined) and be making adequate progress towards their degree.

Graduate Advisory Committee

For programs requiring a thesis or dissertation, a student's Graduate Advisory Committee shall consist of at least three designated graduate faculty members, two from the major discipline and one from a different discipline. The Graduate Advisory Committee is recommended by the graduate student and their graduate advisor with the approval of the Associate Dean of Graduate Studies (GRADUATE COMMITTEE APPOINTMENT Form). Graduate faculty are the core of graduate research, however the Associate Dean of Graduate Studies may appoint additional University faculty or adjunct faculty with unique specialization to serve on Graduate Advisory Committees to provide enrichment to the thesis/dissertation research. The advisor is responsible for coordinating the activity of the Graduate Advisory Committee and for ensuring compliance with Graduate Studies regulations. The Graduate Advisory Committee (with submitted form) should be appointed within 6 months after a student has chosen their field of specialization (i.e., discipline), but no later than 18 months after the student matriculates.

The student must meet at least once per semester with, and provide written progress reports to, their Graduate Advisory Committee from the time of appointment of the committee until completion of the requirements for the degree. The Associate Dean of Graduate Studies shall be notified in writing of these meetings by the graduate advisor, as well as being provided with copies of the progress reports every December 1st and April 15th until the student has defended their thesis/dissertation. More frequent meetings of the Graduate Advisory Committee and the student are encouraged to facilitate student-committee interactions. Meetings may be called at the discretion of the student, the advisor, or if two or more members of the Graduate Advisory Committee request such a meeting.

Academic Advising: Graduate Advisory Committee

Graduate faculty are responsible for ensuring that the standards of graduate academic performance are maintained and for stimulating development of the student's creative inquiry, professional integrity, and intellectual honesty. Graduate faculty possess the appropriate terminal degree in their discipline; are actively involved in research and scholarly or creative endeavors appropriate to their discipline; maintain their activities in their graduate discipline by consistently offering graduate coursework and by mentoring graduate students in their thesis/dissertation research. While graduate faculty are the core of graduate research, the Associate Dean of Graduate Studies may appoint additional University faculty or adjunct faculty with unique specialization to serve on Graduate Advisory Committees to provide enrichment to the thesis/dissertation research.

Admission to Degree Candidacy

Formal admission into a thesis-MS or PhD program requires approval of the student's Graduate Advisory Committee, on or before the dates stipulated by the current University regulations; these are on file with the Associate Dean of Graduate Studies. Requirements for admission to candidacy include maintenance of an overall "B" average or higher and removal of all grades of "Incomplete" (I). A graduate student seeking candidacy for the doctoral degree may do so

only following successful completion of the qualifying examinations and dissertation proposal. The requirements for the PhD degree program should be satisfied within four years of attaining candidate status.

Change of Program
The student should work closely with their major advisor and Graduate Advisory Committee members in designing their degree programs. If a change in the degree program is deemed appropriate, it must be approved by the major advisor, the Graduate Advisory Committee, and the Graduate Council, with recommendation to the Associate Dean of Graduate Studies. In the case of a change of program, only grades of B- or higher may be transferred and used towards the total credit count. A Change of Program form must be completed. Students are not generally allowed to change programs until completion of at least one academic year (two semesters).

Probation and Dismissal

Probation Policy
The Graduate Academic Standing Committee will recommend a student be placed on probation in their program for unsatisfactory performance in either the classroom or laboratory. Reasons for being placed on probation include:

- Failure to achieve a minimum passing grade in a required or an elective course, as specified in the student's program.
- Failure to achieve and maintain the minimum cumulative GPA as specified in the student's program.
- Failure to achieve a satisfactory grade in seminar, lab-rotation, and/or research.

NOTE: For students who are on probation but are unable to repeat a required course due to the course being closed or not available in the immediately succeeding term, the probation period is extended up to the next available course offering. The student will continue on probation, however this is not seen as demonstrating lack of demonstrating improvement at the end of the first probationary period (i.e., this is not considered another violation). Probationary status is not subject to appeal. Students are expected to complete the corrective action(s) and return to good standing during the next regular semester (i.e. Fall or Spring).

Dismissal Policy
A graduate student may be dismissed from their graduate program in the following ways:

- The Graduate Academic Standing Committee recommends dismissal to the Dean of the School of Pharmacy because:
  - the student failed to return to good standing after being placed on probation for two consecutive terms or
  - the student's Graduate Advisory Committee recommends to the Graduate Academic Standing Committee that the student be dismissed because 1) the student failed to meet the continuation or progression standards (e.g. PhD student has failed two attempts at either of the oral or written qualifying exams), 2) two-thirds of the student's Graduate Advisory Committee members formally vote that the student has not made satisfactory research progress in the program, or 3) the student was unsuccessful in their second attempt in defending their proposal or final thesis/dissertation.
- If the Dean of the School of Pharmacy accepts the recommendation of the Graduate Academic Standing Committee, the Dean of the School of Pharmacy shall notify the student of the decision.

The Dean of Students may dismiss a student from the graduate program for other situations listed in the *Student Handbook*. A student whose conduct (see Student Code of Conduct in *Student Handbook*) is unsatisfactory may be dismissed from the University at any time. In such a case, tuition fees paid for the current academic term will not be refunded.

In all cases, the dismissed student will receive written notice of dismissal which will include procedures for appeal, and notice of loss of housing, financial aid, and registration. Written notices will also outline any conditions the student should meet in an effort to gain readmission (e.g., taking a specific course and achieving a specific grade).

Repeating Courses
A student's Graduate Advisory Committee may permit the student to repeat a course as long as the successful completion of the course would allow the student to meet the minimum requirement of the program, including cumulative GPA and progression. Credit hours from courses that were repeated are counted only once. A student is not allowed to attempt a course more than twice.

Simultaneous Enrollment in another Degree Program
Except for a student enrolled in a dual degree program, no student currently enrolled in a master's or doctoral degree program in the Pharmaceutical Sciences or the Pharmaceutical Business and Administrative Sciences at MCPHS may

enroll simultaneously in another degree program (undergraduate or graduate) at MCPHS or another University unless permitted by the Graduate Council to do so.

Student Participation in Proprietary Research
When the Faculty of the University are involved in research, some of which may be of a proprietary nature, particular care must be taken to ensure that the requirement for graduate students to publicly present and defend the results of their thesis or dissertation research is not compromised. Graduate advisors and graduate students themselves share responsibility for ensuring that a graduate student does not become involved in thesis or dissertation research that is (or might become) proprietary in nature, if participation in that research delays completion of the student's degree requirements or negatively affects their productivity or future employability.

The policy of the Division of Graduate Studies and the University is that a faculty member or a graduate student cannot enter into an agreement that prevents or significantly delays the presentation or publication of research results. Journal publication delays not exceeding a year are acceptable, but publication of PhD dissertation materials through ProQuest is a requirement of the Division of Graduate Studies and cannot be delayed. In instances where, despite good faith efforts on the part of the research advisor and the graduate student, the graduate student's thesis or dissertation research is later found to be of a proprietary nature, the Associate Dean of Graduate Studies shall be notified immediately. The Associate Dean of Graduate Studies shall immediately convene a meeting of the graduate student, the research advisor, and members of the student's Graduate Advisory Committee. This group, in consultation with the Associate Dean of Graduate Studies resolves the problem. If the situation cannot be resolved through the efforts of this group, a ruling is made by the Associate Dean of Graduate Studies.

Thesis/Dissertation
A thesis/dissertation contributing new knowledge is required on a topic in the student's major discipline. Prior to a student being certified as a candidate for a thesis-track MS degree, the student must submit and defend a research proposal on the proposed topic. A student in the Master of Science in Regulatory Affairs and Health Policy or the Master of Science in Clinical Research program who seeks to enroll in DRA 810 Case Study Thesis must submit a proposal letter for approval by the program director and course faculty. The proposal must comply, as relevant, with MCPHS's School of Pharmacy Division of Graduate Studies' *Handbook for the Preparation of Graduate Theses and Dissertations*, as amended from time to time. This proposal should show evidence of creative integration of course material, superimposed on a sound understanding of the pertinent literature. The proposal should be done within six months of a student choosing their research advisor for Masters' candidates, or within nine months after successfully completing their qualifying examination for PhD candidates.

Upon approval of the research proposal by the research advisor, Graduate Advisory Committee, and the Associate Dean of Graduate Studies, the latter, after assessing availability and utilization of resources, will determine if the student is certified as a candidate for the thesis-track MS or PhD degree. The Graduate Advisory Committee critically reviews the written proposal. The student should understand that the proposal is acceptable only if it is imaginative and provides a scientifically rigorous test of a meaningful hypothesis. The proposal may be strengthened with data from preliminary experiments. Within three weeks of the submission of the written proposal to the committee, the student presents and defends the research proposal orally before the committee. The student is questioned on methodologies and background areas needed to successfully complete the proposed research. Such admission to candidacy must occur at least six months prior to completing requirements for the degree. The Division of Graduate Studies recognizes that the student's research may deviate substantially from that originally proposed. The student should be encouraged to pursue promising leads; however, long-term changes in the direction of the student's research should be in consultation with the Graduate Advisory Committee.

Off-campus research is not permitted, except for unusual circumstances that require a portion of the research to be completed off-campus in the continental United States, or for students admitted into an online MS degree program. If such a situation arises, the research advisor, with the written approval of the Graduate Advisory Committee, submits to the Associate Dean of Graduate Studies and Graduate Council a written request for permission to conduct the research off-campus. This request must be accompanied by a letter from the off-campus researcher agreeing to serve as the off-campus mentor and a description of the resources the off-campus site provides. A visit to the off-campus site for the Associate Dean of Graduate Studies (or their designee) and the research advisor is arranged once the research commences off-campus. Such permission is not required for students admitted into an online Master of Science degree program.

Following approval of the Graduate Advisor that the thesis/dissertation is ready for defense, the final draft must be made available to the entire Graduate Advisory Committee and the Associate Dean of Graduate Studies not less than four weeks before a date is set for the student's final examination. After making final edits, the thesis/dissertation, approved by the Graduate Advisory Committee and the Associate Dean of Graduate Studies, per requirements of the MCPHS Library, must be in the Graduate Office two weeks prior to graduation and must be accompanied by a RECEIPT

OF THESIS/DISSERTATION Form. The document must comply with the regulations contained in *Handbook for the Preparation of Graduate Theses and Dissertations*. Students are responsible for all costs related to preparation of the document.

Final Examination
Each graduate candidate for a thesis/dissertation-based degree is required to pass a general oral examination defending their thesis/dissertation. This shall begin with a formal presentation. The examination is conducted by the Graduate Advisory Committee, with the candidate's research advisor presiding as the chairperson. The Graduate Advisory Committee has primary responsibility for evaluating the student's research, including the written thesis/dissertation, and the formal oral presentation which is open to the University community.

Approval of the final examination by the Graduate Advisory Committee, with no more than one dissenting vote, is necessary to recommend the awarding of the degree. The decision of the Graduate Advisory Committee is forwarded to the Associate Dean of Graduate Studies (using the THESIS/DISSERTATION DEFENSE Form). The Graduate Faculty has the authority, which it has delegated to the Associate Dean of Graduate Studies, to approve the candidate for the awarding of the degree.

Only one opportunity for re-examination shall be given (in not less than three months and not more than 12 months from the time of the final examination at which this decision was made). Any candidate who is granted re-examination shall retain the status and obligations of a graduate student until the time of such re-examination.

Programs of Study

Doctor of Pharmacy/Master of Business Administration (MBA) Healthcare Technology
This dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with skills in business and healthcare technology. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Directors of the MBA program as well as the Assistant Dean of Academic Affairs, and pass an interview organized by the MBA program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. The dual degree program is designed to be completed in the six years that it takes to complete the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship.

Doctor of Pharmacy/Master of Science in Health Informatics
This dual degree program is intended for Doctor of Pharmacy students who wish to broaden and combine their pharmacy knowledge with skills in healthcare informatics. Students must apply for admission to this dual offering. To be eligible for admission, students must have successfully completed the first semester of their PY1 year with a minimum GPA of 3.0, complete an application, which will be reviewed by the Directors of the Health Informatics program as well as the Assistant Dean of Academic Affairs, and pass an interview organized by the Health Informatics program. Upon acceptance into the program, students will begin studies in the dual degree by taking courses in the summer after completion of their first professional year. The dual degree program is designed to be completed in the six years that it takes to complete the Doctor of Pharmacy degree program. The program offers a competitive edge to Doctor of Pharmacy students securing a position, residency or fellowship.

Master of Science in Clinical Investigation and Development
The Master of Science in Clinical Investigation and Development offers academic training in the science of standards and approaches to clinical research investigations. The program aims to educate a broad range or professionals who are interested in developing expertise in clinical research coordination or clinical research monitoring. Candidates for this program are individuals who hold a baccalaureate degree or equivalent professional degree and who are interested in pursuing careers in clinical research coordination or clinical research monitoring, or with organizations (e.g., federal or state healthcare agencies, clinical research organizations, managed care, hospitals) where knowledge of GCP, standards and approaches are used to assess the safety and efficacy regulated products. The primary emphasis of this program is clinical research investigations, however other components such as ethics, epidemiology, health economics, and drug development are also explored. Note that the program may establish requirements in addition to the general MS degree requirements described in this Catalog.

Curriculum: Master of Science in Clinical Investigation and Development

REQUIRED COURSES	TITLE	CREDIT HOURS		
PSB 760	Fundamentals of Pharmaceuticals	3		
PSB 764	Clinical Research Protocol Design and Research Methodology	3		
PSB 765	Clinical Research Coordination	3		
PSB 773	Pharmacovigilance	3		
PSB 856J	GCP, GLP, and GMP	3		
PSB 885	Capstone		3	
DRA 804	FDA and Regulatory Affairs	3		
DRA 807	Statistics in Clinical Research	3		
DRA 808	Protection of Human Research Subjects	3		
DRA 809	Health Epidemiology	3		
TOTAL				30

Approved Elective courses

COURSE	TITLE	CREDIT HOURS
DRA 802	Law and Health Policy of Drugs and Devices	3
DRA 817	Development and Production of Medical Devices	3
DRA 818	The Law of Healthcare Compliance	3
PEP 807	Introduction to Health Economics and Outcomes Research	3
PEP 825	Health Service and Outcome Research	3
PSB 870	Practicum in Pharmaceutical, Regulatory and Applied Sciences	1-3
PSB 732	Graduate Directed Study	3
PSB 763	Chemistry, Manufacturing, and Controls	3

***The two required electives may be taken during any semester. **For a full-time schedule, students can take up to four courses in the fall and spring and up to two courses in the summer to complete the program in 3-4 semesters.*

Total credits: 36 credit hours

Master of Science in Clinical Research (Boston and Online)

The Master of Science in Clinical Research program offers academic training in clinical research to candidates who have attained a prior baccalaureate degree or equivalent professional degree. The program is geared toward students who plan to develop, conduct, and monitor clinical trials or toward students in allied fields within the industry who desire a working knowledge of the field of clinical research. Course material is applicable for career opportunities in either the hospital-based/clinical care setting or the bio/pharmaceutical/medical device industry. The program can be completed as a part-time or full-time student, and all required courses can be taken either onsite or online.

The 30-semester-hour program consists of eight required courses and two elective courses. The elective courses are intended to allow students to focus on either a patient-based clinical research track or an industry-related track. As part of MCR 804 Capstone course, students will complete a capstone project which involves written submission and oral presentation of a clinical research protocol developed by the student and mentored by the course instructor and an assigned research mentor.

The broad focus of the program, including bioethics and regulations, product (drug, device, biologic, etc.) development, biostatistics, research methodology, protocol design, proposal development, clinical trial management, and regulatory affairs, is designed to address the educational needs of many different career paths within the pharmaceutical healthcare field.

Program Objectives and Outcomes

Upon successful completion of this program, a graduate with a Master of Science in Clinical Research should be able to:

- Describe the steps of pre-clinical and clinical drug development;
- Explain how pharmaceutical and medical device research and development has changed over time;
- Describe the elements required to develop a scientifically sound clinical protocol or research proposal;
- Assess the process required to develop a feasible and relevant clinical research question/scientific hypothesis;

- Construct the eligibility criteria (inclusion and exclusion criteria) for a disease specific population for a clinical research study;
- Determine sample sizes for clinical research studies of simple design and understand ingredients in the sample size determination for more complex designs, including clinical outcome trials and non-inferiority studies;
- Identify basic characteristics of a clinical research study and describe the advantages and disadvantages of randomized clinical studies as compared to other epidemiological and clinical investigations;
- Propose a study plan (treatment and endpoints) for a disease specific clinical study;
- Select the appropriate methodology and design for a study based on specified study requirements and objectives;
- Assess the opportunities for bias in a clinical research study and develop a study design to prevent the bias;
- Discuss examples of misconduct and fraud and their implications in clinical research;
- Design a proposal for financial support of a research initiative;
- Describe the specific design issues required for research studies involving unique patient populations (ex. dementia, dermatology, elderly, pediatric);
- Describe the different types of human pharmacology studies;
- Develop a clinical research study hypothesis and design applying skills learned in the program to submit a final written draft of a clinical study protocol to an IRB;
- Construct randomization schedules and develop procedures for carrying out randomization;
- Determine when pre-stratified designs should be used and differentiate pre from post-stratification;
- Understand considerations in defining control groups for clinical research studies, including the use of placebos;
- Identify the advantages and disadvantages of different types of endpoints for clinical research studies, and the importance of pre-specifying study estimates of interest;
- Recognize the regression to the mean phenomenon and how to minimize its effect.
- Recognize the advantages and disadvantages of different types of study designs, including crossover and factorial studies, pragmatic versus explanatory studies, point of care randomization studies, and biomarker validation studies;
- Write the statistical design and data analysis section of a protocol and identify special requirements of collaborative studies, their organization and operation;
- Determine data collection requirements and quality assurance procedures for clinical studies, including procedures to minimizing missing outcome data;
- Understand the advantages of intent-to-treat analysis and to differentiate it from analyses such as “on treatment” and “per protocol” analyses; and
- Recommend a plan for interim analyses for clinical research studies and understand the role of independent Data Monitoring Committees.

Degree Requirements

Successful completion of a minimum of 30 credit hours at the graduate level.

Maintenance of a cumulative GPA of 3.0 for all coursework taken at the University. B is the minimum passing grade in all courses counting toward the degree.

Successful completion of all requirements for the MS degree, within a period of four years.

Curriculum: Master of Science in Clinical Research

REQUIRED COURSES	TITLE	CREDIT HOURS
MCR 801	Pharmaceutical R&D: From Discovery to Market	3
MCR 802	Research Methodology & the Development of Protocols	3
MCR 803	Conducting Clinical Research Studies	3
MCR 804*	Graduate Project in Clinical Research	3
DRA 804	FDA and Regulatory Affairs	3
DRA 807	Statistics in Clinical Research	3
DRA 808	Protection of Human Research Subjects	3
DRA 809	Health Epidemiology	3
TOTAL		24

**courses includes capstone project*

Approved Elective courses

COURSE	TITLE	CREDIT HOURS
DRA 802	Law and Health Policy of Drugs and Devices	3
DRA 811	Health Policy Development and Analysis	3
DRA 815	International Regulatory Affairs	3
DRA 816	Principles of Quality Assurance and Control	3
DRA 817	Development and Production of Medical Devices	3
PEP 801	Quantitative Methods in Pharmaceutical Economics and Policy	3
PEP 802	Comparative Pharmaceutical Healthcare Systems	3
PEP 803	Qualitative & Survey Methods in Pharmaceutical Economics & Policy	3
PEP 804	Regression Analysis in Pharmaceutical Economics and Policy	3
PEP 806	Pharmacoepidemiology Applications	3
PEP 811	Pharmaceutical Marketing Applications	3
PEP 812	Healthcare Management Applications	3
PEP 809	Statistical Programming Using SAS	3
PEP 807	Introduction to Health Economics and Outcomes Research	3
PEP 808	Meta-analysis Applications	3
PSB 870	Practicum in Pharmaceutical, Regulatory and Applied Sciences	1-3
PBH 701	Foundations Grad Study in Public Health	2
PBH 705	Introduction to Environmental Health Sciences	3
PBH 710	Policy and Leadership to Adv Hlth Eq	3
PBH 715	Introduction to Social and Behavioral Sciences	3
PBH 750	Community Health Science and Practice	3
PBH 755	Health Promotion and Education	3
PBH 805	Maternal and Child Health	3
PBH 810	Principles of Public Health Emergency Preparedness	3
PBH 815	Mass Communication and Health	3
PBH 820	Genetics and Public Health	3

***The two required electives may be taken during any semester. **For a full-time schedule, students can take up to four courses in the fall and spring and up to two courses in the summer to complete the program in 3-4 semesters.*

Total credits: 30 credit hours

Curriculum: Bachelor of Science in Medical and Molecular Biology/Master of Science in Clinical Research

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3

LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
SSC	Social Science Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
BIO	Biology (BIO) Elective	3
HUM	Humanities (HUM) Elective	3
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
BEH	Behavioral Science (BEH) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
BEH	Behavioral Science (BEH) Elective	3
HUM	Humanities (HUM) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
BIO	Biology (BIO) Electives	6
	General Electives	7
MCR 801	Pharma R&D: From Discovery to Market	3
TOTAL		13

Year IV — spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
BIO	Biology (BIO) Electives	3
	General Electives	7
DRA 807	Statistics in Clinical Research	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
MCR 802	Research Methodology & Development of Protocol	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
MCR 803	Conducting Clinical Research Studies	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
MCR 804	Graduate Project in Clinical Research	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 150 credit hours

Graduate Certificate in Clinical Research (Boston and Online)

The graduate certificate program is open to applicants who desire advanced study in clinical research without a commitment to a Masters degree program. This certificate complements degrees such as nursing, pharmacy, and public health. The graduate certificate requires three courses and may be completed in less than one year.

Admission requirements are more flexible than those of the degree program. A minimum grade of B in each course is required for awarding of the certificate.

Curriculum: Graduate Certificate in Clinical Research

REQUIRED COURSES	TITLE	CREDIT HOURS
MCR 802	Research Methodology and the Development of Protocols and Proposals	3
MCR 803	Conducting Clinical Research Studies	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		9

Master of Science in Clinical Research/Graduate Certificate in Health Policy or Regulatory Affairs (Boston and Online)

Students enrolled in the Master of Science Clinical Research program may enroll in the Graduate Certificate programs in Health Policy or Regulatory Affairs. These students must complete the three courses required by the certificate program in addition to the 30 credits for their Masters program for a total of 39 credits. Current graduate students interested in applying for the certificate program should contact the certificate program director.

Master of Science in Medicinal Chemistry

Advanced degrees in chemistry provide a student with a more thorough knowledge of the behavior of chemical substances at the molecular level. The composition of molecules and their interactions in both a chemical and a physical sense are studied, with the aim of predicting the behavior and properties of new substances. A fundamental understanding of the properties of chemical substances finds application in most frontier areas of biologically related scientific research being conducted in industrial, government, and academic laboratories. Programs in chemistry lead to the MS and PhD degrees.

Program Learning Objectives

Upon successful completion of the MS program in Medicinal Chemistry, a graduate will be able to:

- Describe the biological interactions of synthetic and naturally occurring drugs to their respective targets;
- Describe the pharmacological actions of such substances and how changing structural, stereochemical, and physical parameters leads to improved drug design;
- Provide rational synthetic design routes to potential new active pharmaceutical agents;
- Interpret and communicate research findings from contemporary scientific literature.

Admission to the chemistry graduate programs requires an undergraduate degree in pharmacy, chemistry, or biology that includes two semesters each of general, organic, and analytical chemistry (one semester of which must include instrumental analysis); physical chemistry; calculus; and physics. Students without these prerequisites may be required to complete American Chemical Society proficiency examinations in general, organic, and/or analytical chemistry during the first semester.

Medicinal chemistry is concerned with the study of those structural, stereochemical, and physical parameters that affect the biological interaction of synthetic and naturally occurring drugs at the molecular level. Research is directed toward a fuller understanding of the pharmacological actions of such substances, leading to improved drug design. Specialization in these programs requires a broad knowledge of organic and heterocyclic chemistry, pharmacy, spectroscopic instrumentation, and pharmacology. Ongoing research programs include the synthesis and evaluation of antiviral and anticancer drugs, the synthesis of new laser dyes, and the isolation and characterization of natural products from plants.

Curriculum: Master of Science Degree in Medicinal Chemistry

Year I - fall

COURSES	TITLE	CREDIT HOURS
PSB 718	Drug Discovery and Development	3
CHE 731	Adv Organic Chem	4
CHE 714	Spectroscopic Analysis	3
PSB 819	Graduate Seminar	0
TOTAL		10

Year I - spring COURSES	TITLE	CREDIT HOURS
PSB 851	Bio-organic Chem	2
PSB 820	Advanced Medicinal Chemistry I	3
PSB 819	Graduate Seminar	1
	Elective	3
TOTAL		9
Year II - fall COURSES	TITLE	CREDIT HOURS
PSB 802	Chemistry of Macromolecules	3
PSB 815	Drug Metabolism	3
	Elective	2
PSB 819	Graduate Seminar	1
TOTAL		9
Year II -spring COURSES	TITLE	CREDIT HOURS
	PSB Elective	3
PSB 819	Graduate Seminar	0
TOTAL		3

Total credits to complete degree requirements: 31 credit hours

Master of Science - Thesis / Doctor of Philosophy in Medicinal Chemistry

Curriculum: Master of Science Degree in Medicinal Chemistry - Thesis

Year I - fall COURSES	TITLE	CREDIT HOURS
PSB 718	Drug Discovery and Development	3
CHE 731	Advanced Organic Chemistry	4
CHE 714	Spectroscopic Analysis	3
PSB 819	Graduate Seminar	0
TOTAL		10
Year I - spring COURSES	TITLE	CREDIT HOURS
PSB 851	Bio-organic Chemistry	2
PSB 820	Advanced Medicinal Chemistry I	3
PSB 819	Graduate Seminar	1
PSB 818L	Laboratory Rotation	1
PSB 880	Research	1
TOTAL		8
Year II - fall COURSES	TITLE	CREDIT HOURS
PSB 802	Chemistry of Macromolecules	3
PSB 815	Drug Metabolism	3
PSB 819	Graduate Seminar	1
PSB 880	Research	2
TOTAL		9

Year II - spring

COURSES	TITLE	CREDIT HOURS
PSB 819	Graduate Seminar	0
PSB 880	Research	3
TOTAL		3

Total credits to complete Master's degree requirements: **30 credit hours**

Doctor of Philosophy in Medicinal Chemistry

Program Learning Objectives

Upon successful completion of the PhD program in Medicinal Chemistry, in addition to the *MS Program Learning Objectives* listed above, a graduate will be able to:

- Independently plan, design, and conduct experiments towards the development of new active pharmaceutical agents towards existing or novel targets;
- Communicate original research findings in oral and written formats.

Curriculum: Doctor of Philosophy* in Medicinal Chemistry Program

COURSE	TITLE	CREDIT HOURS
PSB 821	Advanced Medicinal Chemistry II	3
PSB 822	Advanced Medicinal Chemistry III	3
	Electives	6
PSB 819	Graduate Seminar	1
PSB 880	Research	7
TOTAL		20

Total credits to complete PhD degree requirements: 20 credit hours

** For entry to the PhD program, students must successfully complete a medicinal chemistry comprehensive exam administered by the Medicinal Chemistry faculty.*

Total credits to complete the MS and PhD degree requirements: minimum 50 credit hours

Suggested Elective Courses for MS and PhD Programs in Medicinal Chemistry

COURSE	TITLE	CREDIT HOURS
CHE 717	Instrumental Analysis (with lab)	4
CHE 719	Synthetic Preparations (with lab)	3
CHE 755	Stereochemistry	3
MAT 763	Advanced Statistics	3
PSB 732	Graduate Directed Study	3
PSB 860	Chromatography	2
PSB 861	Chromatography Laboratory	1
PSB 872	Special Problems	1–2

Master of Science / Doctor of Philosophy in Pharmaceutical Economics and Policy

The graduate program in Pharmaceutical Economics and Policy (PEP) offers a Master of Science (MS) and a Doctor of Philosophy (PhD) in Pharmaceutical Health Economics and Policy with specialty tracks or concentrations in Health and Pharmacoepidemiology and Health Economics and Outcomes Research. Two graduate certificates are also offered in Health and Pharmacoepidemiology and in Health Economics and Outcomes Research. This graduate program offers academic training primarily in the areas of pharmaceutical and health economics and drug and health policy, and also provides related training in outcomes research, regulation, marketing, healthcare administration, pharmacy services research, and pharmacoepidemiology.

The curriculum features advanced didactic and experiential education in the areas of pharmacoeconomic and health policy analysis, pharmacoepidemiologic methods and study designs, advanced biostatistics and database management, health policy and behavioral interventions and their assessment, and the role of pharmaceuticals and medical devices in healthcare and society. The program provides future leaders, educators, and researchers with the knowledge required to enhance access for patient populations to cost-effective pharmaceuticals, biologics, medical devices, and related health services, thus improving the efficiency of the pharmaceutical sector and healthcare systems. Graduates will be prepared for careers in the pharmaceutical, biotechnology, and medical device industries; hospitals and other healthcare organizations; managed care organizations; pharmacy benefits management; contract research organizations; consulting firms; governments; international organizations; nongovernmental organizations; and academic institutions, among other organizations.

Master of Science (MS) in Pharmaceutical Economics and Policy

The Master of Science in Pharmaceutical Economics and Policy (PEP) provides a flexible curriculum for advanced training in pharmaceutical economics and policy, and pharmacy administration. Focus areas of the Master of Science program include pharmaceutical economics and policy, global drug policy, pharmacoeconomics and outcomes research, health epidemiology, pharmacoepidemiology, and pharmacy management. The MS Program allows for either a Thesis or Non-Thesis option. The non-thesis MS is also offered as an online degree option, intended primarily for part-time students.

Program Objectives

Upon successful completion of the MS program in PEP, a graduate should be able to:

- Assess the appropriateness of research designs for health care interventions for comparative effectiveness, policy analyses, and health economic evaluations
- Apply and interpret the results of statistical, epidemiologic and health economic analyses/evaluations
- Effectively synthesize evidence to inform key stakeholders including industry, regulators, and policy makers
- Analyze the structure and functions of U.S. and international health care systems, focusing on finance and delivery.

Admission Requirements

- PharmD or Bachelor of Science in Pharmacy, Bachelor's degree in a related area (e.g., economics, sociology, or statistics) or a professional degree in medicine, dentistry, nursing, public health, or healthcare administration from an accredited college or university.
- TOEFL or IELTS, required of all applicants for whom English is not the primary spoken language. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States or have an earned degree (bachelor's or higher) from a U.S. college or university.
- Minimum grade point average (GPA) of 3.0 on a 4.0 scale

Degree Requirements (On campus program)

- Successful completion of a minimum of 36 credit hours at the graduate level.
- Maintenance of a cumulative GPA of 3.0 for all coursework taken at the University. The minimum grade for passing a course is B.
- Successful completion of at least one continuous academic year in residence at the University.
- Successful completion of all requirements for the Master of Science degree within a period of four years, including successful completion of the capstone project. On an exception basis, with the approval of the faculty advisor, a student may undertake a thesis in lieu of the capstone project. Thesis students will take two semesters of the Graduate Seminar along with PEP.880 (4 credit hours).
- Students currently enrolled in the PEP Master of Science program may apply to the PhD program for admission after they complete their MS program. A MS thesis is not required for admission into the PhD program.

Degree Requirements (Online program)

- Successful completion of a minimum of 36 credit hours at the graduate level.
- Maintenance of a cumulative GPA of 3.0 for all coursework taken at the University. The minimum grade for passing a course is B.
- Successful completion of all requirements for the Master of Science degree within a period of four years, including successful completion of the capstone project.

Curriculum: Master of Science (MS) in Pharmaceutical Economics and Policy (On campus)

Year I — fall

COURSE	TITLE	CREDIT HOURS
PEP 801	Quantitative Methods in Pharmaceutical Economics and Policy	3
DRA 809	Health Epidemiology	3
PEP 802	Comparative Pharmaceutical Healthcare Systems	3
PEP 807	Introduction to Health Economics and Outcomes Research	3
PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		13

Year I — spring

COURSE	TITLE	CREDIT HOURS
PEP	Electives	6
PEP 804	Regression Analysis in Pharmaceutical Economics and Policy	3
PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		10

Year II — fall

COURSE	TITLE	CREDIT HOURS
PEP 820	Market Access Pricing and Reimbursement	3
	Elective	3
	Elective	3
PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		10

Year II — spring

COURSE	TITLE	CREDIT HOURS
PEP 840A	Capstone: Data Analysis and Presentation Capabilities in PEP	3
TOTAL		3

Total credits to complete degree requirements: 36 credit hours

Master of Science in Pharmaceutical Economics and Policy (Online, non-thesis program)

Online program requirements are identical to those above for the on-campus Master non-thesis program except that:

- the courses will generally be taken in a less concentrated manner (e.g. 2 per term) and in all cases, a student's program should start with PEP 802
- courses will be offered in the summer term, enabling completion of the program in 2 calendar years
- the non-thesis 3 credits of seminar requirement is substituted by an additional 3 credit elective

Electives for all Master of Science Degrees

COURSE	TITLE	CREDIT HOURS
PEP 806	Pharmacoepidemiology Applications	3
PEP 813	Pharmacoeconomic Applications	3
PEP 814	Healthcare Decision Analysis	3
PEP 825	Health Services and Outcomes Research	3

PEP 809	Statistical Programming Using SAS	3
PEP 808	Meta-analysis Applications	3
PEP 830	Practicum Pharm Business and Administrative Internships	1-2
PEP 831	Health Related Quality of Life	3
PEP 899	Selected Topics in Pharmaceutical Economics and Policy	1-3

Graduate Certificate in Health and Pharmacoepidemiology

Curriculum: Graduate Certificate in Health and Pharmacoepidemiology (3 courses required)

COURSE	TITLE	CREDIT HOURS
PEP 801	Quantitative Methods in Pharmaceutical Economics and Policy	3
DRA 809A/O	Health Epidemiology	3
PEP 808	Meta-analysis Applications (elective) OR	3
PEP 825	Health Services Outcomes Research (elective)	3
TOTAL		9

Graduate Certificate in Health Economics and Outcomes Research

Curriculum: Graduate Certificate in Health Economics and Outcomes Research (3 courses required)

COURSE	TITLE	CREDIT HOURS
PEP 807	Introduction to HEOR	3
DRA 809A/O	Health Epidemiology	3
PEP 820	Market Access Pricing and Reimbursement	3
TOTAL		9

Doctor of Philosophy (PhD) in Pharmaceutical Economics and Policy

The Doctor of Philosophy (PhD) in Pharmaceutical Economics and Policy is designed to train independent researchers who will assume leadership positions in national and international pharmaceutical economics and policy careers, with focus areas in pharmaceutical economics and policy, global drug policy, and pharmacoeconomics and outcomes research.

Program Objectives

- Upon successful completion of the PhD program in PEP, *in addition to the MS Program Objectives listed previously*, a graduate should be able to work independently in:
- Plan, design and conduct studies to assess comparative clinical and economic value of health care interventions;
- Disseminate one's original research through publications, presentations and other professional forums;
- Demonstrate expertise such that one would be able to teach at a University level.

Admission Requirements

- PharmD or an earned master's degree or higher degree in a related area (e.g., economics, sociology, or statistics), or a professional degree in medicine, dentistry, nursing, public health, or healthcare administration from an accredited college or university. Students currently enrolled in the PEP Master of Science program may apply to the PhD program for admission after they complete their MS program. A MS thesis is not required for admission into the PhD program;
- TOEFL or IELTS, required of all applicants for whom English is not the primary spoken language. This test requirement may be waived on an individual basis for applicants who have attended all four years of high school in the United States or have an earned degree (bachelor's or higher) from a U.S. college or university;
- Minimum grade point average (GPA) of 3.0 on a 4.0 scale;
- Official Graduate Record Exam (GRE), General Exam scores must be submitted as part of the Admissions Process.

Degree Requirements

- Successful completion of a minimum of 50 credit hours at the graduate level, including a minimum of 4 credit hours in dissertation research and a minimum of 15 credit hours in a specialty track or area of concentration. Four semesters of Graduate Seminar are required. A student who has earned an MS degree from another institution or program must complete a minimum of 40 credit hours in addition to the other requirements of the PhD program;
- Maintenance of a cumulative GPA of 3.0 for all coursework taken at the University. The minimum grade for passing a course is B;
- Successful completion of qualifying examinations;
- Presentation of a dissertation that is a contribution of unique knowledge to the discipline and that has been openly defended and approved by the student's Graduate Advisory Committee;
- Completion of at least one continuous academic year in residence at the University conducting dissertation research;
- Completion of all requirements for the PhD degree within a period of six years

Curriculum: Doctor of Philosophy (PhD) in Pharmaceutical Economics and Policy

Year I - fall

COURSE	TITLE	CREDIT HOURS
PEP 801	Quantitative Methods in Pharmaceutical Economics and Policy	3
DRA 809	Health Epidemiology	3
PEP 802	Comparative Pharmaceutical Healthcare Systems	3
PEP 807	Introduction to Health Economics and Outcomes Research	3
PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		13

Year II - spring

COURSE	TITLE	CREDIT HOURS
PEP 814	Healthcare Decision Analysis	3
PEP 825	Health Services and Outcomes	3
PEP 804	Regression Analysis in Pharmaceutical Economics and Policy	3

PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		10

Year II - fall

COURSE	TITLE	CREDIT HOURS
PEP 806	Pharmacoepidemiology Applications	3
PEP 813	Pharmacoeconomic Applications	3
PEP 820	Market Access Pricing and Reimbursement	3
TOTAL		9

Year II - spring

COURSE	TITLE	CREDIT HOURS
PEP 831	Health Related Quality of Life & Patient Reported Outcomes	3
PEP 808	Meta-Analysis Applications	3
	Elective	3
TOTAL		9

Year III - fall

COURSE	TITLE	CREDIT HOURS
PEP	Elective	3
PEP 890	PhD Dissertation in Research in PEP	1
PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		5

Year III - spring

COURSE	TITLE	CREDIT HOURS
PEP 890	PhD Dissertation in Research in PEP	1
PEP 870	Graduate Seminar in Pharmaceutical Economics and Policy	1
TOTAL		2

Year IV - fall

COURSE	TITLE	CREDIT HOURS
PEP 890	PhD Dissertation in Research in PEP	1
TOTAL		1

Year IV - spring

COURSE	TITLE	CREDIT HOURS
PEP 890	PhD Dissertation in Research in PEP	1
TOTAL		1

Total credits to complete degree requirements: 50 credit hours

Electives to choose from:

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
PEP 809	Statistical Programming Using SAS	3
PEP 830	Practicum Pharm Business and Administrative Internships	1-2
(1 or 2 credit hours; up to maximum 3 total credit hours may be counted toward the degree if not already counted for a previous MS in PEP)		
PEP 899	Selected Topics In Pharmaceutical Economics and Policy	1-3

Master of Science in Pharmaceutics

Master of Science (MS) and Doctor of Philosophy (PhD) programs in Pharmaceutics are intended to prepare students for positions of responsibility in education, government, and the pharmaceutical industries. The programs are designed to provide an appropriate balance between the theoretical and practical aspects of the area of specialization, which enables the student to be immediately productive yet prepared for future growth and development.

Program Learning Objectives
Upon successful completion of the MS program in Pharmaceutics, a graduate will be able to:

- Describe how the physicochemical properties of potential drug molecules are studied to support formulation development;
- Describe various pharmaceutical dosage forms, with an understanding of drug dissolution, drug absorption, bioavailability, and pharmacokinetics;
- Describe how the physicochemical properties of pharmaceutical formulations in development are studied to support preclinical testing;
- Interpret and communicate research findings from contemporary scientific literature.

Admission to the pharmaceutics graduate programs requires an undergraduate degree in pharmacy, chemistry, or biology that includes two semesters each of general, organic, and analytical chemistry (one semester of which must include instrumental analysis); physical chemistry; calculus; and physics. Holders of undergraduate degrees in nonpharmacy areas are required to complete the following pharmacy courses for no credit: Physical Pharmacy, Dosage Forms, Biopharmaceutics, and Pharmacokinetics.

The student is exposed to a broad range of theory and concepts, intended to promote a firm understanding of the materials and technologies associated with pharmaceutical product development, manufacture, and evaluation. The program encompasses the study of pharmaceutical dosage forms, the release of a drug from the dosage form, drug dissolution, drug absorption, bioavailability, and pharmacokinetics. Pharmacokinetics involves the study of the rates of drug absorption, distribution, and elimination, and the quantitative relationship of these rates to drug therapy and/or toxicity.

Research projects have typically involved development of new drug products, novel dosage forms, the release of a drug from new dosage forms, preformulation investigation of new drug entities, and pharmacokinetics.

Curriculum: Master of Science in Pharmaceutics

Year I – fall

COURSE	TITLE	CREDIT HOURS
PSB 825	Controlled Drug Delivery	3
PSB 808	Advanced Physical Pharmacy	3
MAT 763	Advanced Statistics	3
PSB 819	Graduate Seminar	0
TOTAL		9

Year I - spring

COURSE	TITLE	CREDIT HOURS
PSB 826	Novel Drug Delivery	3
	Elective	3
	Elective	3
PSB 819	Graduate Seminar	1
TOTAL		10

Year II - fall

COURSE	TITLE	CREDIT HOURS
PSB 835	Advanced Pharmacokinetics	3
	Elective	3
	Elective	3
	PSB Graduate Seminar	0
TOTAL		9

Year II - spring

COURSE	TITLE	CREDIT HOURS
PSB	Elective	3
PSB 819	Graduate Seminar	1
TOTAL		4

Total credits to complete degree requirements: **32 credit hours**

Master of Science - Thesis / Doctor of Philosophy in Pharmaceutics

Master of Science in Pharmaceutics – Thesis

Curriculum: Master of Science in Pharmaceutics - Thesis

Year I - fall

COURSE	TITLE	CREDIT HOURS
PSB 825	Controlled Drug Delivery	3
PSB 808	Advanced Physical Pharmacy	3
MAT 763	Advanced Statistics	3
PSB 819	Graduate Seminar	0
TOTAL		9

Year I - spring

COURSE	TITLE	CREDIT HOURS
PSB 826	Novel Drug Delivery	3
	Elective	3
PSB 819	Graduate Seminar	1
PSB 818L	Laboratory Rotation	1
PSB 880	Research	1
TOTAL		9

Year II - fall

COURSE	TITLE	CREDIT HOURS
PSB 835	Advanced Pharmacokinetics	3
	Elective	3
PSB 819	Graduate Seminar	0
PSB 880	Research	2
TOTAL		8

Year II - spring

COURSE	TITLE	CREDIT HOURS
PSB 819	Graduate Seminar	1
PSB 880	Research	3
TOTAL		4

Total credits to complete degree requirements: 30 credit hours

Doctor of Philosophy (PhD) in Pharmaceutics

Program Learning Objectives
Upon successful completion of the PhD program in Pharmaceutics, in addition to the *MS Program Learning Objectives* listed above, a graduate will be able to:

- Independently plan, design, and conduct experiments to study the physicochemical properties of potential drug molecules and the properties of pharmaceutical formulations;
- Communicate original research findings in oral and written formats.

In addition to the Master of Science degree requirements, PhD students must complete the following required courses:

COURSE	TITLE	CREDIT HOURS
	Electives	12
PSB 819	Graduate Seminar	1
PSB 880	Research	7

Total credits to complete degree requirements: 20 credit hours

** Time and credit approved by major professor*

Total credits to complete degree requirements: 50 credit hours

NOTE: A minimum of one semester of physical chemistry (thermodynamics and kinetics) is required prior to acceptance. CHEM 331 Thermodynamics and Kinetics, or its equivalent, may be taken concurrently at Simmons University without graduate credit.

Elective Courses for Master of Science and PhD Programs

COURSE	TITLE	CREDIT HOURS
PSB 732	Graduate Directed Study	3
PSB 807	Unit Operations	3
PSB 815	Drug Metabolism	3
PSB 822	Enzyme Kinetics	2
PSB 875	Pharmaceutical Dosage Forms Design	3
PSB 840	Advanced Biopharmaceutics	3
PSB 860	Chromatography	2
PSB 861	Chromatography Laboratory	1

Electives in other appropriate subject areas may be taken with the approval of the major advisor. Suggested minors are Analytical Chemistry, Business Administration, or Drug Regulatory Affairs.

Master of Science in Pharmacology

Pharmacology is the medical science that involves all facets of the action of drugs and environmental chemicals on biological systems and their constituent parts. This includes everything from the intermolecular reactions of chemical compounds within a cell to the evaluation of the effectiveness of a drug in the prevention, treatment, or diagnosis of human disease. Pharmacology offers unique opportunities to contribute to the knowledge, well-being, and survival of mankind.

Program Learning Objectives
Upon successful completion of the MS program in Pharmacology, a graduate will be able to:

- Describe the action of drugs and/or environmental chemicals on biological systems and their constituent parts;
- Describe the intermolecular reactions of chemical compounds within a cell;
- Describe the mechanism of a drug in the prevention or treatment of a human disease.
- Interpret and communicate research findings from contemporary scientific literature.

Admission to the Pharmacology graduate program requires an undergraduate degree in pharmacy, chemistry, or biology. While formal training in pharmacology and human physiology at the undergraduate level is helpful, it is not required for admission. Students who are deficient in these areas are required to audit the undergraduate course sequences in pharmacology / medicinal chemistry and/or physiology.

Programs leading to the degrees of Master of Science and PhD are offered for graduate study in pharmacology. Each comprises two major components: (1) coursework in specific disciplines such as pharmacology, physiology, biochemistry, medicinal chemistry, and related disciplines, and (2) training in research and the scientific method.

The programs prepare students for positions of leadership and responsibility in academic, industrial, and government settings. Theoretical and experiential situations in which pharmacological information may be applied are provided to help students develop an innovative and creative approach to problem solving.

Curriculum: Master of Science in Pharmacology

Year I - fall COURSE	TITLE	CREDIT HOURS
PSB 712	Systems Pharmacology	3
PSB 841	Receptor Pharmacology	3
MAT 763	Advanced Statistics	3
PSB 819	Graduate Seminar	0
TOTAL		9

Year I - spring COURSE	TITLE	CREDIT HOURS
PSB 713	Systems Pharmacology II	3
PSB 847	Graduate Biochemistry	3
PSB 819	Graduate Seminar	1
	Elective	3
TOTAL		10

Year II - fall COURSE	TITLE	CREDIT HOURS
PSB 815	Drug Metabolism	3
	PSB Elective	3
PSB 819	Graduate Seminar	0
	Elective	3
TOTAL		9

Year II - spring COURSE	TITLE	CREDIT HOURS
PSB 819	Graduate Seminar	1
	Elective	3
TOTAL		4

Total credits to complete degree requirements: 32 credit hours

Curriculum: Bachelor of Science in Medical and Molecular Biology/Master of Science in Pharmacology

Year I — fall COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
SSC	Social Science (SSC) Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
BIO	Biology (BIO) Elective	3
HUM	Humanities (HUM) Elective	3
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
BEH	Behavioral Science (BEH) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
BEH	Behavioral Science (BEH) Elective	3
HUM	Humanities (HUM) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
BIO	Biology (BIO) Electives	6
	General Electives	7
MAT 763	Advanced Statistics	3
TOTAL		16

Year IV — spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
BIO	Biology (BIO) Electives	3
	General Electives	7
PSB 847	Graduate Biochemistry	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
PSB/DRA/MCR	Graduate Elective	3
PSB/DRA/MCR	Graduate Elective	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
PSB 712	Systems Pharmacology I	3
PSB 841	Receptor Pharmacology	3
PSB 815	Drug Metabolism	3
PSB 819	Seminar	0
TOTAL		9

Year I — spring

COURSE	TITLE	CREDIT HOURS
PSB 713	Systems Pharmacology II	3
PSB	Graduate PSB Elective	3
PSB/DRA/MCR	Graduate Elective	3
PSB 819	Seminar	1
TOTAL		10

Total credits to complete BS and MS degree requirements: 151 credit hours

Master of Science - Thesis / Doctor of Philosophy in Pharmacology

Curriculum: Master of Science in Pharmacology - Thesis

Year I - fall

COURSE	TITLE	CREDIT HOURS
PSB 712	Systems Pharmacology I	3
PSB 841	Receptor Pharmacology	3
MAT 763	Advanced Statistics	3
PSB 819	Graduate Seminar	0
TOTAL		9

Year I - spring

COURSE	TITLE	CREDIT HOURS
PSB 713	Systems Pharmacology II	3
PSB 847	Graduate Biochemistry	3
PSB 819	Graduate Seminar	1

PSB 818L	Laboratory Rotation	1
PSB 880	Research	1
TOTAL		9

Year II - fall

COURSE	TITLE	CREDIT HOURS
PSB 815	Drug Metabolism	3
	Elective	3
PSB 819	Graduate Seminar	0
PSB 880	Research	2
TOTAL		8

Year II - spring

COURSE	TITLE	CREDIT HOURS
PSB 819	Graduate Seminar	1
PSB 880	Research	3
TOTAL		4

Total credits to complete degree requirements: 30 credit hours

Doctor of Philosophy (PhD) in Pharmacology

Program Learning Objectives

Upon successful completion of the PhD program in Pharmacology, in addition to the *MS Program Learning Objectives* listed above, a graduate will be able to:

- Independently plan, design, and conduct experiments towards the evaluation of existing or new drugs towards existing or novel targets;
- Communicate original research findings in oral and written formats.

In addition to the MS degree requirements, PhD students must complete the following required courses:

Additional Courses for PhD

COURSE	TITLE	CREDIT HOURS
PSB 835	Advanced Pharmacokinetics	3
	Graduate Electives	9
PSB 819	Graduate Seminar	1
PSB 880	Research	7
TOTAL		20

Total Credits: 20 credits

Total credits to complete degree requirements: 50 credit hours

Elective courses listed for the MS program also are applicable to the doctoral program. Students may select courses from other areas with the approval of their major advisor. Suggested minors are Biochemistry, Medicinal Chemistry, or Pharmaceutics.

Elective Courses for Master of Science and PhD Programs

COURSE	TITLE	CREDIT HOURS
BIO 734	Immunology	3
CHE 717	Instrumental Analysis	4
CHE 731	Advanced Organic Chemistry	4
PSB 715	Clinical Toxicology	3
PSB 732	Graduate Directed Study	3
PSB 802	Chemistry of Macromolecules	3
PSB 843	Advanced Pharmacology-Neuropharmacology	1
PSB 860	Chromatography	2
PSB 861L	Chromatography Laboratory	1
PSB 872	Special Problems (PhD program only)	1–2

Additional electives may be selected from other appropriate graduate courses with the approval of the major advisor and the course instructor.

Master of Science in Regulatory Affairs and Health Policy (Boston and Online)

The University offers a Master of Science degree in Regulatory Affairs and Health Policy (MS in RAHP), and two graduate certificate programs, one in Regulatory Affairs and the other in Health Policy.

The MS in RAHP offers academic training in the law and regulation of healthcare, drugs, devices; and health policy to candidates having attained a prior baccalaureate degree or equivalent professional degree. Candidates for this program are those interested in pursuing careers in regulatory affairs, project/product management, clinical development, marketing, quality assurance, quality control, and manufacturing, or with federal or state healthcare regulatory agencies, clinical research organizations, managed care, or other health-related fields where knowledge of the regulatory and legal environment is a prerequisite. In addition to the general MS degree requirements described in the MCPHS course catalog, the program may establish additional requirements.

Although the primary emphasis of this program is placed on regulatory affairs, other components such as ethics, policy development, policy analysis, and law are also explored. The program aims to educate a broad range or professionals who are interested in developing expertise in regulatory and policy education.

Program Objectives and Outcomes

Upon successful completion of this program, a graduate with a Master of Science in Regulatory Affairs and Health Policy should be able to

- develop a strategy for a medical product that addresses regulatory, financial, clinical, and ethical requirements;
- evaluate and deconstruct regulatory and policy issues concerning pharmaceuticals, medical devices, biologics, or healthcare in an industry or government workplace;
- provide regulatory guidance and technical support (e.g., on FDA compliance) to members of the healthcare industry and/or regulatory agencies;
- assist pharmaceutical companies in their efforts to gain FDA marketing approval of drugs, medical devices, and biologics by drawing on a comprehensive knowledge base of regulation and policy;
- assist regulatory agencies in developing, analyzing, and evaluating healthcare related policy and regulation;
- assist regulatory agencies in evaluating new or existing drugs and medical devices for marketing approval;
- develop, coordinate, and implement drug, device, or healthcare regulatory schema or policy initiatives; and
- demonstrate and incorporate a broad sensitivity to healthcare-related issues and their regulatory or policy implications.

Degree Requirements

- Successful completion of a minimum of 30 credit hours at the graduate level
- Maintenance of a cumulative GPA of 3.0 for all coursework taken at the University. B is the minimum passing grade in all courses counting toward the degree.
- Successful completion of all requirements for the MS degree within a period of four years

Curriculum: Master of Science in Regulatory Affairs and Health Policy

REQUIRED COURSES	TITLE	CREDIT HOURS
DRA 802	Law and Health Policy of Drugs and Devices	3
DRA 804	FDA and Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
DRA 807	Statistics in Clinical Research	3
DRA 808	Protection of Human Research Subjects	3
DRA 809	Health Epidemiology	3
DRA 812	Advanced Topics in Regulatory Affairs	3
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3
TOTAL		24

6 CREDITS FROM

ELECTIVE COURSES	TITLE	CREDIT HOURS
DRA 811	Health Policy Development and Analysis	3
DRA 816	Principles of Quality Assurance and Control	3
DRA 817	Development and Production of Medical Devices	3
DRA 818	The Law of Healthcare Compliance	3

PSB 870	Practicum in Pharmaceutical, Regulatory and Applied Sciences	1-3
PBH 701	Foundations Grad Study in Public Health	2
PBH 710	Policy and Leadership to Adv Hlth Eq	3
PBH 801	Community Organizing	3
PBH 810	Principles of Public Health Emergency Preparedness	3
PEP 802	Comparative Pharmaceutical Healthcare Systems	3
PSB 856J	GCP, GLP, GMP	3

Curriculum: Bachelor of Science in Medical and Molecular Biology/Master of Science in Regulatory Affairs and Health Policy

Year I — fall

COURSE	TITLE	CREDIT HOURS
BIO 150L	Biology I: Laboratory	1
BIO 151	Biology I: Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
ITM 101	Introduction to the Major	1
LIB 111	Academic Writing and Research	3
MAT 151	Calculus I	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
BIO 152	Biology II: Biology of Organ Systems	3
BIO 152L	Biology II: Biology of Organ Systems Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
LIB 112	Writing in the Humanities	3
LIB 133	Introduction to Social Sciences: Identity, Power and Society	3
MAT 152	Calculus II	3
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
BIO 260	Molecular Biology	3
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
MAT 261	Statistics	3
LIB 120	Introduction to Psychology	3
SS	Social Science (SSC) Elective	3
TOTAL		16

Year II — spring

COURSE	TITLE	CREDIT HOURS
BIO 255	Medical Microbiology	3
BIO 255L	Microbiology Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
BIO	Biology (BIO) Elective	3
HUM	Humanities (HUM) Elective	3
TOTAL		14

Year III — fall

COURSE	TITLE	CREDIT HOURS
BIO 360	Cellular Biochemistry I	4
LIB 220	Introduction to Interpersonal Communication for Health Professionals	3
PHY 270	Foundations of Physics I	3
PHY 272L	Foundations of Physics I Laboratory	1
BEH	Behavioral Science (BEH) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		17

Year III — spring

COURSE	TITLE	CREDIT HOURS
BIO 332	Genetics	3
LIB 512	Healthcare Ethics	3
BEH	Behavioral Science (BEH) Elective	3
HUM	Humanities (HUM) Elective	3
BIO	Biology (BIO) Elective	3
TOTAL		15

Year IV — fall

COURSE	TITLE	CREDIT HOURS
BIO	Biology (BIO) Electives	6
	General Electives	7
DRA 802	Law and Health Policy	3
TOTAL		16

Year IV — spring

COURSE	TITLE	CREDIT HOURS
BIO 420	Communication in the Biological Sciences	3
BIO	Biology (BIO) Electives	3
	General Electives	7
DRA 807	Statistics in Clinical Research	3
TOTAL		16

Year IV — summer

COURSE	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 808	Protection of Human Research Subjects	3
TOTAL		6

Year V — fall

COURSE	TITLE	CREDIT HOURS
DRA 809	Health Epidemiology	3
DRA 812	Advanced Topics in Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
TOTAL		9

Year V — spring

COURSE	TITLE	CREDIT HOURS
DRA 814	Data Analysis and Presentation Capabilities in Regulatory Affairs	3
DRA/MCR	Program Elective	3
DRA/MCR	Program Elective	3
TOTAL		9

Total credits to complete BS and MS degree requirements: 150 credit hours

Graduate Certificates, Regulatory Affairs and Health Policy (Boston and Online)

The graduate certificate program is open to applicants who desire advanced study in regulatory affairs or health policy without a commitment to a Masters degree program. These certificates complement degrees in business administration, nursing, marketing and management, and public health, for example. Each graduate certificate requires three courses and may be completed in less than one year. Current graduate students wishing to add a graduate certificate should contact the certificate program director.

Admission requirements are more flexible than those of the degree program. A minimum grade of B in each course is required for awarding of the certificate.

Graduate Certificate in Health Policy (Boston and Online)

REQUIRED COURSES	TITLE	CREDIT HOURS
DRA 802	Law and Health Policy	3
DRA 811	Health Policy Development and Analysis	3
DRA 809	Health Epidemiology	3
TOTAL		9

Graduate Certificate in Regulatory Affairs (Boston and Online)

REQUIRED COURSES	TITLE	CREDIT HOURS
DRA 804	FDA and Regulatory Affairs	3
DRA 815	International Regulatory Affairs	3
DRA 812	Advanced Topics in Regulatory Affairs	3
TOTAL		9

Graduate Certificate in Clinical Development of Drugs and Devices (Boston and Online)

REQUIRED COURSES	TITLE	CREDIT HOURS
MCR 801	Pharmaceutical R&D: From Discovery to Market	3
DRA 807	Statistics in Clinical Research	3
DRA 817	Development and Production of Medical Devices	3
TOTAL		9

Master of Science in Regulatory Sciences

The Master in Regulatory Sciences offers academic training in the science of standards and approaches to assessing the safety, efficacy, quality and performance of drugs, devices, and cosmetics. The program aims to educate a broad range of professionals who are interested in developing expertise in regulatory sciences. Candidates for this program are individuals who hold a baccalaureate degree or equivalent professional degree and who are interested in careers in organizations (e.g., federal or state healthcare regulatory agencies, clinical research organizations, managed care organizations) where knowledge of developing new tools, standards and approaches are used to assess the safety, efficacy, quality and performance of all FDA-regulated products. Although the primary emphasis of this program is placed on regulatory sciences, other components such as ethics, epidemiology, health economics, and drug development are also explored. In addition to the general MS degree requirements described in this Course Catalog, the program may establish additional requirements.

Curriculum: Master of Science in Regulatory Sciences

REQUIRED COURSES	TITLE	CREDIT HOURS
PSB 760	Fundamentals of Pharmaceuticals	3
PSB 763	Chemistry, Manufacturing, and Controls	3
PSB 761	Active Pharmaceutical Ingredients for Regulatory Sciences	3
PSB 762	Generic Drug and Biosimilar Development	3
PSB 886	Capstone	3
DRA 804	FDA and Regulatory Affairs	3
DRA 807	Statistics in Clinical Research	3
DRA 808	Protection of Human Research Subjects	3
DRA 809	Health Epidemiology	3
DRA 816	Principles of Quality Assurance and Control	3
TOTAL		30

Approved Elective courses

COURSE	TITLE	CREDIT HOURS
DRA 802	Law and Health Policy of Drugs and Devices	3
DRA 815	International Regulatory Affairs	3
DRA 817	Development and Production of Medical Devices	3
PEP 807	Introduction to Health Economics and Outcomes Research	3
PEP 825	Health Service and Outcome Research	3
PSB 755	Cosmetic and Personal Care Products	3
PSB 870	Practicum in Pharmaceutical, Regulatory and Applied Sciences	1-3
PSB 732	Graduate Directed Study	1-3

***The two required electives may be taken during any semester. **For a full-time schedule, students can take up to four courses in the fall and spring and up to two courses in the summer to complete the program in 3-4 semesters.*

Total credits: 36 credit hours

MCPHS-WORCESTER

MCPHS–Worcester
Forsyth School of Dental Hygiene

Lori Giblin-Scanlon, RDH, DHSc, Dean of the Forsyth School of Dental Hygiene, Professor for Clinical Programs

Tracye Moore, RDH, MS, EdD, Associate Dean and Professor of Dental Hygiene

Linda D. Boyd, RDH, RD, EdD, Associate Dean and Professor, Graduate Studies

Professors Jenkins, Giblin-Scanlon, LaSpina, Moore; Associate Professors Adams, Perry, Smilyanski; Assistant Professors Libby, McCarthy, Pillai, Smethers

Degree Programs

Bachelor of Science in Dental Hygiene (Fast Track)

Bachelor of Science in Dental Hygiene (Fast Track)

The Forsyth School of Dental Hygiene Worcester satellite clinic and academic program is located at 10 Lincoln Square on the Worcester campus. This 250,000-square-foot building offers fantastic amenities and an independent style of city living. Lincoln Square has furnished rooms with private baths, parking, a fitness center, a dining hall, an outdoor patio, and green space. It is also home to the MCPHS Dental Hygiene Clinic, Eye and Vision Center, and 10 Optical, a complete retail store, all of which are open to the public. The Fast Track BS 16-month dental hygiene program is available at this site. All didactic courses are provided through distance education technologies originating from either Boston or Worcester. Faculty travel from the Boston and Worcester sites regularly to meet with students and provide face-to-face instruction.

A student who holds a baccalaureate degree or higher from an accredited college or university or transfer student who has completed all of the Bachelor of Science degree requirements and prerequisites may pursue the 16-month Bachelor of Science in Dental Hygiene (Fast Track) program. The candidate for this program must have completed the prerequisite college courses listed below. An official college/university transcript will be reviewed to determine eligibility for transfer credits. The student in the Bachelor of Science (Fast Track) program takes courses in dental hygiene theory and practice, and receives clinical instruction in the MCPHS Esther M. Wilkins Dental Hygiene Clinic. Upon successful completion of the program, the student becomes eligible for dental hygiene licensure examinations.

Curriculum: Bachelor of Science in Dental Hygiene (Fast Track)

Prerequisites for all applicants to the Bachelor of Science (Fast Track) program include the following:

COURSE	CREDIT HOURS
Anatomy and physiology I and II (with labs)	8
Basic chemistry I and II (with labs)	8
Microbiology (with lab)	4
Statistics	3
Introduction to Psychology	3
Introduction to Sociology	3
Expository Writing I & II	6
Introduction to Interpersonal Communication for Health Professionals	3
TOTAL	38

Additional prerequisites for applicants with no prior Bachelor of Science/Bachelor of Arts degree to the Bachelor of Science (Fast Track) program include the following:

COURSE		CREDIT HOURS
College Algebra		3
American Culture, Identity, and Public Life		3
Social Science Elective		3
Humanities Elective		3
Behavioral Science Elective		3
TOTAL		15

Year I — fall

COURSE	TITLE	CREDIT HOURS
DHY 202	Dental Anatomy, Embryology, and Histology	2
DHY 204	Head and Neck Anatomy	2
DHY 209	Dental Hygiene Process of Care I (with lab)	6
DHY 230	Dental Radiology (with lab)	3
DHY 231	Dental Materials (with lab)	3
DHY 232	Nutrition	2
TOTAL		18

Year I — spring

COURSE	TITLE	CREDIT HOURS
DHY 211	Dental Hygiene Process of Care II	3
DHY 223	Clinical Dental Hygiene I	3
DHY 233	Periodontology	3
DHY 330	Pathology	3
DHY 343	Pain Management (with lab)	3
LIB 512	Healthcare Ethics	3
TOTAL		18

Year I — summer session

COURSE	TITLE	CREDIT HOURS
DHY 310	Dental Hygiene Process of Care III	3
DHY 350	Community Oral Health	3
DHY 420	Oral Health Research	3
DHY 323	Clinical Dental Hygiene II	4
PSB 320	Introduction to Health Care Delivery	3
TOTAL		16

Year II — fall

COURSE	TITLE	CREDIT HOURS
DHY 311	Dental Hygiene Process of Care IV	2
DHY 324	Clinical Dental Hygiene III	4
DHY 342	Pharmacology	2
DHY 460	Capstone in Dental Hygiene	2
DHY 345	Practice and Career Management	2
DHY 450	Dental Hygiene Content Review	1
	Program Elective	3
TOTAL		16

Total institutional credits to complete degree requirements: 68 credit hours

Students will graduate with a Bachelor of Science in Dental Hygiene following successful credit transfer of any college prerequisites and completion of the required dental hygiene courses listed above.

MCPHS–Worcester
New England School of Acupuncture

Dennis Moseman, DC, L. Ac., Dipl. Ac. (NCCAOM), Dean, Professor

Amy Hull, MEd, MAOM, LicAc, Associate Dean, Professor

Maria Broderick, EdD, MAOM, LicAc, Director of Clinical Education, Associate Professor

Bing Yang, MD (China), DAIH, LicAc, Associate Professor, Director of Chinese Herbal Medicine Program

Professors Hull, Moseman; Associate Professors Broderick, Cina, Yang; Assistant Professors Mohler, Short

Degree and Certificate Programs

Master of Acupuncture
Master of Acupuncture and Chinese Herbal Medicine
Doctor of Acupuncture
Certificate of Advanced Graduate Study in Chinese Herbal Medicine
Certificate of Japanese Acupuncture Studies

NESA Statement of Purpose
Train and inspire future generations of Acupuncturists to create a healthier world as independent health care providers in various clinical settings.

NESA Mission Statement
Deliver innovative, collaborative, engaging academic programs to advance acupuncture and Chinese herbal medicine education, research, and practice.

NESA Vision Statement
Empower our community to promote health and wellness equitably.

Core Values
We commit to the following beliefs:

- Excellence: We are committed to the highest educational standards and foster academic innovation, interprofessional collaboration and lifelong learning.
- Compassion: We mindfully serve and support all members of our community with kindness and respect.
- Engagement: We acknowledge and value the variety of human experience and foster access, equity, and engagement in our community.
- Integrity: We are bound by the highest professional and ethical standards and treat all with honesty and dignity.
- Integration: We embrace the traditions of Chinese Medicine while incorporating evidence-informed practice in education and patient care.

Program Goals
Master's Program Goals
Our master's programs prepare entry-level acupuncturists who:

- Think critically, synthesize knowledge, and access research and scholarly literature to support patient care.
- Demonstrate professional judgment, , and compassion while delivering high quality, traditional East Asian medical care.
- Communicate effectively and work collaboratively with patients, their caregivers and all members of the healthcare team while promoting patient-centered care.
- Understand multiple business models to support successful professional practice.

Doctoral Program Goals
Our doctoral programs prepare acupuncturists who:

- Think critically, synthesize knowledge, and access research and scholarly literature to support patient care.

- Demonstrate professional judgment, and compassion while delivering high quality, traditional East Asian medical care.
- Communicate effectively and work collaboratively with patients, their caregivers and all members of the healthcare team while promoting patient-centered care.
- Understand multiple business models to support successful professional practice.
- Recognize disparities in healthcare and understand their role within the system.
- Commit themselves to professional development and lifelong learning.
- Utilize evidence to inform patient care.

Program Learning Outcomes: Upon successful completion of the Master of Acupuncture (MAc), Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) and Certificate of Advanced Graduate Study in Chinese Herbal Medicine (CAGS CHM) programs, students will be able to:

- Apply the foundational knowledge of acupuncture, and/or Chinese herbal medicine to inform diagnosis, treatment, and patient care.
- Understand biomedical principles of assessment, diagnosis, and treatment to manage patient care and make appropriate referrals to other healthcare providers.
- Conduct a comprehensive intake, physical exam, and objective assessment to arrive at an East Asian medicine diagnosis.
- Safely administer a patient-centered acupuncture, and/or Chinese herbal medicine treatment.
- Practice ethically and with integrity while employing critical reasoning, , and professional judgment.
- Communicate effectively in-person or through technology to provide patient-centered care, and refer to other healthcare professionals, as necessary.
- Implement a plan to establish and sustain a successful career in acupuncture.
- Utilize scholarship and research to improve patient care.

Program Learning Outcomes: Upon successful completion of the Doctor of Acupuncture (DAc), students will be able to:

- Apply the foundational knowledge of acupuncture, and/or Chinese herbal medicine to inform diagnosis, treatment, and patient care.
- Understand biomedical principles of assessment, diagnosis, and treatment to manage patient care and make appropriate referrals to other healthcare providers.
- Conduct a comprehensive intake, physical exam, and objective assessment to arrive at an East Asian medicine diagnosis.
- Safely administer a patient-centered acupuncture, and/or Chinese herbal medicine treatment.
- Practice ethically and with integrity while employing critical reasoning, and professional judgment.
- Communicate effectively in-person or through technology to provide patient-centered care, and refer to other healthcare professionals, as necessary.
- Implement a plan to establish and sustain a successful career in acupuncture.
- Utilize scholarship and research to improve patient care.
- Utilize biomedical diagnostic studies to inform patient care.
- Demonstrate a commitment to ongoing self-reflection, professional development, and lifelong learning.
- Critically appraise evidence and utilize scholarship and research to improve patient care.
- Collaborate as part of an integrative healthcare team.
- Recognize disparities in healthcare and take responsibility for their role in advocating for access and outcomes.

New England School of Acupuncture Academic Policies

Academic Progression

Grading standards

- A minimum grade of C (2.0) is required in all professional courses in **both master's degrees, as well as a** minimum cumulative grade point average (GPA) of 2.0.
- A minimum grade of B (3.0) is required in all professional courses in t**he doctoral degree, as well as a** minimum cumulative grade point average (GPA) of 3.0.
- A failed course in the professional curriculum may be repeated only once.
- A second grade less than C for master's programs and B for doctoral programs in the repeated course may result in dismissal from the program.

Progression and Retention Policies

Students must complete the requirements for the Master of Acupuncture, Master of Acupuncture and Chinese Herbal Medicine, or the Doctor of Acupuncture within 200% timeframe. If this time limit from the date of admission has elapsed and the student has not completed degree requirements, the student must request an extension in writing and meet with the Dean, who may approve or deny the extension request. The School Dean's decision is final and not subject to further appeal.

CPR Certification

All students must complete and provide documentation of American Heart Association BLS for Healthcare Providers training prior to beginning and throughout the duration of Clinical Internship.

Transportation

Students are responsible for transportation to all classes and clinical sites.

Accreditation Commission for Acupuncture and Herbal Medicine (ACAHM)

The following programs offered by MCPHS– New England School of Acupuncture are accredited by the Accreditation Commission for Acupuncture and Herbal Medicine (ACAHM):

(1) Master of Acupuncture
(2) Master of Acupuncture and Chinese herbal medicine
(3) Doctor of Acupuncture (including a Doctor of Acupuncture degree completion track)
(4) Certificate in Chinese herbal medicine [currently named Certificate in Advanced Graduate Study in Chinese Herbal Medicine]

Accreditation status and notes may be viewed on the ACAHM Directory (https://acaom.org/directory-menu/directory/pg/2/).

ACAHM is recognized by the United States Department of Education as the specialized accreditation agency for institutions/programs preparing acupuncture and Chinese herbal medicine practitioners. ACAHM does not accredit any programs at the undergraduate/bachelor level. ACAHM is located at 500 Lake Street, Suite 204, Excelsior, MN 55331; phone 952.212.2434; fax 952.657.7068; www.acahm.org

Board Certification and Licensure

Students who successfully complete the master's programs will be eligible to sit for board certification examinations provided by the National Commission for Certification of Acupuncture and Oriental Medicine (NCCAOM). Students are responsible for managing the application, fees, and preparation for these examinations, which are required for licensure in the Commonwealth of Massachusetts.

Acupuncture licenses in Massachusetts are issued by the Commonwealth of Massachusetts Board of Registration in Medicine's Committee on Acupuncture. Information on the application is available through their website: http://www.mass.gov/eohhs/gov/departments/borim/acupuncture/licensing/requirements.html

Requirements for licensure vary by state. NESA has programs that meet the educational requirements for licensure in all states. These Professional Licensure Disclosures can be found on the Compliance page of the MCPHS website: https://www.mcphs.edu/about/legal

Master of Acupuncture (MAc)

The Master of Acupuncture (MAc) is a 32-month full-time, year-round program, with admission each fall term that provides students with the knowledge, skills, and competencies to deliver highly effective care to patients of all ages in a variety of settings, including in private practice and hospitals. The program features both classroom and clinical training in acupuncture studies, emphasizing hands-on learning under the direct supervision of experienced faculty. Upon completion of the program, students will be eligible to sit for national board certification examinations provided by the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM) and to apply for licensure.

The programs are taught on the Worcester campus, with clinical experiences in affiliate sites throughout the New England region. The required core curriculum includes Chinese medical theory, diagnosis and treatment strategies, location and functions of acupuncture points, history of Chinese medicine, research on acupuncture, bodywork, and nutrition. The biomedical model of disease is included, including biomedical clinical sciences, pathophysiology, pharmacology, and research methods. To equip the acupuncturist with competencies in cultivating the patient-provider relationship, counseling and communication skills, professional ethics, and self-care are taught. Practice management modules build skills to manage successful practices. During clinical internships, students treat patients under the supervision of senior faculty.

Japanese Acupuncture Concentration
An optional sequence of 4 courses in Japanese Acupuncture Styles may be completed concurrent with the 3-year core curriculum. The Japanese Acupuncture concentration offers students a unique opportunity to specialize in a gentle, precision-based approach to healing that emphasizes patient comfort, subtle diagnostic techniques, and refined treatment methods. Rooted in palpation-based diagnostics such as hara (abdominal) and meridian palpation, this concentration focuses on minimalistic and impactful treatments designed to balance the body's energy with minimal discomfort. Students will gain hands-on expertise in shallow, non-invasive needling with fine needles, gentle moxibustion, and other specialized treatment strategies and non-insertive techniques. This concentration prepares students to address both acute and chronic conditions while cultivating a deep understanding of Japanese acupuncture's diagnostic and treatment strategies to patient care.

Curriculum: Master of Acupuncture (MAc)

Year I — fall

COURSE	TITLE	CREDIT HOURS
ACP 501	Acupuncture Patient-Centered Care	1
SACAS 511	Traditional Chinese Medicine Theory I	4
SACAS 512	Point Location I	2.5
SACAS 513	Materials and Methods of TCM I	2
SASCI 517	Integrated Anatomy I	2
SACAS 519	Self-Care I	1
SACAS 510	History of Chinese Medicine	1
SACLC 511	Clinical Assistantship I	1
SASCI 511	Anatomy & Physiology I	3
TOTAL		17.5

Year I — spring

COURSE	TITLE	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4
SACAS 525	Point Location II	2.5
SACAS 526	Materials and Methods of TCM II	2
SASCI 527	Integrated Anatomy II	2
SAJAS 521	Japanese Acupuncture I	2
SACHM 520	Introduction to Chinese Herbal Medicine	2
SACLC 522	Clinical Assistantship II	1
SASCI 522	Anatomy & Physiology II	3
SASCI 511L	Anatomy & Physiology Lab	1
TOTAL		19.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 532	Japanese Acupuncture II**	2
SACAS 537	Actions and Effects of Points and Channels	3
SACAS 539	Clinical Skills of TCM	2
SASCI 537	Acupuncture Integrative Pain Management I	2
SACAS 538	Acupuncture Channel Theory	2
SACAS 535	Self-Care II	1
SACAS 530	Bodywork	1
SACLC 533	Clinical Assistantship III	1
SASCI 530	General Biology	3
SAEXM 530	First Year Comprehensive Examination	0
TOTAL		15/17**

Year II — fall

COURSE	TITLE	CREDIT HOURS
SAJAS 613	Japanese Acupuncture III**	2
SACAS 611	TCM Etiology and Pathology of Disease I	3
SACAS 612	Introduction to Clinical Internship I	2.5
SASCI 619	Western Pathophysiology and Pharmacology I	3
SASCI 617	Acupuncture Integrative Pain Management II	2
SACLC 614	Clinical Assistantship IV	1
TOTAL		11.5/13.5**

Year II — spring

COURSE	TITLE	CREDIT HOURS
SAJAS 624	Japanese Acupuncture IV**	2
SACAS 626	TCM Etiology and Pathology of Disease II	3
SACAS 624	Introduction to Clinical Internship II	2.5
SASCI 629	Western Pathophysiology and Pharmacology II	3
SASCI 627	Acupuncture Integrative Pain Management III	2
SACLC 625	Clinical Assistantship V	1
SASCI 620	General Psychology	3
SAEXM 620	Second Year Comprehensive Exam	0
TOTAL		14.5/16.5**

Year II — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 635	Japanese Acupuncture V**	2
SASCI 639	Western Pathophysiology and Pharmacology III	3
SAPRD 635	Patient Provider Relationship	3
SACAS 636	Microsystems of Acupuncture Treatment	1
SACLC 636 A-C	*MAc Clinical Internship I, II, III	6
SASCI 737	Physiology of Acupuncture	2
TOTAL		15/17**

Year III — fall

COURSE	TITLE	CREDIT HOURS
SAPRD 710	Research Design & Evaluation	3
SACAS 717	Clinical Case Management	1
SAPRD 711	Practice Management: Marketing & Business Skills	2
SASCI 730	Microbiology	3
SACLC 717 A-C	* MAc Clinical Internship IV, V & VI	6
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
SASCI 710	Introduction to Public Health	2
SAPRD 722	Practice Management: Acupuncture Professional Issues	1
SACAS 718	Chinese Nutrition	1
SACAS 729	Survey Classic Chinese Medical Texts	1
SASCI 720	Western Nutrition	1
SASCI 729	Patient Assessment	2
SACLC 728 A-C	Clinical Internship VII, VIII, IX	6
TOTAL		14

Total credits to complete degree requirements: MAc/MAc with JAS Concentration - 122/130**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Master of Acupuncture and Chinese Herbal Medicine (MAc CHM)

The Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) is a 36-month, full-time, year-round program, with admission each fall term that provides students with the knowledge, skills, and competencies to deliver highly effective care to patients of all ages in a variety of settings, including in private practice and hospitals. The program features both classroom and clinical training in acupuncture studies, emphasizing hands-on learning under direct supervision of experienced faculty. In addition, MAc CHM students receive specialized training in Chinese herbal medicine. Upon completion of the program, students will be eligible to sit for national board certification examinations in acupuncture and herbs, as provided by the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM), and to apply for a license.

The program is taught on the Worcester campus, with clinical experiences in affiliate sites in the New England region. The required core curriculum) includes Chinese medical theory, diagnosis and treatment strategies, location and functions of acupuncture points, history of Chinese medicine, research on acupuncture, bodywork, and nutrition. The biomedical model of disease is included, including biomedical clinical sciences, pathophysiology, pharmacology, and research methods. To equip the acupuncturist with competencies in cultivating the patient-provider relationship, counseling and communication skills, professional ethics, and self-care are taught. Practice management modules build skills to manage successful practices. During Clinical Internships, students treat patients under the supervision of senior faculty. Required courses in the Chinese Herbal Medicine include courses in single herbs, classic formulas, herb-drug interactions, case studies, and additional clinical supervision.

Japanese Acupuncture Concentration

The Japanese Acupuncture certificate program offers students a unique opportunity to specialize in a gentle, precision-based approach to healing that emphasizes patient comfort, subtle diagnostic techniques, and refined treatment methods. Rooted in palpation-based diagnostics such as hara (abdominal) and meridian palpation, this concentration focuses on minimalistic and impactful treatments designed to balance the body's energy with minimal discomfort. Students will gain hands-on expertise in shallow, non-invasive needling with fine needles, gentle moxibustion, and other specialized treatment strategies and non-insertive techniques. This concentration prepares students to address both acute and chronic conditions while cultivating a deep understanding of Japanese acupuncture's diagnostic and treatment strategies to patient care. The concentration consists of an optional sequence of 4 courses in Japanese Acupuncture and may be completed concurrent with the core curriculum.

Curriculum: Master of Acupuncture and Chinese Herbal Medicine (MAc CHM)

Year I — fall

COURSE	TITLE	CREDIT HOURS
SACAS 511	Traditional Chinese Medicine Theory I	4
SACAS 512	Point Location I	2.5
SACAS 513	Materials and Methods of TCM I	2
ACP 501	Acupuncture Patient-Centered Care	1
SASCI 517	Integrated Anatomy I	2
SACAS 519	Self-Care I	1
SACAS 510	History of Chinese Medicine	1

SACLC 511	Clinical Assistantship I	1
SASCI 511	Anatomy and Physiology I	3
TOTAL		17.5

Year I — spring

COURSE	TITLE	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4
SACAS 525	Point Location II	2.5
SACAS 526	Materials and Methods of TCM II	2
SASCI 527	Integrated Anatomy II	2
SAJAS 521	Japanese Acupuncture I	2
SACHM 520	Introduction to Chinese Herbal Medicine	2
SACLC 522	Clinical Assistantship II	1
SASCI 522	Anatomy and Physiology II	3
SASCI 511L	Anatomy and Physiology Lab	1
TOTAL		19.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 532	Japanese Acupuncture II**	2
SACHM 531	Chinese Herbs I	4
SACAS 537	Actions and Effects of Points & Channels	3
SACAS 539	Clinical Skills of TCM	2
SASCI 537	Acupuncture Integrative Pain Management I	2
SACAS 538	Acupuncture Channel Theory	2
SACAS 530	Bodywork	1
SACLC 533	Clinical Assistantship III	1
SASCI 530	General Biology	3
SAEXM 530	First Year Comprehensive Examination	0
TOTAL		18/20**

Year II — fall

COURSE	TITLE	CREDIT HOURS
SAJAS 613	Japanese Acupuncture III**	2
SACHM 612	Chinese Herbs II	4
SACAS 611	TCM Etiology and Pathology of Disease I	3
SACAS 612	Introduction to Clinical Internship I	2.5
SASCI 610	Chemistry for the Health Sciences	3
SASCI 619	Western Pathophysiology and Pharmacology I	3
SASCI 617	Acupuncture Integrative Pain Management II	2
SACHM 613	Chinese Herbal Dispensary Assistantship	0
SACLC 614	Clinical Assistantship IV	1.5
TOTAL		19/21**

Year II — spring

COURSE	TITLE	CREDIT HOURS
SAJAS 624	Japanese Acupuncture IV**	2
SACHM 624	Chinese Herbal Formulas I	4
SACAS 626	TCM Etiology and Pathology of Disease II	3
SACAS 624	Introduction to Clinical Internship II	2.5
SASCI 629	Western Pathophysiology and Pharmacology II	3
SASCI 627	Acupuncture Integrative Pain Management III	2
SACLC 625	Clinical Assistantship V	1.5

SASCI 620	General Psychology	3
SAEXM 620	Second Year Comprehensive Exam	0
TOTAL		19/21**

Year II — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 635	Japanese Acupuncture V**	2
SACHM 635	Chinese Herbal Formulas II	4
SACHM 636	CHM: Patent Herbal Medicine	2
SASCI 639	Western Pathophysiology and Pharmacology III	3
SASCI 737	Physiology of Acupuncture	2
SAPRD 635	Patient Provider Relationship	3
SACAS 636	Microsystems of Acupuncture Treatment	1
SACLC 636 A-C	*MAc CHM Clinical Internship I, II & III	6
TOTAL		21/23**

Year III — fall

COURSE	TITLE	CREDIT HOURS
SACHM 717	CHM: Internal Medicine I	4
SACHM 718	CHM: Formula Writing	2
SAPRD 710	Research Design & Evaluation	3
SACAS 717	Clinical Case Management	1
SAPRD 711	Practice Management: Marketing & Business Skills	2
SACLC 710	Clinical Internship – Focused Placement I	1
SACLC 717 A-C	*MAc CHM Clinical Internship IV, V & VI	6
SAEXM 710	CHM Comprehensive Examination	0
TOTAL		19

Year III — spring MAc CHM (JAS Concentration)

COURSE	TITLE	CREDIT HOURS
SACHM 729	CHM: Internal Medicine II	4
SASCI 710	Introduction to Public Health	2
SAPRD 722	Practice Management: Acupuncture Professional Issues	1
SACAS 718	Chinese Nutrition	1
SACAS 729	Survey Classic Chinese Medical Texts	1
SASCI 720	Western Nutrition	1
SASCI 729	Patient Assessment	2
SACLC 720	Clinical internship – Focused Placement II	1
SACLC 728 A-C	*MAc CHM Clinical Internship VII, VIII, IX	6
TOTAL		19

Year III — summer

COURSE	TITLE	CREDIT HOURS
SASCI 731	Physics	2
SACHM 735	CHM Classical Texts	2
SASCI 730	Microbiology	3
SACLC 739 A-C	MAc CHM Clinical Internship X, XI, XII*	6
TOTAL		13

Total credits to complete degree requirements: MAc CHM/ MAc CHM with JAS Concentration165/173**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Certificate of Advanced Graduate Study in Chinese Herbal Medicine (CAGS in CHM)

The Certificate of Advanced Graduate Studies in Chinese Herbal Medicine is a comprehensive program designed for licensed acupuncturists and advanced students of East Asian medicine who seek to expand their practice to include Chinese herbal medicine. This rigorous master's-level program integrates classical knowledge with modern research, equipping students with the skills to safely and effectively administer Chinese herbal formulas. Students explore the fundamental theories of herbal medicine, master the properties and functions of individual herbs and traditional formulas, and learn to compose, revise, and evaluate tailored treatments based on patient assessments. The curriculum emphasizes ethical practice, regulatory compliance, dispensary management, and quality assurance, while addressing sustainability and the safe handling of herbal products. Graduates of this program are eligible to sit for the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM) board examination in Chinese Herbology and meet the standards required by most states to dispense Chinese herbs, ensuring they are prepared to enhance clinical outcomes and advance professional practice in herbal medicine.

Curriculum: Certificate of Advanced Graduate Study in Chinese Herbal Medicine (CAGS in CHM)

Year I — Fall

COURSE	TITLE	CREDIT HOURS
ACH 501	Introduction to Chinese Herbal Medicine	2
TOTAL		2

Year I — Spring

COURSE	TITLE	CREDIT HOURS
ACH 502	Chinese Herbal Materia Medica I	4
TOTAL		4

Year I — summer

COURSE	TITLE	CREDIT HOURS
ACH 503	Chinese Herbal Materia Medica II	4
TOTAL		4

Year II — fall

COURSE	TITLE	CREDIT HOURS
ACH 601	Chinese Herbal Formulas I	3
TOTAL		3

Year II — spring

COURSE	TITLE	CREDIT HOURS
ACH 602	Chinese Herbal Formulas II	3
ACH 611	Chinese Herbal Medicine Dispensary Assistantship	0.5
TOTAL		3.5

Year II — summer

COURSE	TITLE	CREDIT HOURS
ACH 603	Chinese Herbal Formulas III	3
SACHM 636	Chinese Herbal Patent Medicines	2
ACA 701	Chinese Herbal Medicine Comprehensive Examination	0
TOTAL		5

Year III — fall

COURSE	TITLE	CREDIT HOURS
ACH 701	Chinese Herbal Medicine Treatment of Disease I	3
ACH 711	Chinese Herbal Medicine Formula Writing	2
ACC 791 CHM	Clinical Internship I	2
TOTAL		7

Year III — spring

COURSE	TITLE	CREDIT HOURS
ACH 702	Chinese Herbal Medicine Treatment of Disease II	3
ACH 712	Chinese Herbal Medicine Classical Texts	2
ACC 792	CHM Clinical Internship II	2
TOTAL		7

Year III — summer

COURSE	TITLE	CREDIT HOURS
ACH 703	Chinese Herbal Medicine Treatment of Disease III	2
ACC 793	CHM: Clinical Internship III	3
SACLC	*CHM: Clinical Internship II	1
TOTAL		3
**Biomedical Sciences		4

Total credits to complete certificate requirements: 45.5

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** If an applicant has not completed the required 4 credits (60 clock hours) in biomedical clinical science hours, these hours may be met by completing courses such as Introduction to Public Health, Research Design and Evaluation, Physiology of Acupuncture, or other co-requisite sciences.*

Certificate of Japanese Acupuncture

The Japanese Acupuncture certificate program offers students a unique opportunity to specialize in a gentle, precision-based approach to healing that emphasizes patient comfort, subtle diagnostic techniques, and refined treatment methods. Rooted in palpation-based diagnostics such as hara (abdominal) and meridian palpation, this concentration focuses on minimalistic and impactful treatments designed to balance the body's energy with minimal discomfort. Students will gain hands-on expertise in shallow, non-invasive needling with fine needles, gentle moxibustion, and other specialized treatment strategies and non-insertive techniques. This concentration prepares students to address both acute and chronic conditions while cultivating a deep understanding of Japanese acupuncture's diagnostic and treatment strategies for patient care. The certificate program consists of a sequence of 5 courses in Japanese Acupuncture and can be completed in 5-semesters

Curriculum: Certificate of Japanese Acupuncture Studies

COURSE	TITLE	CREDIT HOURS
Year I— spring		
SAJAS 521	Japanese Acupuncture I	2
Year I— summer		
SAJAS 532	Japanese Acupuncture II	2
Year I— fall		
SAJAS 613	Japanese Acupuncture III	2
Year II— spring		
SAJAS 624	Japanese Acupuncture IV	2
Year II— summer		
SAJAS 635	Japanese Acupuncture V	2
TOTAL		10

Total credits to complete certificate requirements: 10

Doctor of Acupuncture (DAc)

The Doctor of Acupuncture (DAc) is a four-year program that teaches the knowledge, skills, and competencies needed to provide highly skilled and effective care to patients of all ages in a variety of settings, including private practice and hospitals. This program also provides advanced training that prepares acupuncturists to collaborate with other healthcare professionals or work in integrative medical settings. The program features both classroom and clinical training in acupuncture studies. Students must dually enroll in either the Master of Acupuncture or Master of Acupuncture and Chinese Herbal Medicine program as well as the Doctor of Acupuncture program. Upon completion of all master's level requirements students will be eligible to sit for national board certification examinations, as provided by the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM), and to apply for a license.

Japanese Acupuncture Concentration
An optional sequence of 4 courses in Japanese Acupuncture Styles may be completed concurrent with the core curriculum. The Japanese Acupuncture certificate program offers students a unique opportunity to specialize in a gentle, precision-based approach to healing that emphasizes patient comfort, subtle diagnostic techniques, and refined treatment methods. Rooted in palpation-based diagnostics such as hara (abdominal) and meridian palpation, this concentration focuses on minimalistic and impactful treatments designed to balance the body's energy with minimal discomfort. Students will gain hands-on expertise in shallow, non-invasive needling with fine needles, gentle moxibustion, and other specialized treatment strategies and non-insertive techniques. This concentration prepares students to address both acute and chronic conditions while cultivating a deep understanding of Japanese acupuncture's diagnostic and treatment strategies to patient care. The concentration consists of an optional sequence of 4 courses in Japanese Acupuncture and may be completed concurrent with the core curriculum.

Curriculum: Master of Acupuncture (MAc)/Doctorate of Acupuncture (DAc)

Year I — fall

COURSE	TITLE	CREDIT HOURS
SACAS 511	Traditional Chinese Medicine Theory I	4
SACAS 512	Point Location I	2.5
SACAS 513	Materials and Methods of TCM I	2
ACP 501	Acupuncture Patient-Centered Care	1
SASCI 517	Integrated Anatomy I	2
SACAS 519	Self-Care I	1
SACAS 510	History of Chinese Medicine	1
SACLC 511	Clinical Assistantship I	1
SASCI 511	Anatomy & Physiology I	3
TOTAL		17.5

Year I — spring

COURSE	TITLE	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4
SACAS 525	Point Location II	2.5
SACAS 526	Materials and Methods of TCM II	2
SASCI 527	Integrated Anatomy II	2
SAJAS 521	Japanese Acupuncture I	2
SACHM 520	Introduction to Chinese Herbal Medicine	2
SACLC 522	Clinical Assistantship II	1
SASCI 511L	Anatomy & Physiology Lab	1
SASCI 522	Anatomy & Physiology II	3
TOTAL		19.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 532	Japanese Acupuncture II**	2
SACAS 537	Actions and Effects of Points and Channels	3
SACAS 539	Clinical Skills of TCM	2
SASCI 537	Acupuncture Integrative Pain Management I	2
SACAS 538	Acupuncture Channel Theory	2
SACAS 535	Self-Care II	1
SACAS 530	Bodywork	1
SACLC 533	Clinical Assistantship III	1
SASCI 530	General Biology	3
SAEXM 530	First Year Comprehensive Examination	0
TOTAL		15/17**

Year II — fall

COURSE	TITLE	CREDIT HOURS
SAJAS 613	Japanese Acupuncture III**	2
SACAS 611	TCM Etiology and Pathology of Disease I	3
SACAS 612	Introduction to Clinical Internship I	2.5
SASCI 619	Western Pathophysiology and Pharmacology I	3
SASCI 617	Acupuncture Integrative Pain Management II	2
SASCI 610	Chemistry for the Health Sciences	3
SACLC 614	Clinical Assistantship IV	1
TOTAL		14.5/16.5**

Year II — spring

COURSE	TITLE	CREDIT HOURS
SAJAS 624	Japanese Acupuncture IV**	2
SACAS 626	TCM Etiology and Pathology of Disease II	3
SACAS 624	Introduction to Clinical Internship II	2.5
SASCI 629	Western Pathophysiology and Pharmacology II	3
SASCI 627	Acupuncture Integrative Pain Management III	2
SACLC 625	Clinical Assistantship V	1
SASCI 620	General Psychology	3
SAEXM 620	Second Year Comprehensive Exam	0
TOTAL		14.5/16.5**

Year II — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 635	Japanese Acupuncture V**	2
SASCI 639	Western Pathophysiology and Pharmacology III	3
SASCI 737	Physiology of Acupuncture	2
SAPRD 635	Patient Provider Relationship	3
SACAS 636	Microsystems of Acupuncture Treatment	1
SACLC 636 A-C	*MAc Clinical Internship I, II, III	6
TOTAL		15/17**

Year III — fall

COURSE	TITLE	CREDIT HOURS
SAPRD 710	Research Design & Evaluation	3
SACAS 717	Clinical Case Management	1
SAPRD 711	Practice Management: Marketing & Business Skills	2
SASCI 730	Microbiology	3
SACLC 717 A-C	*MAc Clinical Internship IV, V & VI	6
TOTAL		15

Year III — spring

COURSE	TITLE	CREDIT HOURS
SASCI 710	Introduction to Public Health	2
SAPRD 722	Practice Management: Acupuncture Professional Issues	1
SACAS 718	Chinese Nutrition	1
SACAS 729	Survey Classic Chinese Medical Texts	1
SASCI 720	Western Nutrition	1
SASCI 729	Patient Assessment	2
SACLC 728 A-C	*MAc Clinical Internship VII, VIII, IX	6
TOTAL		14

Year III — summer

COURSE	TITLE	CREDIT HOURS
SASBM 811	Systems Based Medicine: Patient Care Systems	3
SASBM 812	Systems Based Medicine: Collaborative Care	2
TOTAL		5

Year IV - fall MAc

COURSE	TITLE	CREDIT HOURS
SASCI 820	Advanced Diagnostic Studies	2
SASCI 813	Advanced Acupuncture Integrative Pain Management I	2
SACLC 822A	Acupuncture Integrative Pain Management Clinic	2
TOTAL		6

Year IV -spring MAc

COURSE	TITLE	CREDIT HOURS
SAPRD 810	Professional Development: Lifelong Learning	2
SASCI 821	Advanced Acupuncture Integrative Pain Management II	2
SACLC 822	Acupuncture Integrative Pain Management Clinic	2
TOTAL		6

Total credits to complete degree requirements: MAc DAc/MAc DAc with JAS Concentration140/148**
**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Curriculum: Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) / Doctor of Acupuncture (DAc)

Year I — fall

COURSE	TITLE	CREDIT HOURS
SACAS 511	Traditional Chinese Medicine Theory I	4
SACAS 512	Point Location I	2.5
SACAS 513	Materials and Methods of TCM I	2
SASCI 517	Integrated Anatomy I	2
SACAS 510	History of Chinese Medicine	1
SACAS 519	Self-Care I	1
SACLC 511	Clinical Assistantship I	1
ACP 501	Acupuncture Patient-Centered Care1	
SASCI 511	Anatomy and Physiology I	3
TOTAL		17.5

Year I — spring

COURSE	TITLE	CREDIT HOURS
SACAS 524	Traditional Chinese Medicine Theory II	4
SACAS 525	Point Location II	2.5
SACAS 526	Materials and Methods of TCM II	2
SASCI 527	Integrated Anatomy II	2
SAJAS 521	Japanese Acupuncture I	2
SACHM 520	Introduction to Chinese Herbal Medicine	2
SACLC 522	Clinical Assistantship II	1
SASCI 511L	Anatomy and Physiology Lab	1
SASCI 522	Anatomy and Physiology II	3
TOTAL		19.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 532	Japanese Acupuncture II**	2
SACHM 531	Chinese Herbs I	4
SACAS 537	Actions and Effects of Points & Channels	3
SACAS 539	Clinical Skills of TCM	2
SASCI 537	Acupuncture Integrative Pain Management I	2
SACAS 538	Acupuncture Channel Theory	2
SACAS 530	Bodywork	1
SACLC 533	Clinical Assistantship III	1
SASCI 530	General Biology	3
SAEXM 530	First Year Comprehensive Examination	0
TOTAL		18/20**

Year II — fall

COURSE	TITLE	CREDIT HOURS
SAJAS 613	Japanese Acupuncture III**	2
SACHM 612	Chinese Herbs II	4
SACAS 611	TCM Etiology and Pathology of Disease I	3
SACAS 612	Introduction to Clinical Internship I	2.5
SASCI 619	Western Pathophysiology and Pharmacology I	3
SASCI 617	Acupuncture Integrative Pain Management II	2
SACHM 613	Chinese Herbal Dispensary Assistantship	0
SACLC 614	Clinical Assistantship IV	1.5
SASCI 610	Chemistry for the Health Sciences	3
TOTAL		19/20**

Year II — spring

COURSE	TITLE	CREDIT HOURS
SAJAS 624	Japanese Acupuncture IV**	2
SACHM 624	Chinese Herbal Formulas I	4
SACAS 626	TCM Etiology and Pathology of Disease II	3
SACAS 624	Introduction to Clinical Internship II	2.5
SASCI 629	Western Pathophysiology and Pharmacology II	3
SASCI 627	Acupuncture Integrative Pain Management III	2
SACLC 625	Clinical Assistantship V	1.5
SASCI 620	General Psychology	3
SAEXM 620	Second Year Comprehensive Exam	0
TOTAL		19/21**

Year II — summer

COURSE	TITLE	CREDIT HOURS
SAJAS 635	Japanese Acupuncture V**	2
SACHM 635	Chinese Herbal Formulas II	4
SACHM 636	CHM: Patent Herbal Medicine	2
SASCI 639	Western Pathophysiology and Pharmacology III	3
SASCI 737	Physiology of Acupuncture	2
SAPRD 635	Patient Provider Relationship	3
SACAS 636	Microsystems of Acupuncture Treatment	1
SACLC 636 A-C	*MAc CHM Clinical Internship I, II & III	6
TOTAL		21/23**

Year III — fall

COURSE	TITLE	CREDIT HOURS
SACHM 717	CHM: Internal Medicine I	4
SACHM 718	CHM: Formula Writing	2
SAPRD 710	Research Design & Evaluation	3
SACAS 717	Clinical Case Management	1
SAPRD 711	Practice Management: Marketing & Business Skills	2
SACLC 710	Clinical internship – Focused Placement I	1
SACLC 717 A-C	*MAc CHM Clinical Internship IV, V & VI	6
SAEXM 710	CHM Comprehensive Examination	0
TOTAL		19

Year III — spring

COURSE	TITLE	CREDIT HOURS
SACHM 729	CHM: Internal Medicine II	4
SASCI 710	Introduction to Public Health	2
SAPRD 722	Practice Management: Acupuncture Professional Issues	1
SACAS 718	Chinese Nutrition	1
SACAS 729	Survey Classic Chinese Medical Texts	1
SACI 720	Western Nutrition	1
SASCI 729	Patient Assessment	2
SACLC 720	Clinical Internship – Focused Placement II	1
SACLC 728 A-C	*MAc CHM Clinical Internship VII, VIII, IX	6
TOTAL		19

Year III — summer

COURSE	TITLE	CREDIT HOURS
SASCI 731	Physics	2
SACHM 735	CHM Classical Texts	2
SASCI 730	Microbiology	3
SACLC 739 A-C	MAc CHM Clinical Internship X, XI, XII*	6
SASBM 811	Systems Based Medicine: Patient Care Systems	3
SASBM 812	Systems Based Medicine; Collaborative Care	2
TOTAL		18

Year IV - fall

COURSE	TITLE	CREDIT HOURS
SASCI 820	Advanced Diagnostic Studies	2
SASCI 813	Advanced Acupuncture Integrative Pain Management I	2
SACLC 822A	Acupuncture Integrative Pain Management Clinic	2
TOTAL		6

Year IV - spring

COURSE	TITLE	CREDIT HOURS
SAPRD 810	Professional Development: Lifelong Learning	2
SASCI 821	Advanced Acupuncture Integrative Pain Management II	2
SACLC 822B	Acupuncture Integrative Pain Management Clinic	2
TOTAL		6

Total credits to complete degree requirements: MAc CHM DAc/Mac CHM DAc with JAS Concentration182/190**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Doctor of Acupuncture (DAc) Completion Program

The two-semester, 21-credit Doctoral Completion Program is a fully online program designed to elevate licensed acupuncturists to the highest level of clinical and professional practice. Tailored for those who have completed a master's-level program in acupuncture or acupuncture and Chinese herbal medicine, this program focuses on advancing critical competencies such as laboratory diagnostic proficiency, culturally competent care, effective communication, interprofessional collaboration, and evidence-based practice. Additionally, our specialized focus on Acupuncture Integrative Pain Management provides a unique opportunity for students to learn directly from diverse healthcare professionals. This collaborative approach equips future acupuncture leaders with the skills and strategies needed to effectively contribute to pain management and successfully navigate the complexities of healthcare delivery. By bridging the gap between traditional Chinese medical principles and modern integrative healthcare, the program prepares acupuncturists to deliver patient-centered care, thrive in a variety of healthcare settings, and take on leadership roles within interdisciplinary teams. These advanced skills are essential for ensuring high-quality care, improving patient outcomes, and positioning acupuncture as a vital component of the broader healthcare system.

Curriculum: **Doctorate of Acupuncture** (DAc) Completion Program

First Semester

COURSE	TITLE	CREDIT HOURS
ACP 601	Evidence-Informed Practice in Acupuncture	3
ACP 711	Collaborative Care	3
ACB 803	Advanced Diagnostic Studies	2
ACB 801	Integrative Pain Management I	2
ACC 821	Integrative Medicine Case Management I	2
TOTAL		11

Second Semester

COURSE	TITLE	CREDIT HOURS
ACP 811	Practice-based Learning and Improvement	2
ACP 812	Healthcare Systems	3
ACB 802	Integrative Pain Management II	2
ACC 822	Integrative Medicine Case Management II	2
TOTAL		9

Total credits to complete degree requirements: 21 credit hours

Master of Acupuncture (MAc) - *FOR STUDENTS ENTERING IN FALL OF 2025*

Curriculum: Master of Acupuncture (MAc) - Standard Program

Year I — fall

COURSE	TITLE	CREDIT HOURS
ACF 501	Cultural Foundations of Chinese Medicine	2
ACF 502	Chinese Medicine Theory I	3
ACT 501	Acupuncture Channels & Points I	2
ACT 511	Acupuncture Techniques I	2
ACT 521	East Asian Medical Bodywork I	0.5
ACH 501	Introduction to Chinese Herbal Medicine	2
ACS 501	Self-Care I: Qi Gong	0.5
BIO 110E	Anatomy & Physiology I	3
ACB 511	Integrative Anatomy Lab I	1
ACP 501	Acupuncture Patient-Centered Care	1
ACC 501	Introduction to Clinical Assistantship	1
TOTAL		18

Year I — spring

COURSE	TITLE	CREDIT HOURS
ACF 503	Chinese Medicine Theory II	3
ACT 502	Acupuncture Channels & Points II	2
ACT 512	Acupuncture Techniques II	2
ACT 522	East Asian Medical Bodywork II	0.5
ACS 502	Self-Care II: Qi Gong	0.5
ACB 502	Anatomy & Physiology II	3
BIO 210E	Integrative Anatomy Lab II	1
ACP 502	Professional Practice I	2
ACC 502	Clinical Assistantship I	1.5
ACT 571	Japanese Acupuncture I	2
TOTAL		17.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
ACF 504	Chinese Medicine Diagnosis	2
ACT 503	Acupuncture Channels & Points III	2
ACT 513	Acupuncture Techniques III	2
ACT 523	East Asian Medical Bodywork III	0.5
ACS 503	Self-Care III: Qi Gong	0.5
BIO 151E	General Biology	3
ACB 711	Patient Assessment	2
ACP 503	Professional Practice II	2
ACC 503	Clinical Assistantship II	1.5
ACT 572	Japanese Acupuncture II**	2
ACA 501	Level I Comprehensive Exam	0
TOTAL		15.5/17.5**

Year II — fall

COURSE	TITLE	CREDIT HOURS
ACF 601	Chinese Medicine Treatment of Disease I	3
ACT 601	Acupuncture Channel Treatment	2
ACT 602	Acupuncture Clinical Practice I	2
ACS 601	Self-Care IV: Integrative Nutrition I	1.5
ACB 601	Biomedical Treatment of Disease I	3
ACB 611	Acupuncture Integrative Pain Management I	2
ACP 601	Evidence-Informed Practice in Acupuncture	3
ACC 601	Clinical Assistantship III	1.5
ACT 573	Japanese Acupuncture III**	2
TOTAL		18/20**

Year II — spring

COURSE	TITLE	CREDIT HOURS
ACF 602	Chinese Medicine Treatment of Disease II	3
ACT 602	Acupuncture Clinical Practice II	2
ACS 602	Self-Care V: Integrative Nutrition II	1.5
ACB 602	Biomedical Treatment of Disease II	3
ACB 612	Acupuncture Integrative Pain Management II	2
ACP 602	Psychology & Clinical Counseling	2
ACC 611	Acupuncture Clinical Internship I	1.5
ACT 574	Japanese Acupuncture IV**	2
TOTAL		15/17**

Year II — summer

COURSE	TITLE	CREDIT HOURS
ACF 603	Chinese Medicine Treatment of Disease III	3
ACB 603	Biomedical Treatment of Disease III	3
ACB 613	Acupuncture Integrative Pain Management III	2
ACP 603	Patient Provider Relationship	2
ACC 613	Acupuncture Clinical Internship II	4.5
ACP 711	Collaborative Care	3
ACT 575	Japanese Acupuncture V	2
ACA 601	Level II Comprehensive Exam	0
TOTAL		17.5/19.5**

Year III — fall

COURSE	TITLE	CREDIT HOURS
ACF 701	Survey of Classical Texts	1
ACF 702	Case Management	2
ACB 701	Mechanisms of Acupuncture	2
ACP 701	Practice Management I	2
ACP 703	NCCAOM Board Review I	1
ACC 716	Acupuncture Clinical Internship III	6
TOTAL		14

Year III — spring

COURSE	TITLE	CREDIT HOURS
ACB 712	Introduction to Public Health	3
ACP 701	Practice Management II	2
ACP 704	NCCAOM Board Review II	1
ACC 726	Acupuncture Clinical Internship IV	6
TOTAL		12

Total credits to complete degree requirements: MAc/MAc with JAS Concentration – 127.5/135.5**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Master of Acupuncture and Chinese Herbal Medicine (MAc CHM)

Curriculum: Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) - Standard Program

Year I — fall

COURSE	TITLE	CREDIT HOURS
ACF 501	Cultural Foundations of Chinese Medicine	2
ACF 502	Chinese Medicine Theory I	3
ACT 501	Acupuncture Channels & Points I	2
ACT 511	Acupuncture Techniques I	2
ACT 521	East Asian Medical Bodywork I	0.5
ACS 501	Self-Care I: Qi Gong	0.5
BIO 110E	Anatomy & Physiology I	3
ACB 511	Integrative Anatomy Lab I	1
ACP 501	Acupuncture Patient-Centered Care	1
ACC 501	Introduction to Clinical Assistantship	1
TOTAL		16

Year I — spring

COURSE	TITLE	CREDIT HOURS
ACF 503	Chinese Medicine Theory II	3
ACT 502	Acupuncture Channels & Points II	2
ACT 512	Acupuncture Techniques II	2
ACT 522	East Asian Medical Bodywork II	0.5
ACS 502	Self-Care II: Qi Gong,	0.5
BIO 210E	Anatomy & Physiology II	3
ACB 512	Integrative Anatomy Lab II	1
ACP 502	Professional Practice I	2
ACC 502	Clinical Assistantship I	1.5
TOTAL		15.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
ACF 504	Chinese Medicine Diagnosis	2
ACT 503	Acupuncture Channels & Points III	2
ACT 513	Acupuncture Techniques III	2
ACT 523	East Asian Medical Bodywork III	0.5
ACS 503	Self-Care III: Qi Gong	0.5
BIO 151E	General Biology	3
ACB 711	Patient Assessment	2
ACP 503	Professional Practice II	2
ACC 503	Clinical Assistantship II	1.5
ACA 501	Level I Comprehensive Exam	0
TOTAL		15.5

Year II — fall

COURSE	TITLE	CREDIT HOURS
ACF 601	Chinese Medicine Treatment of Disease I	3
ACT 601	Acupuncture Channel Treatment	2
ACT 602	Acupuncture Clinical Practice I	2
ACH 501	Introduction to Chinese Herbal Medicine	2
ACB 601	Biomedical Treatment of Disease I	3
ACB 611	Acupuncture Integrative Pain Management I	2
ACP 601	Evidence-Informed Practice in Acupuncture	3
ACC 601	Clinical Assistantship III	1.5
TOTAL		18.5

Year II — spring

COURSE	TITLE	CREDIT HOURS
ACF 602	Chinese Medicine Treatment of Disease II	3
ACT 602	Acupuncture Clinical Practice II	2
ACH 502	Chinese Herbal Materia Medica I	4
ACB 602	Biomedical Treatment of Disease II	3
ACB 612	Acupuncture Integrative Pain Management II	2
ACP 602	Psychology & Clinical Counseling	2
ACC 602	Clinical Assistantship IV	1
ACC 651	ACU/CHM Clinical Internship I	1.5
ACT 571	Japanese Acupuncture I	2
TOTAL		18.5

Year II — summer

COURSE	TITLE	CREDIT HOURS
ACF 603	Chinese Medicine Treatment of Disease III	3
ACH 503	Chinese Herbal Materia Medica II	4

ACB 603	Biomedical Treatment of Disease III	3
ACB 613	Acupuncture Integrative Pain Management III	2
ACP 603	Patient Provider Relationship	2
ACC 653	ACU/CHM Clinical Internship II	3
ACA 601	Level II Comprehensive Exam	0
ACT 572	Japanese Acupuncture II**	2
TOTAL		17/19**

Year III —fall

COURSE	TITLE	CREDIT HOURS
ACF 701	Survey of Classical Texts	1
ACF 702	Case Management	2
ACH 601	Chinese Herbal Formulas I	3
ACS 601	Self-Care IV: Integrative Nutrition I	1.5
ACB 701	Mechanisms of Acupuncture	2
ACC 753	ACU/CHM Clinical Internship III	3
ACT 573	Japanese Acupuncture III**	2
TOTAL		12.5/14.5**

Year III —spring

COURSE	TITLE	CREDIT HOURS
ACH 602	Chinese Herbal Formulas II	3
ACH 611	Chinese Herbal Medicine Dispensary Assistantship	0.5
ACS 602	Self-Care V: Integrative Nutrition II	1.5
ACB 712	Introduction to Public Health	3
ACB 702	Chemistry for Health Professions	3
ACC 763	ACU/CHM Clinical Internship IV	3
ACT 574	Japanese Acupuncture IV**	2
TOTAL		14/16**

Year III —summer

COURSE	TITLE	CREDIT HOURS
ACH 603	Chinese Herbal Formulas III	3
ACH 612	Chinese Herbal Patent Medicines	2
ACB 703	Biophysics of Acupuncture	2
ACP 711	Collaborative Care	3
ACC 773	ACU/CHM Clinical Internship V	3
ACA 701	CHM Comprehensive Examination	0
ACT 575	Japanese Acupuncture V**	2
TOTAL		13/15**

Year IV—fall

COURSE	TITLE	CREDIT HOURS
ACH 701	Chinese Herbal Medicine Treatment of Disease I	3
ACH 711	Chinese Herbal Medicine Formula Writing	2
ACP 701	Practice Management I	2
ACP 703	NCCAOM Board Review I	1
ACC 853	ACU/CHM Clinical Internship VI	3
TOTAL		11

Year IV—spring

COURSE	TITLE	CREDIT HOURS
ACH 702	Chinese Herbal Medicine Treatment of Disease II	3
ACH 712	Chinese Herbal Medicine Classical Texts	2
ACP 701	Practice Management II	2
ACP 704	NCCAOM Board Review II	1
ACP 705	NCCAOM Board Review III	1

ACC 863	ACU/CHM Clinical Internship VII	3
TOTAL		12

Year IV—summer

COURSE	TITLE	CREDIT HOURS
ACH 703	Chinese Herbal Medicine Treatment of Disease III	3
ACC 876	ACU/CHM Clinical Internship VIII	6
TOTAL		9

Total credits to complete degree requirements: MAc CHM/MAc CHM with JAS Concentration - 174.5/182.5**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Curriculum: Master of Acupuncture and Chinese Herbal Medicine (MAc CHM) - Accelerated Program

Year I — fall

COURSE	TITLE	CREDIT HOURS
ACF 501	Cultural Foundations of Chinese Medicine	2
ACF 502	Chinese Medicine Theory I	3
ACT 501	Acupuncture Channels & Points I	2
ACT 511	Acupuncture Techniques I	2
ACT 521	East Asian Medical Bodywork I	0.5
ACH 501	Introduction to Chinese Herbal Medicine	2
ACS 501	Self-Care I: Qi Gong	0.5
BIO 110E	Anatomy & Physiology I	3
ACB 511	Integrative Anatomy Lab I	1
ACP 501	Acupuncture Patient-Centered Care	1
ACC 501	Introduction to Clinical Assistantship	1
TOTAL		18

Year I — spring

COURSE	TITLE	CREDIT HOURS
ACF 503	Chinese Medicine Theory II	3
ACT 502	Acupuncture Channels & Points II	2
ACT 512	Acupuncture Techniques II	2
ACT 522	East Asian Medical Bodywork II	0.5
ACH 502	Chinese Herbal Materia Medica I	4
ACS 502	Self-Care II: Qi Gong	0.5
BIO 210E	Anatomy & Physiology II	3
ACB 512	Integrative Anatomy Lab II	1
ACP 502	Professional Practice	2
ACC 502	Clinical Assistantship I	1.5
ACT 571	Japanese Acupuncture I	2
TOTAL		21.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
ACF 504	Chinese Medicine Diagnosis	2
ACT 503	Acupuncture Channels & Points III	2
ACT 513	Acupuncture Techniques III	2
ACT 523	East Asian Medical Bodywork III	0.5
ACH 503	Chinese Herbal Materia Medica II	4
ACS 503	Self-Care III: Qi Gong	0.5
BIO 151E	General Biology	3

ACB 711	Patient Assessment	2
ACP 503	Professional Practice II	2
ACC 503	Clinical Assistantship II	1.5
ACA 501	Level I Comprehensive Exam	0
TOTAL		19.5

Year II — fall

COURSE	TITLE	CREDIT HOURS
ACF 601	Chinese Medicine Treatment of Disease I	3
ACT 601	Acupuncture Channel Treatment	2
ACT 602	Acupuncture Clinical Practice I	2
ACH 601	Chinese Herbal Formulas I	3
ACS 601	Self-Care IV: Integrative Nutrition I	1.5
ACB 601	Biomedical Treatment of Disease I	3
ACB 611	Acupuncture Integrative Pain Management I	2
ACP 601	Evidence-Informed Practice in Acupuncture	3
ACC 601	Clinical Assistantship III	1.5
TOTAL		21

Year II — spring

COURSE	TITLE	CREDIT HOURS
ACF 602	Chinese Medicine Treatment of Disease II	3
ACT 602	Acupuncture Clinical Practice II	2
ACH 602	Chinese Herbal Formulas II	3
ACH 611	Chinese Herbal Medicine Dispensary Assistantship	0.5
ACS 602	Self-Care V: Integrative Nutrition II	1.5
ACB 602	Biomedical Treatment of Disease II	3
ACB 612	Acupuncture Integrative Pain Management II	2
ACP 602	Psychology & Clinical Counseling	2
ACC 602	Clinical Assistantship IV	1
ACC 651	ACU/CHM Clinical Internship I	1.5
TOTAL		19.5

Year II — summer

COURSE	TITLE	CREDIT HOURS
ACF 603	Chinese Medicine Treatment of Disease III	3
ACH 603	Chinese Herbal Formulas III	3
ACH 612	Chinese Herbal Patent Medicines	2
ACB 603	Biomedical Treatment of Disease III	3
ACB 613	Acupuncture Integrative Pain Management. III	2
ACP 603	Patient Provider Relationship	2
ACC 656	ACU/CHM Clinical Internship II	6
ACA 601	Level II Comprehensive Exam	0
ACA 701	CHM Comprehensive Examination	0
TOTAL		21

Year III — fall

COURSE	TITLE	CREDIT HOURS
ACF 701	Survey of Classical Texts	1
ACF 702	Case Management	2
ACH 701	Chinese Herbal Medicine Treatment of Disease I	3
ACH 711	Chinese Herbal Medicine Formula Writing	2
ACB 701	Mechanisms of Acupuncture	2
ACP 701	Practice Management I	2
ACP 703	NCCAOM Review I	1
ACC 756	ACU/CHM Clinical Internship III	6

TOTAL		19

Year III — spring

COURSE	TITLE	CREDIT HOURS
ACH 702	Chinese Herbal Medicine Treatment of Disease II	3
ACH 712	Chinese Herbal Medicine Classical Texts	2
ACB 712	Introduction to Public Health	3
ACB 702	Chemistry for the Health Professions	3
ACP 702	Practice Management II	2
ACP 704	NCCAOM Review II	1
ACP 705	NCCAOM Review III	1
ACC 766	ACU/CHM Clinical Internship IV	6
TOTAL		21

Year III — summer

COURSE	TITLE	CREDIT HOURS
ACH 703	Chinese Herbal Medicine Treatment of Disease III	3
ACB 703	Biophysics of Acupuncture	2
ACP 711	Collaborative Care	3
ACC 776	ACU/CHM Clinical Internship V	6
TOTAL		14

Total credits to complete degree requirements: 174.5 credit hours

**CPR/First Aid certification must be current throughout all Clinical Internships.*

Doctor of Acupuncture

Curriculum: Master of Acupuncture/Doctor of Acupuncture (MAc DAc)

Year I — fall

COURSE	TITLE	CREDIT HOURS
ACF 501	Cultural Foundations of Chinese Medicine	2
ACF 502	Chinese Medicine Theory I	3
ACT 501	Acupuncture Channels & Points I	2
ACT 511	Acupuncture Techniques I	2
ACT 521	East Asian Medical Bodywork I	0.5
ACH 501	Introduction to Chinese Herbal Medicine	2
ACS 501	Self-Care I: Qi Gong	0.5
BIO 110E	Anatomy & Physiology I	3
ACB 511	Integrative Anatomy Lab I	1
ACP 501	Acupuncture Patient-Centered Care	1
ACC 501	Introduction to Clinical Assistantship	1
TOTAL		18

Year I — spring

COURSE	TITLE	CREDIT HOURS
ACF 503	Chinese Medicine Theory II	3
ACT 502	Acupuncture Channels & Points II	2
ACT 512	Acupuncture Techniques II	2
ACT 522	East Asian Medical Bodywork II	0.5
ACS 502	Self-Care II: Qi Gong	0.5
BIO 210E	Anatomy & Physiology II	3
ACB 512	Integrative Anatomy Lab II	1
ACP 502	Professional Practice I	2

ACC 502	Clinical Assistantship I	1.5
ACT 571	Japanese Acupuncture I	2
TOTAL		17.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
ACF 504	Chinese Medicine Diagnosis	2
ACT 503	Acupuncture Channels & Points III	2
ACT 513	Acupuncture Techniques III	2
ACT 523	East Asian Medical Bodywork III	0.5
ACS 503	Self-Care II I: Qi Gong	0.5
BIO 151E	General Biology	3
ACB 711	Patient Assessment	2
ACP 503	Professional Practice II	2
ACC 503	Clinical Assistantship II	1.5
ACT 572	Japanese Acupuncture II**	2
ACA 501	Level I Comprehensive Exam	0
TOTAL		15.5/17.5**

Year II — fall

COURSE	TITLE	CREDIT HOURS
ACF 601	Chinese Medicine Treatment of Disease I	3
ACT 601	Acupuncture Channel Treatment	2
ACT 602	Acupuncture Clinical Practice I	2
ACS 601	Self-Care IV: Integrative Nutrition I	1.5
ACB 601	Biomedical Treatment of Disease I	3
ACB 611	Acupuncture Integrative Pain Management I	2
ACP 601	Evidence-Informed Practice in Acupuncture	3
ACC 601	Clinical Assistantship III	1.5
ACT 573	Japanese Acupuncture III**	2
TOTAL		18/20**

Year II — spring

COURSE	TITLE	CREDIT HOURS
ACF 602	Chinese Medicine Treatment of Disease II	3
ACT 602	Acupuncture Clinical Practice II	2
ACS 602	Self-Care V: Integrative Nutrition II	1.5
ACB 602	Biomedical Treatment of Disease II	3
ACB 612	Acupuncture Integrative Pain Management II	2
ACP 602	Psychology & Clinical Counseling	2
ACC 611	Acupuncture Clinical Internship I	1.5
ACT 574	Japanese Acupuncture IV**	2
TOTAL		15/17**

Year II — summer

COURSE	TITLE	CREDIT HOURS
ACF 603	Chinese Medicine Treatment of Disease III	3
ACB 603	Biomedical Treatment of Disease III	3
ACB 613	Acupuncture Integrative Pain Management III	2
ACP 603	Patient Provider Relationship	2
ACC 613	Acupuncture Clinical Internship II	4.5
ACA 601	Level II Comprehensive Exam	0
ACT 575	Japanese Acupuncture V**	2
TOTAL		14.5/16.5**

Year III — fall

COURSE	TITLE	CREDIT HOURS
ACF 701	Survey of Classical Texts,	1
ACF 702	Case Management	2
ACB 701	Mechanisms of Acupuncture	2
ACP 701	Practice Management I	2
ACP 703	NCCAOM Board Review I	1
ACC 713	Acupuncture Clinical Internship III	3
TOTAL		11

Year III — spring

COURSE	TITLE	CREDIT HOURS
ACB 712	Introduction to Public Health	3
ACP 701	Practice Management II	2
ACP 704	NCCAOM Board Review II	1
ACC 723	Acupuncture Clinical Internship IV	3
TOTAL		9

Year III — summer

COURSE	TITLE	CREDIT HOURS
ACP 711	Collaborative Care	3
ACC 736	Clinical Internship V	6
TOTAL		9

Year IV — fall

COURSE	TITLE	CREDIT HOURS
ACB 801	Integrative Pain Management I	2
ACB 803	Advanced Diagnostic Studies	2
ACP 812	Healthcare Systems	3
ACC 821	Integrative Medicine Case Management I	2
TOTAL		9

Year IV —spring

COURSE	TITLE	CREDIT HOURS
ACB702	Chemistry for the Health Professions	3
ACB 802	Integrative Pain Management II	2
ACP 811	Practice-Based Learning and Improvement	2
ACC 822	Integrative Medicine Case Management II2	
TOTAL		9

Total credits to complete degree requirements: MAc DAc/MAc DAc with JAS Concentration – 145.5/153.5**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

Curriculum: Master of Acupuncture and Chinese Herbal Medicine/Doctor of Acupuncture (MAc CHM DAc)

Year I — fall

COURSE	TITLE	CREDIT HOURS
ACF 501	Cultural Foundations of Chinese Medicine	2
ACF 502	Chinese Medicine Theory I	3
ACT 501	Acupuncture Channels & Points I	2
ACT 511	Acupuncture Techniques I	2
ACT 521	East Asian Medical Bodywork I	0.5
ACS 501	Self-Care I: Qi Gong	0.5
BIO 110E	Anatomy & Physiology I	3
ACB 511	Integrative Anatomy Lab I	1

ACP 501	Acupuncture Patient-Centered Care	1
ACC 501	Introduction to Clinical Assistantship	1
TOTAL		16

Year I — spring

COURSE	TITLE	CREDIT HOURS
ACF 503	Chinese Medicine Theory II	3
ACT 502	Acupuncture Channels & Points II	2
ACT 512	Acupuncture Techniques II	2
ACT 522	East Asian Medical Bodywork II	0.5
ACS 502	Self-Care II: Qi Gong	0.5
BIO 210E	Anatomy & Physiology II	3
ACB 512	Integrative Anatomy Lab II	1
ACP 502	Professional Practice I	2
ACC 502	Clinical Assistantship I	1.5
TOTAL		15.5

Year I — summer

COURSE	TITLE	CREDIT HOURS
ACF 504	Chinese Medicine Diagnosis	2
ACT 503	Acupuncture Channels & Points III	2
ACT 513	Acupuncture Techniques III	2
ACT 523	East Asian Medical Bodywork III	0.5
ACS 503	Self-Care III: Qi Gong	0.5
BIO 151E	General Biology	3
ACB 711	Patient Assessment	2
ACP 503	Professional Practice II	2
ACC 503	Clinical Assistantship II	1.5
ACA 501	Level I Comprehensive Exam	0
TOTAL		15.5

Year II — fall

COURSE	TITLE	CREDIT HOURS
ACF 601	Chinese Medicine Treatment of Disease I	3
ACT 601	Acupuncture Channel Treatment	2
ACT 602	Acupuncture Clinical Practice I	2
ACH 501	Introduction to Chinese Herbal Medicine	2
ACB 601	Biomedical Treatment of Disease I	3
ACB 611	Acupuncture Integrative Pain Management I	2
ACP 601	Evidence-Informed Practice in Acupuncture	3
ACC 601	Clinical Assistantship III	1.5
TOTAL		18.5

Year II — spring

COURSE	TITLE	CREDIT HOURS
ACF 602	Chinese Medicine Treatment of Disease II	3
ACT 602	Acupuncture Clinical Practice II	2
ACH 502	Chinese Herbal Materia Medica I	4
ACB 602	Biomedical Treatment of Disease II	3
ACB 612	Acupuncture Integrative Pain Management II	2
ACP 602	Psychology & Clinical Counseling	2
ACC 602	Clinical Assistantship IV	1
ACC 651	ACU/CHM Clinical Internship I	1.5
ACT 571	Japanese Acupuncture I	2
TOTAL		20.5

Year II — summer

COURSE	TITLE	CREDIT HOURS
ACF 603	Chinese Medicine Treatment of Disease III	3
ACH 503	Chinese Herbal Materia Medica II	4
ACB 603	Biomedical Treatment of Disease III	3
ACB 613	Acupuncture Integrative Pain Management III	2
ACP 603	Patient Provider Relationship	2
ACC 653	ACU/CHM Clinical Internship II	3
ACA 601	Level II Comprehensive Exam	0
ACT 572	Japanese Acupuncture II**	2
TOTAL		17/19**

Year III — fall

COURSE	TITLE	CREDIT HOURS
ACF 701	Survey of Classical Texts	1
ACF 702	Case Management	2
ACH 601	Chinese Herbal Formulas I	3
ACS 601	Self-Care IV: Integrative Nutrition I	1.5
ACB 701	Mechanisms of Acupuncture	2
ACC 753	ACU/CHM Clinical Internship III	3
ACP 812	Healthcare Systems	3
ACT 573	Japanese Acupuncture III**	2
TOTAL		15.5/17.5**

Year III — spring

COURSE	TITLE	CREDIT HOURS
ACH 602	Chinese Herbal Formulas II	3
ACH 611	Chinese Herbal Medicine Dispensary Assistantship	0.5
ACS 602	Self-Care V: Integrative Nutrition II	1.5
ACB 712	Introduction to Public Health	3
ACB 702	Chemistry for the Health Professions	3
ACC 763	ACU/CHM Clinical Internship IV	3
ACT 574	Japanese Acupuncture IV**	2
TOTAL		14/16**

Year III — summer

COURSE	TITLE	CREDIT HOURS
ACH 603	Chinese Herbal Formulas III	3
ACH 612	Chinese Herbal Patent Medicines	2
ACB 703	Biophysics of Acupuncture	2
ACP 711	Collaborative Care	3
ACC 773	ACU/CHM Clinical Internship V	3
ACA 701	CHM Comprehensive Examination	0
ACT 575	Japanese Acupuncture V**	2
TOTAL		13/15**

Year IV — fall

COURSE	TITLE	CREDIT HOURS
ACH 701	Chinese Herbal Medicine Treatment of Disease I	3
ACH 711	Chinese Herbal Medicine Formula Writing	2
ACB 801	Integrative Pain Management I	2
ACB 803	Advanced Diagnostic Studies	2
ACP 701	Practice Management I	2
ACP 703	NCCAOM Board Review I	1

ACC 853	ACU/CHM Clinical Internship VI	3
ACC 821	Integrative Medicine Case Management I	*2*
TOTAL		17

Year IV — spring

COURSE	TITLE	CREDIT HOURS
ACH 702,	Chinese Herbal Medicine Treatment of Disease II	3
ACH 712	Chinese Herbal Medicine Classical Texts	2
ACB 802	Integrative Pain Management II	2
ACP 701	Practice Management II	2
ACP 811	Practice-Based Learning and Improvement	2
ACP 704	NCCAOM Board Review II	1
ACP 705	NCCAOM Board Review III	1
ACC 863	ACU/CHM Clinical Internship VII	3
ACC 822	Integrative Medicine Case Management II	2
TOTAL		18

Year IV — summer

COURSE	TITLE	CREDIT HOURS
ACH 703	Chinese Herbal Medicine Treatment of Disease III	3
ACC 876	ACU/CHM Clinical Internship VIII	6
TOTAL		9

Total credits to complete degree requirements: MAc CHM DAc/MAc CHM DAc with JAS Concentration 189.5/197.5**

**CPR/First Aid certification must be current throughout all Clinical Internships.*
*** Japanese Acupuncture Concentration Requirement*

MCPHS-Worcester
School of Healthcare Business and Technology

Michael Spooner, EdD, MHA; Dean, Associate Professor

Pamela Charney, PhD, MS, RDN, FAND; Associate Professor of Health Informatics & Technology; MSHI Program Director

Christina Mullikin, MBA; Assistant Professor of Healthcare Administration; DHA Program Director

Degree and Certificate Programs

Master of Business Administration in Healthcare Technology
Master of Science in Clinical Management
Master of Science in Data Science
Master of Science in Health Informatics (MSHI)
Doctor of Healthcare Administration (DHA)
Doctor of Medical Science (DMSc)
Certificate in AI and Healthcare
Certificate in Clinical Informatics
Certificate in Health Data Analytics & Artificial Intelligence
Certificate in Healthcare Innovation & Leadership
Certificate in Quality Assurance & Quality Control

The School of Healthcare Business and Technology was established in March 2018 to provide undergraduate and graduate students with a unique blend of business competencies and healthcare knowledge. There is high demand for professionals who understand healthcare systems and processes. The School offers both undergraduate and graduate programs. These programs provide didactic coursework combined with practical experiences, designed to provide students with skills and capabilities that easily transfer to the workplace.

Master of Business Administration (MBA) in Healthcare Technology

The STEM-eligible Master of Business Administration (MBA) in Healthcare Technology is a 37-credit year-round program offered online and on the Boston Campus. The online STEM-eligible MBA can be completed part-time or full-time at a rate that best suits a student's learning and professional needs. The MBA in Healthcare Technology reflects health technology and management, shifting from a healthcare focus to include a core of management science, health technology, data science, and applied analytics.

Admission Requirements

Applicants are encouraged to apply before the application due date for full consideration. Applications are reviewed on a rolling basis until the program capacity has been reached.

- Bachelor's degree from a regionally accredited institution, or equivalent
- Minimum undergraduate GPA of 3.0
- Transfer credits are not accepted

Graduates of the program will be able to:

- Analyze and interpret data derived from health encounters and business operations to identify and support organizational decision-making;
- Evaluate innovative technologies and recommend solutions to improve healthcare delivery and organizational efficiency;
- Demonstrate proficiency in data science, analytics, artificial intelligence, and information systems for management and decision-making;
- Optimize resource allocations based on financial management and health economics principles;
- Design and implement quality improvement initiatives leveraging statistics, data analytics, and health informatics to address complex challenges;

- Assess the ethical and legal implications of technology adoption, including issues related to data privacy and security;
- Formulate strategies for managing change and innovation in organizations transforming to meet the needs of their stakeholders;
- Evaluate the impact of emerging technologies on healthcare business models and develop adaptive strategies.

Curriculum: Master of Business Administration in Healthcare Technology

These courses are required for students in the MBA program.

COURSE	TITLE	CREDIT HOURS
HTM 700	Introduction to US Healthcare System	1
HTM 717	Economic Evaluation: Global Perspectives	3
HTM 720	Business Statistics & Data Driven Decision-Making	3
HTM 727	Strategic Finance for Health Tech & Health Sciences	3
HTM 747	Management Science: Operations	3
HTM 757*	Managing and Leading Change	3
HTM 800	Professional Practice Seminar	0
HTM 820	Revenue Cycle: Finance & Accounting	3
HTM 737	Data Science & Analytics for Business Decision Making	3
HTM 767*	Ethics and Law for Health Tech	3
HTM 802	Professional Practicum **OR**	
HTM 803	Collaborative Research	3
HTM 810	Project Management	3
HTM 830*	Medical Devices and Technology	3
HTM 850	Strategic Management Capstone	3
* Courses can be replaced by certificate courses that represent specializations		
TOTAL		37

Master of Science in Clinical Management

The Master of Science in Clinical Management is a 36-credit year-round program offered online and can be completed in as few as 24 months. Clinical Management can be described as being at the epicenter of healthcare delivery organizations, including hospitals, private practice, and other related settings. Clinical managers are focused on change management, understanding the healthcare environment, leadership of interprofessional and collaborative teams and managing operations across multiple levels of care. The Master of Science in Clinical Management (MSCM) program was designed to develop clinical leadership in this critical area of healthcare management. The program focuses on core concepts in clinical management in to meet the complex demands of the professional healthcare setting, with particular emphasis on the care-path and the patient.

Admission Requirements

Applicants are encouraged to apply before the application due date for full consideration. Applications are reviewed on a rolling basis until the program capacity has been reached.

- Bachelor's degree required
- Undergraduate GPA of 3.0
- Management experience in healthcare or closely aligned field preferred
- Transfer credits are not accepted for this program

Graduates of the program will be able to:

- Develop and apply practical approaches to population-level health, including patient-centered values;
- Demonstrate ethical decision-making informed by data analysis, critical thinking, and evidence-based approaches;
- Apply analytical skills in evaluation and dissemination of solutions to core challenges in the delivery of healthcare including value, revenue, and health outcomes;
- Demonstrate strategy balancing the competing priorities of health system stakeholders including patients, providers, and payers in the clinical environment;

- Communicate and disseminate critical information to multiple audiences;
- Provide leadership and guidance for delivery of care that meets the needs of patients, providers, and communities served.

Curriculum: Master of Science in Clinical Management (Online)

COURSE	TITLE	CREDIT HOURS
HCM 710	Health Systems: Policy and Management	3
HCM 720	Organizational Dynamics	3
HCM 734	Value-Based Healthcare	3
HCM 740	Managing Teams, Performance, and Human Capital	3
HCM 752	Quality Improvement in Healthcare	3
HCM 763	Leading Through Crisis and Change	3
HCM 770	Population Health and Risk Management	3
HCM 718	Leadership in Healthcare Administration	3
HCM 821	Clinical Informatics and Data Analysis	3
HCM 825	Managing and Delivering Engaged Care	3
HCM 842	Practice Management and Leadership	3
HCM 850	Strategic Management Capstone	3
TOTAL		36

Master of Science in Data Science

The Master of Science in Data Science is an online 36-credit STEM-eligible program that prepares students to recognize their potential by pursuing bold ideas to address the complex challenges in healthcare and life sciences powered by their understanding of data science. Students will apply their knowledge to catalyze fundamental changes that improve research and insight through advanced data analytics, data modeling, and machine learning applications.

The MS curriculum is designed to provide a foundational understanding of data science and programming that can be used to accelerate applications in professional practice. Students begin by exploring coding applications in health and life science fields. Students are encouraged to participate in an optional fieldwork course, where experience in data science is expanded.

Graduates with a Masters in Data Science have a broad spectrum of career options that span healthcare, life sciences, and business. The degree may also help experienced informaticists and managers advance their careers by using data. Opportunities include technology, consumer health, healthcare finance, insurance companies, and biotechnology companies. There are also related sectors, including software, consulting, and biotech and life science organizations, that are increasingly relying on data and data science, according to job postings and the National Labor Statistics. Typical career profiles include health lead data analysts, clinical data managers, health data managers, data science consulting, and senior health quality and policy analysts, among many others.

Upon successful completion of the MS in Data Science program, graduates will be able to:
Apply statistical modeling, data management, and data manipulation to support actionable insight;

- Design advanced workflows and applications to solve complex challenges in life sciences and healthcare;
- Lead teams across business functions to define problems, identify appropriate data, analyze sufficiency, and create visualizations to drive decision-making;
- Communicate effectively with multiple constituencies about properties of computer coding, task workflows, databases, and issues with data, including sufficiency, representation, and distribution;
- Explain machine learning, algorithms, and ethical challenges they represent in context with data science and their impacts on society;
- Critically evaluate data integrity and sufficiency and make recommendations to resolve issues.

Admission Requirements

Applicants are encouraged to apply before the application due date for full consideration. Applications are reviewed on a rolling basis until the program capacity has been reached.

- Bachelor's degree required from a regionally accredited institution

- Undergraduate GPA of 3.0 or higher
- A personal statement addressing the motivation for study
- A resume demonstrating professional accomplishments
- Transcripts from all previous institutions of higher learning
- College-level statistics and algebra are required.
- Experience in healthcare, informatics, or a related field is preferred.
- Transfer credits are not accepted for this program

Curriculum: Master of Science in Data Science

COURSE	TITLE	CREDIT HOURS
DSC 675	Applied Data Science	3
HIN 720	Health Data Science: Programming and Database Structure	3
DSC 680	Biostats: Programming with R	3
HIN 740	Health Data, Security & Ethics	3
DSC 745	Python and Machine Learning	3
HIN 764	Artificial Intelligence: Evaluation and Applications	3
DSC 762	Big Data: Architecture and Cloud	3
DSC 823	Artificial Intelligence	3
DSC 840	Software Engineering	3
DSC 804	Genomic Data and Precision Med	3
DSC 850	Capstone Project (class-based)	3
DSC 800	Applied Data Science Experience (or elective)	3
TOTAL		36

Master of Science in Health Informatics (MSHI)

The Master of Science in Health Informatics (MSHI) is a 31-credit program offered in an online asynchronous format and can be completed in as few as 20 months. This program addresses the importance of informatics in healthcare delivery, professional collaboration and team-based care. The MSHI prepares collaborative leaders to address challenges in healthcare through the application of informatics, data science, and technology. The program culminates in an applied informatics capstone project.

Upon successful completion of the MSHI program, graduates will be able to:

- Interpret, evaluate, and judiciously act upon statutory, regulatory, and other compliance requirements to ensure ethical and equitable outcomes for patients, providers, and payers;
- Identify, explain, and use data to illustrate barriers to care and support the development of a health system that reflects and adequately serves constituents;
- Demonstrate data query, analysis, and display to inform complex decision-making with relevant data collected via electronic health records and other related systems;
- Design, develop and implement interfaces between clinical data and key constituents in clinical and managerial settings to support patient and family-centered solutions;
- Translate and interpret human interactions with and within healthcare systems by retrieving and analyzing health data, reported clinical outcomes, and patient experience data;
- Collaboratively drive opportunities to expand team-based and distributed decision-making with informatics, data retrieval, critical analysis, and display;
- Practice interdisciplinary and collaborative leadership in seeking and developing innovative and entrepreneurial solutions to complex challenges utilizing informatics, data science, and technology.

The MSHI program, with the support of the Program Planning and Development Team, will seek professional accreditation through the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

Admission Requirements

Applicants are encouraged to apply before the application due date for full consideration. Applications are reviewed on a rolling basis until the program capacity has been reached.

- Bachelor's degree required from a regionally accredited institution
- Undergraduate GPA of 3.0 or higher
- Completed recommendations – one academic, one professional
- A personal statement addressing the motivation for study
- Resume
- Transcripts from all previous institutions of higher learning
- Undergraduate statistics or MAT261E
- Medical terminology – any online certificate granting course or MTC210E
- Transfer credits are not accepted for this program

Curriculum: Master of Science in Health Informatics (MSHI)

Master of Science in Health Informatics Required Courses (31 credit hours in total)

COURSE	TITLE	CREDIT HOURS
HIN 710	Essentials of Healthcare Informatics	3
HCM 710	Health Systems Policy and Management	3
HIN 720	Health Data Science: Programming and Database Structure	3
HIN 738	Leading Change in Healthcare Informatics	3
HIN 750	Clinical Information Systems	3
HIN 762	Introduction to Health Data Analytics & Artificial Intelligence	3
HIN771	Consumer Focused Tools and Systems	3
HIN773	Human Factors Design and Interoperability	3
HIN775	Project Management for Health Informatics	3
HIN 799	Orientation to Field Study/Capstone	1
HIN 801	Applied Informatics Capstone Project (Classroom-Based)	3
TOTAL		31

Doctor of Healthcare Administration (DHA)

This part-time, year-round 54-credit doctoral program prepares healthcare professionals to become leaders through an interdisciplinary education leading to careers in healthcare administration. This program integrates doctoral research courses throughout the curriculum. The doctoral research core offers students the opportunity to develop and apply practical research skills and culminates in an Applied Practice-Based Research Project (APBR). The professional competencies identified by the American College of Healthcare Executives and the Healthcare Leadership Alliance are addressed throughout the doctoral core.

Mission - The DHA program develops healthcare leaders to become practicing scholars through an interdisciplinary and interprofessional curriculum that incorporates evidence-based research and scholarship focused on the challenges of healthcare.

Vision - The DHA at MCPHS is a highly respected doctoral degree program that develops students as visionary leaders capable of handling the complex challenges of healthcare.

Values - The students and faculty in the DHA program share a distinct focus on scholarship, lifelong learning, reflective practice, and visionary leadership, and approach challenges in healthcare delivery with the professional ethics and integrity patients and stakeholders demand.

Upon successful completion of the DHA program, graduates will be able to:

- Demonstrate critical thinking and critical analyses through the identification, assessment, and translation of evidence to solutions that address the complex practice-based problems of healthcare;
- Advance professional practice in healthcare through the collection and collation of available data, synthesis of evidence, and demonstration of support for complex decision-making in the evolving healthcare environment;
- Model collaboration, communication and motivational approaches that lead teams and colleagues to perform at the highest levels and achieve shared goals;

- Integrate the principles of quality improvement in leading, innovating, and developing solutions to improve the delivery of healthcare;
- Practice interdisciplinary and interprofessional leadership in pursuit of sustainable change in healthcare delivery and health services organizations;
- Incorporate current technology in developing solutions to healthcare administration and leadership challenges, while maintaining professional ethics and standards;
- Demonstrate knowledge of healthcare finance, accounting, and general business principles in addressing the challenges of healthcare.

Admission Requirements
Prospective applicants should have experience working in a healthcare environment, such as being a credentialed health professional, experienced educator, or a researcher in a health-related field. Admission decisions are based on the following requirements:

- An earned masters or doctorate degree from a regionally accredited college or university
- A minimum overall GPA of 3.0 in previous coursework
- Three to five years of healthcare-related work experience
- A minimum TOEFL (Test of English as a Foreign Language) score of 90 (Internet-based), 213 (computer-based) or 550 (written) for all candidates for whom English is not the primary language.

Transfer credits may be accepted on a limited basis, and only when all of the following criteria have been met: The coursework was completed at a regionally accredited institution at the doctoral level with a grade of B, or better. The syllabus demonstrates significant similarity to a required DHA course and has not been applied to any other credential. Any transfer credit request must be accompanied by an official transcript and will be reviewed by the program director.

Curriculum: Doctor of Healthcare Administration (DHA)
The 54-credit DHA program includes a one-credit orientation and 4 distinct areas of study: Healthcare Systems and Environment, Healthcare Leadership and Finance, Health Systems Operations and Data Analytics, and the Doctoral Research Core. Each area includes required and elective courses. Several 1-credit courses in contemporary topics are also offered as electives.

Curriculum: Doctor of Healthcare Administration (DHA)

Doctor of Healthcare Administration Required Courses (54 credit hours in total)

Introduction to Doctoral Studies (1 credit)

COURSE	TITLE	CREDIT HOURS
HCM 799	Orientation to Doctoral Studies	1
TOTAL		1

Healthcare Systems and Environments of Care (choose 3 courses, 9 credits)

COURSE	TITLE	CREDIT HOURS
HCM 832	Global Comparative Healthcare Seminar	3
HCM 876	Quality Improvement in Healthcare Organizations	3
HCM 880	Patient Safety & Risk Management	3
HCM 884	Epidemiology & Population Health	3
HCM 892	Health Policy, Law & Justice	3
TOTAL		9

Healthcare Leadership and Finance (choose 4 courses, 12 credits)

COURSE	TITLE	CREDIT HOURS
HCM 788	Budgeting & Planning in Healthcare	3
HCM 823	Human Resource Management for Healthcare Executives	3
HCM 868	Ethics for Healthcare Leaders	3
HCM 871	Innovating, Disrupting & Leading Change in Healthcare	3
HCM 874	Strategic Financial Management and Accountability	3

HCM 879	Leadership in Healthcare: Theoretical & Practical Applications	3
TOTAL		12

Operations and Data Analytics (choose 3 courses, 9 credits)

COURSE	TITLE	CREDIT HOURS
HCM 806	Strategic Planning for Health Organizations	3
HCM 828	Data Collection, Analysis & Representation in Healthcare	3
HCM 842	Practice Management and Leadership	3
HCM 845	Informed Decision Making for Healthcare Executives	3
TOTAL		9

Doctoral Research Core

COURSE	TITLE	CREDIT HOURS
HCM 802	Academic & Scholarly Writing in Healthcare	3
HCM 899	Introduction to Action Research	1
HCM 930	Applied Practice-Based Research Project I: Health-Related Research Methods	3
HCM 935	Applied Practice-Based Research Project II: Literature Search & Appraisal of the Evidence	3
HCM 940	Applied Practice-Based Research Project III: Project Proposal Defense & Human Ethics Training	3
HCM 945	Applied Practice-Based Research Project IV: Project Implementation & Evaluation	3
HCM 950	Applied Practice-Based Research Project V: Project Defense & Dissemination	3
TOTAL		19

Contemporary Topic Courses (choose 4 courses, 4 credits)

COURSE	TITLE	CREDIT HOURS
HCM 790A	Political Determinants of Health	1
HCM 790B	Healthcare Marketing for Executives	1
HCM 790C	Social Determinants of Health	1
HCM 790D	Non-Profit Management and Leadership	1
HCM 790E	Grant Writing	1
HCM 790F	Agile for Healthcare Organizations	1
HCM 790H	Disabilities in Healthcare	1
HCM 790I	Employee Burnout	1
HCM 790J	Change Management	1
HCM 790K	Emergency Management	1
HCM 790L	Wellness: Implications for the Healthcare System	1
TOTAL		4

Total credits to complete degree requirements: 54 credit hours

Doctor of Medical Science (DMSc)

The Doctor of Medical Science program is a 28-credit doctoral degree designed to empower licensed physician assistants to meet the demands of today's evolving healthcare field. The flexible DMSc program allows students an opportunity to build on their Physician Assistant Studies, to focus on advancing careers and the profession while maintaining employment. Students gain the experience, skills, and knowledge they will need to excel in a growing and competitive profession, positioning themselves for greater mobility as leaders of the profession. The DMSc program

prepares students to participate effectively in today's evolving healthcare workforce by focusing on strategic thinking, financial responsibility, professional advocacy, high-performing teams, outcomes assessment, quality improvement, and legal aspects, theories and policies.

The DMSc program is offered entirely online and is designed for practicing PAs. The format of this program allows students to continue working while advancing their education and focusing on a relevant practice-based problem. During the program, students are guided through a capstone project that helps them apply their newly acquired knowledge and skills to address an identified problem of practice. This hands-on research experience allows students to gain insight, and skills they will need to make significant contributions to interprofessional patient care throughout their careers.

Upon successful completion of the Doctor of Medical Science program, graduates will be able to:

- Identify, evaluate, and articulate practice-based problems in health professions and education.
- Determine proper research designs required to answer specific questions, explaining common challenges and considerations in the critical evaluation of evidence.
- Synthesize evidence in support of evidence-based solutions to identified problems of practice
- Disseminate evidence-based approaches in addressing practice-based problems and advancing professional practice.
- Apply interdisciplinary and interprofessional leadership by disseminating research findings to pursue sustainable change.
- Demonstrate scholarly writing and professional presentation skills in disseminating evidence in professional focus areas, including health professions education, health administration, or global health.

Admission Requirements

- Master of Physician Assistant Studies degree from a regionally accredited university;
- Minimum GPA: 3.0;
- Work experience as a PA preferred, but not mandatory;
- Proof of state licensure (or equivalent)
- Transfer credits are not accepted

Curriculum: Doctor of Medical Science (Online)

The DMSc curriculum is a 28-credit program, designed to better meet the demands of interprofessional and collaborative practice.

First Semester

COURSE	TITLE	CREDIT HOURS
HCM 801	Doctoral Writing	3
HCM 899	Introduction to Action Research	1
HCM 930	APBR I: Health Research Methods	3
TOTAL		7

Second Semester

COURSE	TITLE	CREDIT HOURS
HCM 935	APBR II: Lit Search and Appraisal of Evidence	3
	Elective	3
TOTAL		6

Third Semester

COURSE	TITLE	CREDIT HOURS
HCM 940	APBR III: Project Proposal Defense & Human Ethics	3
	Elective	3
TOTAL		6

Fourth Semester

COURSE	TITLE	CREDIT HOURS
HCM 945	APBR IV: Project Implementation and Evaluation	3
	Elective	3
TOTAL		6

Fifth Semester

COURSE	TITLE	CREDIT HOURS
HCM 950	APBR V: Project Defense and Dissemination	3
		3
TOTAL		3

Certificate in AI in Healthcare

The certificate in AI in Healthcare is a 10-credit online, asynchronous graduate certificate program. Students in this program evaluate current AI technologies, identify and discuss challenges in using AI for healthcare delivery, and build AI models to address problems drawn from practice. The certificate allows entrepreneurial professionals involved with direct care to apply cutting-edge AI technology to solve some of the most complex challenges in healthcare and gets students from the classroom to the lab where they will build their solutions. With a complete cycle of development from concept to AI model, students can apply their knowledge in their practice or workplace to transform care and patient experiences.

Admission Requirements

- Bachelor's degree required from a regionally accredited institution or concurrent enrollment in a PharmD or other first-professional degree program at MCPHS
- Undergraduate GPA of 3.0 or higher
- Transcripts from all previous institutions of higher learning
- A background in healthcare is helpful but not required

Curriculum: Certificate in Healthcare Innovation & Leadership

Spring Semester

COURSE	TITLE	CREDIT HOURS
DSC 436/736	AI in Healthcare	3
TOTAL		3

Summer Semester

COURSE	TITLE	CREDIT HOURS
DSC 738	AI Applications: Transforming Healthcare	3
TOTAL		3

Fall Semester

COURSE	TITLE	CREDIT HOURS
DSC 742	AI: Developing Solutions for the Future	3
DSC 742L	AI Development Lab	1
TOTAL		4

Certificate in Clinical Informatics

The certificate in Clinical Informatics is a 12-credit online, asynchronous graduate certificate program designed to equip students with essential skills and knowledge to enhance patient care through the application of technology. The certificate includes four core classes and 12 credits drawn from the MS in Health Informatics program and is an option for Worcester/Manchester PharmD students as an add-on certificate.

Admission Requirements

- Bachelor's degree from regionally accredited college or university OR concurrent enrollment in a PharmD or other first-professional degree program at MCPHS
- Minimum 3.0 GPA on a 4.0 scale

Curriculum: Certificate in Clinical Informatics

Fall Semester

COURSE	TITLE	CREDIT HOURS
HIN 710	Essentials of Health Informatics	3
TOTAL		3

Spring Semester

COURSE	TITLE	CREDIT HOURS
HIN 771	Consumer Focused Tools and Systems	3
HIN 775*	Project Management for Health Informatics	3
TOTAL		6

Summer Semester

COURSE	TITLE	CREDIT HOURS
HIN 773	Human Factors Design & Interoperability	3
TOTAL		12

* Can be completed the following spring

Certificate in Health Data Analytics & Artificial Intelligence

The certificate in Health Data Analytics is an online asynchronous program that provides essential skills required for professionals who will harness data-driven decision-making in an increasingly complex healthcare landscape. The certificate includes four core classes and 12 credits drawn from the MS in Health Informatics program and is an option for Worcester/Manchester PharmD students as an add-on certificate.

Admission Requirements

- Bachelor's degree from regionally accredited college or university OR concurrent enrollment in a PharmD or other first-professional degree program at MCPHS
- Minimum 3.0 GPA on a 4.0 scale

Curriculum: Certificate in Health Data Analytics & Artificial Intelligence

Fall Semester

COURSE	TITLE	CREDIT HOURS
HIN 720	Health Data Science – Programming & Database Structure	3
TOTAL		3

Spring Semester

COURSE	TITLE	CREDIT HOURS
HIN 762	Introduction to Health Data Analytics & Artificial Intelligence	3
HIN 764	Creating a Learning Healthcare System	3
TOTAL		6

Summer Semester

COURSE	TITLE	CREDIT HOURS
HIN 768	Global and Population Health	3
TOTAL		12

Certificate in Healthcare Innovation & Leadership

The certificate in Healthcare Innovation and Leadership is a 9-credit online, asynchronous graduate certificate program for working professionals in healthcare-related fields. The program aims to develop responsive healthcare leaders with a solid practical foundation in business, creative thinking, and entrepreneurial management. The program is designed for individuals who wish to build their leadership capabilities and advance their professional skills while addressing critical challenges in healthcare.

Admission Requirements

- Bachelor's degree required from a regionally accredited institution

- Transcripts from all previous institutions of higher learning
- Proficient English language skills
- Professional experience in healthcare or closely aligned field preferred

Curriculum: Certificate in Healthcare Innovation & Leadership

Spring Semester

COURSE	TITLE	CREDIT HOURS
HCM 719	Design Thinking for Healthcare	3
TOTAL		3

Summer Semester

COURSE	TITLE	CREDIT HOURS
HCM 729	Managing and Leading Healthcare Innovation	3
TOTAL		3

Fall Semester

COURSE	TITLE	CREDIT HOURS
HCM 739	Applied Healthcare Innovation Project	3
TOTAL		3

Certificate in Quality Assurance & Quality Control

This 12-credit online undergraduate certificate program is designed to allow students who meet the eligibility criteria to be Certified Quality Process Analysts (CQPA) or Certified Quality Improvement Analysts (CQIA), which are professional certifications offered by the American Society for Quality (ASQ). The content delivered in the certificate courses is tailored towards health and life sciences.

Admission Requirement

- High School Diploma or equivalent

Curriculum: Certificate in Quality Assurance & Quality Control

Fall Semester

COURSE	TITLE	CREDIT HOURS
HCM 251	Quality in Biomanufacturing	3
HCM 252	Quality Assurance for Biomanufacturing	3
TOTAL		6

Spring Semester

COURSE	TITLE	CREDIT HOURS
HCM 253	Quality Control for Biomanufacturing	3
HCM 254	QA/QC Applied Analysis and Verification	3
TOTAL		6

MCPHS–Worcester

School of Medical Imaging and Therapeutics

Frances Keech, DHSc, MBA, RT(N), FSNMMI-TS, Dean, School of Medical Imaging and Therapeutics, Professor

Diagnostic Medical Sonography Program

Bryan Doldt, BS, RDCS, FASE, Program Director, Assistant Professor - Echocardiography Track

Jennifer Miller, MHSc, RDMS, RVT, Program Director, Assistant Professor - General Track

Erin O'Hora, BS, RDMS, RVT, Assistant Professor/Clinical Coordinator - General Track Boston

Tiela Robert, BS, RDMS, RVT, RT(R)(CT), Assistant Professor - General Track

Patricia Mattos BS, RDMS, RVT, Assistant Professor – General Track

Christy Williams BS, RDMS Assistant Professor/Clinical Coordinator – General Track Worcester

Jeffrey C. Hill, MS, BS, ACS, FASE, Assistant Professor – Echocardiography Track

Marie Ficociello, MS, RDCS Assistant Professor/Clinical Coordinator - Echocardiography Track

Degree Programs

Bachelor of Science in Diagnostic Medical Sonography-General (Fast Track)
Bachelor of Science in Diagnostic Medical Sonography-Echocardiology (Fast Track)

Bachelor of Science in Diagnostic Medical Sonography Completion Programs: General Sonography and Echocardiography Tracks (Fast Track, 16 months)

The Diagnostic Medical Sonography (DMS) profession uses sound waves (ultrasound) to produce multi-dimensional dynamic images of tissue, organs, and blood flow inside the human body for the diagnosis of various medical conditions. The sonographer, a highly skilled imaging technologist, uses sophisticated ultrasound equipment to identify disease. In addition, the sonographer works closely with physicians in the processing of the ultrasound images to make a diagnosis.

The DMS program offers a full-time, Fast Track, 16-month course of study that begins in the fall semester. The comprehensive curriculum includes primary specialties of ultrasound, plus secondary specialties, offered across two tracks; the General ultrasound track, includes training in abdominal, obstetrics/gynecology, breast, pediatric, musculoskeletal and vascular sonography; the Echocardiography track focuses on adult echocardiography with an optional secondary specialty track in pediatric echocardiography.

Registry Exam Eligibility

Graduates of the DMS programs are eligible to apply for several registry exams offered by the American Registry of Diagnostic Medical Sonography (ARDMS) and Cardiovascular Credentialing International (CCI). Echocardiography may apply under ARDMS exam prerequisite 2 for the adult and pediatric echocardiography credentialing exams. . Echocardiography graduates may apply under CCI exam prerequisite RCS4 (adult cardiac) and RCCS5 (pediatric/adult congenital). General Ultrasound graduates may apply under ARDMS exam prerequisite 2 for the abdomen and OB/GYN credentialing exams.

- The student must pass the ARDMS Sonography Principles & Instrumentation (SPI) registry exam in order to pass the DMS 304, Problem Solving in Physics and Instrumentation course. In addition, passing the SPI registry exam is required to continue into Year II of the program.
- All DMS courses during the professional phase of studies must be completed with a weighted grade ≥ 77% (C+) in order to progress in the program.

- Students must complete all professional coursework at MCPHS to receive their degrees in the Diagnostic Medical Sonography programs.

- The MCPHS graduate is well suited to work in several DMS specialties and, with the BS degree, has the comprehensive education required to become a leader in the profession.
- Students with a bachelor's or associate's degree, or the appropriate amount of college credits and prerequisites, may apply to the fast track program. Courses must have been completed at a regionally accredited college or university with a grade of C or better for transfer. Math and science courses taken more than ten years prior to the anticipated date of matriculation to MCPHS will not be accepted.

Required prerequisite courses for all students:

- Anatomy and Physiology I & II with lab (8 credits)
- Basic Chemistry I with lab (4 credits)
- Physics I (Algebra-based) with lab (4 credits)
- Algebra and Trigonometry (3 credits) (Acceptable substitutions include Precalculus and Calculus)
- Expository Writing I (3 credits)
- Statistics (3 credits)
- Medical Terminology

Total: 25 credits

Additional courses required for students without a Bachelor's Degree:

- Basic Chemistry II with lab (4 credits)
- Expository Writing II (3 credits)
- Introduction to Psychology (3 credits)
- Introduction to Social Sciences: Identity, Power and Society (3 credits) (Acceptable substitutions include American History, US History, US Government, Western Civilization)
- Humanities Elective (3 credits) (Acceptable courses include Literature, Creative Writing, Philosophy, Ethics, Religious Studies, Select Fine Arts, Advanced Level Languages)
- Behavioral Science Elective (3 credits) (Acceptable courses include any upper-level psychology course)
- Social Science Elective (3 credits) (Acceptable courses include History, Political Science/Government, Anthropology, Upper-level Sociology, American Studies, Women Studies, Ethnic Studies, Geography, Economics)

Total: 22 credits

Note: Prerequisite courses may be transferred in or completed at MCPHS prior to entering professional DMS courses. Up to six (6) credit hours of electives may be taken concurrently with professional DMS courses.

DMS Clinical Rotation Policy

Clinical experience is an integral part of the Diagnostic Medical Sonography curriculum. MCPHS has clinical affiliations with excellent medical institutions throughout New England and beyond. We strive to meet each student's requests for clinical locations. However, to ensure all students have adequate exposure to the variety of ultrasound procedures necessary for completion of their degrees, students may be placed in a clinical site beyond their desired location for at least one semester. Students are responsible for transportation to and from all assigned clinical facilities as well any expenses incurred to complete the clinical requirements of the programs. This includes, but may not be limited to daily transportation, housing, and living expenses.

DMS Technical Standards

Minimum expectations of the DMS programs are to prepare competent, entry-level sonographers in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains in Abdominal sonography – extended and Obstetrics and gynecology sonography. To meet these expectations, students enrolled in health sciences professional programs must have abilities and technical skills to be successful healthcare providers. The following technical standards describe the non-academic qualifications the DMS programs considers essential for the successful progression in, and completion of the educational objectives of its curriculum.

Although the DMS program will engage in an interactive process with applicants with disabilities, it reserves the right not to admit any applicant who, upon completion of the interactive process, cannot meet the technical standards set forth below, with or without reasonable accommodations. Reasonable accommodation for persons with prior documented disabilities will be considered on an individual basis. Students wishing to request accommodations for disabilities should contact the Director for Office of Student Access and Accommodations.

A DMS professional provides direct care for patients in hospitals or outpatient facilities and must be able to apply acquired knowledge and physical tasks to skillfully perform sonography procedures. These technical standards are based upon the minimum tasks performed by graduates of the program as recommended by the Society of Diagnostic

Medical Sonography, Scope of Practice and Clinical Standards for the Diagnostic Medical Sonographer, 2023 (https://www.sdms.org/about/who-we-are/scope-of-practice).

Listed below are the technical standards that all applicants must meet in order to participate in, and successfully complete the DMS programs:

Physical
The Diagnostic Medical Sonographer must be able to:

- Work standing on their feet 80% of the time;
- Use both hands, wrists, and shoulders to maintain prolonged arm positions necessary for Scanning and perform fine motor skills;
- Lift more than 50 pounds routinely;
- Transport, move, and or lift patients from a wheelchair or stretcher to the examination table or patient bed, and physically assist patients into proper positions for examination;
- Push, pull, bend and stoop routinely to move and adjust sonographic equipment and perform studies;
- Use senses (vision, hearing, and touch) to adequately view sonograms, including color distinctions; distinguish audible sounds; perform eye/hand coordination skills required in sonographic examinations; and recognize changes in patient's condition and needs;
- Work in a semi-darkened room for prolonged periods of time;
- Be physically capable of carrying out all assigned duties

Mental and Intellectual
The Diagnostic Medical Sonographer must be able to:

- Communicate effectively, verbally and nonverbally, with patients and other healthcare professionals to explain procedures, give instructions, and give and obtain information;
- Organize and accurately perform the individual steps in a sonographic procedure in the proper sequence according to established standards;
- Understand and reach quickly to verbal instructions and patient needs;
- Follow directions effectively and work closely with members of the healthcare community;
- View and evaluate recorded images for the purpose of identifying proper protocol, procedural sequencing, technical qualities and identification of pathophysiology;
- Apply problem solving skills to help optimize patient care and produce the best diagnostic information possible

Emotional
The Diagnostic Medical Sonographer must be able to:

- Provide physical and emotional support to the patient during sonographic procedures;
- Interact compassionately and effectively with the sick and or the injured;
- Handle stressful situations related to technical and procedural standards and patient care situations;
- Adapt to changing environments and be able to prioritize tasks;
- Project an image of professionalism;
- Demonstrate a high level of compassion for others, a motivation to serve, integrity, and a consciousness of social values;
- Interact positively with people from all levels of society and all ethnic and religious backgrounds

Registry Exam Eligibility
Graduates of the DMS programs are eligible to apply for several registry exams offered by the American Registry of Diagnostic Medical Sonography (ARDMS) and Cardiovascular Credentialing International (CCI). Echocardiography graduates may apply, under ARDMS exam prerequisite 2, to take the adult and pediatric echocardiography, credentialing exams. Echocardiography graduates may apply under CCI exam prerequisite RCS4 (adult cardiac) and RCCS5 (pediatric/adult congenital). General Ultrasound graduates may apply under ARDMS exam prerequisite 2, to take the abdominal and OB/GYN credentialing exams.

Commission on Accreditation of Allied Health Education Programs
The Diagnostic Medical Sonography, General Ultrasound Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org), upon the recommendation of the Joint Review Committee on Education Programs in Diagnostic Medical Sonography. Mailing address: Commission on Accreditation of Allied Health Education Programs, 9355 -113th St. N., #7709 Seminole, FL 33775; tel: 727.210.2350

Curriculum: Diagnostic Medical Sonography - General Track Completion Program (16 months)

Fall – Year I

COURSE	TITLE	CREDIT HOURS
DMS 200	Introduction to Diagnostic Medical Sonography**	2
DMS 202	Obstetrics/Gynecology Sonography I	3
DMS 213L	Scanning Techniques	4
DMS 206	Abdominal Sonography I **	3
DMS 208	Sonographic Physics and Instruments I**	3
	Elective*	
TOTAL		15

Spring - Year I

COURSE	TITLE	CREDIT HOURS
DMS 223	Obstetrics/Gyn Sonography II**	3
DMS 216	Abdominal Sonography II	3
DMS 218	Sonographic Physics and Instruments II**	3
DMS 233L	Advanced Scanning Techniques	3
DMS 232	Introduction to Clinical Sonography	1
DMS 250	Selected Topics	3
TOTAL		16

Summer – Year I

COURSE	TITLE	CREDIT HOURS
DMS 340C	Sonography Internship I	8
DMS 304	Problem Solving in Physics and Instruments III**	3
DMS 447O	Sonographic Analysis (Online)	3
TOTAL		14

Fall – Year II

COURSE	TITLE	CREDIT HOURS
DMS 430C	Sonography Internship II	10
DMS 460O	Seminar in Sonography	2
	Elective*	
TOTAL		12

Total credits to complete degree requirements: 57 credit hours

**Indicates distance education between the Worcester and Boston campuses
***Additional 6 Elective credits, if needed, brings total to 63 credits.**

If Elective courses are needed, students may choose from the following courses:

COURSE	TITLE	CREDIT HOURS
HSC 3100	Healthcare Informatics	3
HSC 320	Writing for Heath Science Professionals	3
HSC 325	Healthcare Management	3
DHY 425	Educational Theories and Methods	3
HSC 4100	Research Analysis and Methods	3
HSC 427O	Teaching in Clinical Setting	3

Curriculum: Diagnostic Medical Sonography - Echocardiography Track Completion Program (16 months)

Fall – Year I

COURSE	TITLE	CREDIT HOURS
DMS 200	Introduction to Diagnostic Medical Sonography**	2
DMS 225	Echocardiography I	5
DMS 225L	Echocardiography Lab I	4
DMS 208	Sonographic Physics and Instruments I**	3
	Elective*	
TOTAL		14

Spring – Year I

COURSE	TITLE	CREDIT HOURS
DMS 218	Sonographic Physics and Instruments II**	3
DMS 260	Echocardiography and Congenital Heart Disease	3
DMS 265	Echocardiography II	3
DMS 266L	Echocardiography Lab II	4
TOTAL		13

Summer - Year I

COURSE	TITLE	CREDIT HOURS
DMS 350C	Echocardiography Internship I	8
DMS 304	Problem Solving in Physics and Instruments III**	3
DMS 355	Advanced Echocardiography	3
	Elective*	
TOTAL		14

Fall – Year II

COURSE	TITLE	CREDIT HOURS
DMS 455C	Echocardiography Internship II	10
DMS 465.O	Seminar in Echocardiography	2
DMS 452O	Echocardiography Analysis (Online)	3
	Elective*	
TOTAL		15

Total credits to complete degree requirements: 56 credit hours

**Indicates distance education between the Worcester and Boston campuses

***Additional 6 elective credits, if needed, brings total to 62 credits**

If Elective courses are needed, students may choose from the following courses:

COURSE	TITLE	CREDIT HOURS
HSC 3100	Healthcare Informatics	3
HSC 320	Writing for Heath Science Professionals	3
HSC 325	Healthcare Management	3
DHY 425	Educational Theories and Methods	3
HSC 4100	Research Analysis and Methods	3
HSC 427O	Teaching in Clinical Setting	3

MCPHS–Worcester
School of Nursing

Tammy Gravel, EdD, MS, RN, Dean of the School of Nursing and Chief Nurse Administrator and Associate Professor

Carlene Blais, DNP, MSN, RN-BC, Associate Professor and Associate Dean

Erin Murphy-Swenson, DNP, MS, CNM, Associate Professor and Associate Dean of Clinical Education & Experiential Learning

Patricia Murray, DHS, MSN, RN, FNP-BC, Associate Dean of Accreditation and Assessment, BSN Program Administrator- Worcester

Bonnie Laurent, DNP, RN, CPNP-PC, PMHNP-BC, Associate Professor, Associate Dean of Graduate Programs

Michelle Scola, MSN, RN, FNP-BC, Assistant Professor and Interim Family Nurse Practitioner Track Coordinator

Trae Stewart, PhD, MPH, MSN, MN, MS, PMHNP-BC, Professor, Psychiatric Mental Health Nurse Practitioner Track Coordinator

Katherine Heald, MSN, RN, CMSRN, Lab Manager, Assistant Professor

Professors Stewart, Street; Associate Professors Blais, Carroca, Carroccino, Gravel, Hudson, Laurent, Murphy-Swenson, Djousse; Assistant Professors Bush, Crizer DeVivo, Donahue, Fiore, Heald, Scola

Degree and Certificate Programs

Bachelor of Science in Nursing (Postbaccalaureate)
Associate Degree (AD) to Master of Science in Nursing Bridge Program; Family Nurse Practitioner and Psychiatric Nurse Practitioner Tracks*
Master of Science in Nursing-Family Nurse Practitioner Track (MSN)*
Master of Science in Nursing–Psychiatric Mental Health Nurse Practitioner Track (MSN)*
Certificate of Advanced Graduate Studies (CAGS) Family Nurse Practitioner*
Certificate of Advance Graduate Studies (CAGS) Psychiatric Mental Health Nurse Practitioner*
Doctor of Nursing Practice (DNP)*

*Online Programs

Bachelor of Science in Nursing (Postbaccalaureate) – 16-month Curriculum

The 16-month accelerated BSN program implemented at the MCPHS–Worcester campus is designed specifically for students with a bachelor's degree in another field. The curriculum is identical to that currently offered at the Boston and Manchester campuses. Students attend classes in Worcester. Program instruction is conducted in state-of-the-art facilities at the MCPHS-Worcester campus with clinical experiences in selected hospitals and community agencies in the greater Worcester and MetroWest regions.

This 16-month program of study provides an accelerated option for students ready for a challenging transition to a career as a Bachelor of Science in Nursing registered nurse. Building on previous learning and experience gained from the student's first bachelor's degree, the 16-month program of study mirrors the Boston-based program's professional major, guiding students toward gaining the knowledge, skills, competencies, and values required to practice as a registered nurse in the 21st century.

The Postbaccalaureate BSN is offered in a 16-month year-round format with a January or September admission. The September-admission program consists of a 15-week fall semester, a 15-week spring semester, a 12-week summer session, and a 15-week fall semester, concluding in December of the second year. The January-admission program consists of a 15-week spring semester, a 12-week summer session, a 15-week fall semester and a 15-week spring semester, concluding in May of the second year.

To be eligible for the program, the student must possess a prior Bachelor of Science or Bachelor of Arts degree and have completed the following prerequisite coursework with a minimum grade of C+ within the past 10 years: chemistry (with lab), anatomy and physiology (with lab), microbiology (with lab), statistics, nutrition and human development. Students with a baccalaureate degree will not be required to meet the MCPHS general education core requirements. The program requires a total of 120 credit hours of credit for completion. Upon completion of the program, students will be eligible to sit for the National Council of State Boards of Nursing Licensure Examination for Registered Nurses (NCLEX-RN).

For details on the curriculum, prerequisites, academic policies, professional & technical standards, and other information about the program, refer to the MCPHS–Boston School of Nursing section of this catalog. For the most current information regarding the program in Manchester, refer to the MCPHS website at www.mcphs.edu. This program has full approval from the Massachusetts Board of Registration in Nursing (MBORN) and is accredited by the Commission on Collegiate Nursing Education (2021-2031).

Associate Degree (AD) to Master of Science in Nursing Bridge Program (Online)

The AD to Master of Science in Nursing (MSN) Bridge consists of six courses (20 credits) designed to "bridge" the differences between the educational preparation of the associate degree nurse and that of the baccalaureate nurse. These six courses will be completed prior to the student's matriculation into the MSN Family Nurse Practitioner (FNP) track, and the Psychiatric Mental Health Nurse Practitioner (PMHNP) track. The Bridge is an entry option to the Master of Science in Nursing program for nurses without a bachelor's degree. A bachelor's degree in nursing will not be awarded upon completion of the Bridge curriculum. The Bridge courses complement the education of the associate degree-prepared nurse, develop the educational competencies of the baccalaureate nurse, and prepare the student for graduate-level education. Students must maintain an overall grade point average (GPA) of 3.0 in the Bridge courses in order to matriculate into the MSN-Family Nurse Practitioner track, and the MSN-Psychiatric Mental Health Nurse Practitioner track. The MSN program provides a high-quality education that prepares nurses to become competent, ethical, and compassionate nurse practitioners who will provide primary care to patients across the lifespan.

AD to MSN Bridge Program Admission Requirements

- An earned Associate Degree in Nursing from a state-approved program
- A minimum cumulative GPA of 2.0 (on a 4.0 scale) in Arts and Sciences courses and a cumulative GPA of 2.7 (on a 4.0 scale) in prelicensure Nursing courses
- RN licensure in the state in which you intend to perform your clinical hours
- Official transcripts
- A résumé or curriculum vitae
- A personal statement (500 to 1,000 words)
- Forty-two (42) nontransferable transfer credits will be awarded to the licensed nurse upon matriculation into the MCPHS Bridge program. There is no time limit on accepting science courses for registered nurses. Formal matriculation into the MSN-FNP track or MSN–PMHNP track requires the completion of the six MCPHS Nursing Bridge courses with a cumulative GPA of 3.0 (on a 4.0 scale).

Arts and Sciences Prerequisite Courses

COURSE	TITLE	CREDIT HOURS
	Anatomy and Physiology I and II (with labs)	8
	General or Medical Microbiology (with lab)	4
	Introduction to Psychology	3
	Introduction to Sociology	3
	Human Development	3
	English Composition I and II	6
	Statistics	3
	Algebra and Trigonometry	3
	Healthcare or Biomedical Ethics	3
	History or Social Sciences Elective	3
	Humanities Elective	3
TOTAL		42

Bridge Courses

COURSE	TITLE	CREDIT HOURS
NUR 440	Transition to Graduate Studies	1
NUR 454	Health Assessment and Clinical Reasoning	5
NUR 456	Introduction to Population Health and Health Policy	4
NUR 442	Role and Legal Concepts for the Professional Nurse	3
NUR 458	Evidence Based Practice Application	4
NUR 460	Leadership, Management & Delegation Skills & Competencies for Nursing Practice	3
TOTAL		20

Master of Science in Nursing Program (Online)

The primary goal of the Master of Science in Nursing (MSN) degree program is to prepare the graduate nurse to meet ever-evolving healthcare needs. The MSN curriculum is based on the American Association of Colleges of Nursing (AACN) Core Competencies for Professional Nursing Education (2021), including health promotion and disease prevention; human diversity and social issues; theoretical foundation of nursing practice; professional role development; research, ethics, and policy; and organization and financing of healthcare. Upon the completion of the MSN program, students will be able to

- Provide safe, effective, culturally competent, and advanced nursing care to individuals and families across the lifespan as a member of an interdisciplinary team and in the context of community;
- Integrate the core competencies of research, diversity, healthcare policy, ethics, health promotion and disease prevention, and theoretical foundations of nursing in the advanced nursing practice role;
- Demonstrate a leadership role in the profession of nursing;
- Engage in ongoing nursing knowledge development to guide practice
- Successfully pass the Family Nurse Practitioner certification examination, or the Psychiatric Mental Health Nurse Practitioner certification examination.

The MSN program offers (1) a MSN Family Nurse Practitioner (FNP) degree option in which candidates complete core MSN courses plus three family health nursing courses, and 750 clinical hours which are completed during the final two semesters, (2) a MSN Psychiatric/Mental Health Nurse Practitioner (PMHNP) degree option, in which candidates complete the core MSN courses , plus three psychiatric/mental health nursing courses, and 750 clinical hours which are completed during the final two semesters.

Admission Criteria

- Master of Science in Nursing applicants must show proof of having attained a baccalaureate degree in nursing and/or successful completion of the MCPHS AD to MS in Nursing Bridge program.
- Candidates whose primary language is not English will be required to have a minimum TOEFL score of 550.

Degree Requirements

- All students must complete the required credit hours and maintain a cumulative grade point average (GPA) of 3.0.

The required courses for completion of the MSN program are as follows:

Curriculum: Master of Science in Nursing (Family Nurse Practitioner Track)

Year I — semester I

COURSE	TITLE	CREDIT HOURS
NUR 720	Introduction to Graduate Studies	1
NUR 724	Advanced Physiology and Pathophysiology	3
NUR 722	Nurse Practitioner Role and Professional Identity Development	2
TOTAL		6

Year I — semester II

COURSE	TITLE	CREDIT HOURS
NUR 726	Advanced Pharmacology for the Nurse Practitioner	3
NUR 730	Translation of Evidence to Inform NP Practice	3
NUR 732	Advanced Population Health Concepts	2
TOTAL		8

Year I — semester III

COURSE	TITLE	CREDIT HOURS
NUR 740	Advanced Health Assessment	4
NUR 808	Foundations of Primary Care and Diagnostics	2
TOTAL		6

Year II — semester I

COURSE	TITLE	CREDIT HOURS
NUR 804	Quality and Leadership for Advanced Practice	2
NUR 818	Family Primary Care I	5
TOTAL		7

Year II — semester II

COURSE	TITLE	CREDIT HOURS
NUR 819	Family Primary Care II	5
TOTAL		5

Year II — semester III

COURSE	TITLE	CREDIT HOURS
NUR 820	FNP Clinical Experience I (375clinical hours)	5
TOTAL		5

Year III — semester I

COURSE	TITLE	CREDIT HOURS
NUR 821	FNP Clinical Experience II (375 clinical hours)	5
TOTAL		5

Total credits required: 42

Curriculum: Master of Science in Nursing (Psychiatric Mental Health Nurse Practitioner Track)

Year I — semester I

COURSE	TITLE	CREDIT HOURS
NUR 720	Introduction to Graduate Studies	1
NUR 724	Advanced Physiology and Pathophysiology	3
NUR 722	Nurse Practitioner Role and Professional Identity Development	2
TOTAL		6

Year I — semester II

COURSE	TITLE	CREDIT HOURS
NUR 726	Advanced Pharmacology for the Nurse Practitioner	3
NUR 730	Translation of Evidence to Inform NP Practice	3
NUR 732	Advanced Population Health Concepts	2
TOTAL		8

Year I — semester III

COURSE	TITLE	CREDIT HOURS
NUR 740	Advanced Health Assessment	4
NUR 812	Management of Psychiatric Mental Health Conditions: Psychopharmacology and Psychotherapeutics	3
TOTAL		7

Year II — semester I

COURSE	TITLE	CREDIT HOURS
NUR 804	Quality and Leadership Skills and Competencies for Advanced Practice	2
NUR 813	Psychiatric Mental Health Provider I	5
TOTAL		7

Year II — semester II

COURSE	TITLE	CREDIT HOURS
NUR 814	Psychiatric Mental Health Provider II	5
TOTAL		5

Year II — semester III

COURSE	TITLE	CREDIT HOURS
NUR 826	Psychiatric Mental Health Clinical Experience I (375 clinical hours)	5
TOTAL		5

Year III— semester I

COURSE	TITLE	CREDIT HOURS
NUR 827	Psychiatric Mental Health Clinical Experience II (375 clinical hours)	5
TOTAL		5

Total credits required: 43

Certificate of Advanced Graduate Study (CAGS) in Family Nurse Practitioner, and Psychiatric Mental Health Nurse Practitioner

The Certificate of Advanced Graduate Study (CAGS) in Family Nurse Practitioner and Psychiatric Mental Health Nurse Practitioner programs are open to applicants who have previously earned a master's degree in nursing from a nationally accredited program.

Curriculum: Certificate of Advanced Graduate Studies (CAGS) (Family Nurse Practitioner)

Students in the CAGS FNP program must have evidence of successful completion of the following courses:

- Advanced Pathophysiology Across the Lifespan
- Advanced Pharmacology Across the Lifespan
- Advanced Health Assessment Across the Lifespan
- Role of the Advanced Practice Nurse
- Translation of Evidence to Inform NP Practice
- Advanced Population Health Concepts
- Quality and Leadership for Advance Practice

The courses must have been completed with a letter grade of B or higher at an accredited 4-year academic institution. Students who have not completed the academic equivalent of these courses previously will be required to take the course in order to complete the CAGS. The 3P courses (Adv. Pathophysiology, Adv. Pharmacology, Adv Health Assessment) must be completed within three years prior to admission to the program in order to be considered for transfer credits.

Semester I

COURSE	TITLE	CREDIT HOURS
NUR 722	Nurse Practitioner Role and Professional Identity Development *	2
NUR 724	Advanced Physiology and Pathophysiology*	3
TOTAL		5

Semester II

COURSE	TITLE	CREDIT HOURS
NUR 726	Advanced Pharmacology for the Nurse Practitioner*	3
TOTAL		3

Semester III

COURSE	TITLE	CREDIT HOURS
NUR 740	Advanced Health Assessment*	4
NUR 808	Foundations of Primary Care & Diagnostics	2
TOTAL		6

Semester IV

COURSE	TITLE	CREDIT HOURS
NUR 804	Quality and Leadership for Advanced Practice*	2
NUR 818	Family Primary Care Provider I	5
TOTAL		7

Semester V

COURSE	TITLE	CREDIT HOURS
NUR 819	Family Primary Care Provider II	5
TOTAL		5

Semester VI

COURSE	TITLE	CREDIT HOURS
NUR 820	FNP Clinical Experience I (375 clinical hours)	5
TOTAL		5

Semester VII

COURSE	TITLE	CREDIT HOURS
NUR 821	FNP Clinical Experience II (375 clinical hours)	5
TOTAL		5

Total credits required: 36

(*) Courses considered for transfer credit; max. of 9 credits may be transferred in

Curriculum: Certificate of Advanced Graduate Studies (CAGS) (Psychiatric Mental Health Nurse Practitioner)

Students in the CAGS Psychiatric Mental Health Nurse Practitioner program must have evidence of successful completion of the following courses:

- Advanced Pathophysiology Across the Lifespan
- Advanced Pharmacology Across the Lifespan
- Advanced Health Assessment Across the Lifespan
- Role of the Advanced Practice Nurse
- Translation of Evidence to Inform NP Practice
- Advanced Population Health Concepts
- Quality and Leadership for Advanced Practice

The courses must have been completed with a letter grade of B or higher at an accredited 4-year academic institution. Students who have not completed the academic equivalent of these courses previously will be required to take the course in order to complete the CAGS. The 3P courses (Adv. Pathophysiology, Adv. Pharmacology, Adv Health Assessment) must be completed within three years prior to admission to the program in order to be considered for transfer credits.

Semester I

COURSE	TITLE	CREDIT HOURS
NUR 722	Nurse Practitioner Role and Professional Identity Development* *	2
NUR 724	Advanced Physiology & Pathophysiology*	3
TOTAL		5

Semester II

COURSE	TITLE	CREDIT HOURS
NUR 726	Advanced Pharmacology for the Nurse Practitioner*	3
TOTAL		3

Semester III

COURSE	TITLE	CREDIT HOURS
NUR 740	Advanced Health Assessment *	4
NUR 812	Management of Psychiatric Mental Health Conditions: Psychopharmacology & Psychotherapeutics	2
TOTAL		6

Semester IV

COURSE	TITLE	CREDIT HOURS
NUR 804	Quality & Leadership for Advanced Practice *	2
NUR 813	Psychiatric Mental Health Provider I	5
TOTAL		7

Semester V

COURSE	TITLE	CREDIT HOURS
NUR 814	Psychiatric Mental Health Provider II	5
TOTAL		5

Semester VI

COURSE	TITLE	CREDIT HOURS
NUR 826	PMHNP Clinical Experience I (375 clinical hours)	5
TOTAL		5

Semester VII

COURSE	TITLE	CREDIT HOURS
NUR 827	PMHNP Clinical Experience II (375 clinical hours)	5
TOTAL		5

Total credits required: 36

(*) Courses considered for transfer credit; max. of 9 credits may be transferred in

Doctor of Nursing Practice (Online)

The Doctor of Nursing Practice (DNP) program at Massachusetts College of Pharmacy and Health Sciences offers the opportunity for licensed/certified advanced practice nurses to gain the knowledge, skills, and aptitude to directly impact healthcare. The practice-focused DNP terminal degree in nursing builds on evidence-based knowledge obtained in previous nursing degrees and utilizes a focus on organization and systems leadership to prepare nurses to deliver innovative direct care, explore opportunities for quality improvement, improve diverse population patient outcomes, and advocate for policy change.

The Doctor of Nursing Practice (DNP) degree is designed for advanced practice registered nurses (APRN's) looking to reach the highest level of the nursing profession.

Admission Criteria

- Earned Master's in Nursing in an advanced nursing practice specialty from a nationally accredited program.
- Completed application
- Current National Certification as an advanced practice nurse (FNP, AGPCNP, AGACNP, ANP, PNP, GNP, ACNP, PMHNP, Nurse Midwife, Nurse Anesthetist, or CNS)
- GPA 3.0 or above on a 4.0 scale
- Resume or CV
- Successful completion of Prerequisite Graduate research methods/statistics course minimum grade of 3.0
- Transcripts from all post-secondary institutions
- Two letters of reference: One pertaining to academic ability or professional competence and a second letter referring to leadership potential
- DNP Personal statement Essay
- Zoom interview will be part of the admission process
- Students are required to complete 1,000 clinical hours as part of DNP degree completion. A maximum of 500 hours of preceptor-supervised direct care clinical hours earned from previous Master's in Nursing (MSN) degree may be applied to this requirement with program administrator or dean approval.

Curriculum: Doctor of Nursing Practice

Year I - Semester I

COURSE	TITLE	CREDIT HOURS
NUR 901	Introduction to Doctoral Studies and DNP Degree Competencies (5 experiential clinical hours)	2
NUR 906	Evidence Based Practice Methods to Drive Quality Improvement (20 experiential clinical hours)	4
TOTAL		6

Year I - Semester II

COURSE	TITLE	CREDIT HOURS
NUR 940	DNP Project I: Project Identification (50 experiential clinical hours)	2
NUR 911	Epidemiology and Biostatistics in Evidence Based Practice	3
TOTAL		5

Year I - Semester III

COURSE	TITLE	CREDIT HOURS
NUR 941	DNP Project II: Planning (100 experiential clinical hours)	4
NUR 912	Financial & Economics Principles in Healthcare (10 experiential clinical hours)	2
TOTAL		6

Year II - Semester I

COURSE	TITLE	CREDIT HOURS
NUR 942	DNP Project III: Implementation (110 experiential clinical hours)	4
NUR 913	Advanced Concepts in Population Health (20 experiential clinical hours)	2
TOTAL		6

Year II - Semester II

COURSE	TITLE	CREDIT HOURS
NUR 943	DNP Project IV: Data Analysis and Results (80 experiential clinical hours)	3
NUR 916	Health Policy, Ethics, and Advocacy (20 experiential clinical hours)	2
TOTAL		5

Year II - Semester III

COURSE	TITLE	CREDIT HOURS
NUR 944	DNP Project V: Project Completion (65 experiential clinical hours)	3
NUR 917	Health Systems Leadership Interprofessional Collaboration for the DNP Prepared Nurse (20 experiential clinical hours)	2
TOTAL		5

Total credits required: 33

Reduced Course Load

Students may opt to reduce the course load to one course per semester. The Associate Dean of Graduate Programs will meet with students with interest in the one course per semester option to develop an individualized curriculum sequence plan.

MCPHS–Worcester
School of Occupational Therapy (Manchester/Worcester)

Occupational Therapy Program

Professor C. Douglas Simmons, PhD, OTR/L, FAOTA, FNAP, Program Director, Professor

Assistant Professor Olivia Freeman, MA, OTR/L, Academic Fieldwork Coordinator. Assistant Professor

Professor Ellen Rainville, OTD, OTR/L Site Coordinator, Professor

Professors Ellen Rainville, C. Douglas Simmons
Associate Professor Angela Butler, Heidi Robertson
Assistant Professors Danielle Amero, Carole Dinan, Michelle Dowling, Olivia Freeman, Devlynn Neu, Megan Silvia

Fieldwork Staff Andrea Desimone, Kimberly Shurtleff
Administrative Assistant Janette Clemente

Degree Program

Master of Science in Occupational Therapy

Master of Science in Occupational Therapy

The School of Occupational Therapy on the MCPHS Manchester campus has been granted full accreditation status by the Accreditation Council of Occupational Therapy Education (ACOTE) to expand offering of the Master of Science in Occupational Therapy (MSOT) program to the University's Worcester Campus (Additional Location).

For details on the curriculum, prerequisites, and other information about the MSOT program, refer to the MCPHS–Manchester School of Occupational Therapy section of this catalog. The Worcester curriculum will be identical to the existing program located on the Manchester campus. This consists of a total of 84 credit hours and includes approximately 30-weeks of fieldwork education. The program encompasses five areas of concentration: Basic Tenets of Occupational Therapy and Practice (24 credit hours), Foundations of Occupational Therapy Practice (18 credit hours), Scholarship (12 credit hours), Management of Occupational Therapy Services (6 credit hours), and Fieldwork Education (24 credit hours).

MCPHS–Worcester
School of Optometry

Nancy Coletta, OD, PhD, Dean

Yasmin Carter, PhD, Associate Dean for Academic Programs

Greg Waldorf, OD, MPH, Associate Dean for Clinical Programs

Larry Baitch, OD, PhD, Associate Dean for Research

Professors Baitch, Coletta, Hendricks, Shivanna; Associate Professors Carter, Deliso, Han, Khalaf, Malloy, O'Leary, Ramaswamy, Stamm, Waldorf; Assistant Professors Contardo, D'Amico O'Connor, Imperioli, Walter

Degree Programs

Doctor of Optometry

Doctor of Optometry (OD)

The Doctor of Optometry (OD) program on the Worcester campus offers a student-oriented, learner-centered program designed to provide graduates with entry level activities to succeed in professional practice. The four-year program uses the latest in instructional and clinical technology to assure that its graduates possess the state-of-the-art education necessary to diagnose and manage the wide variety of ocular and systemic conditions encountered in today's diverse clinical settings. The program features clinically relevant instruction and patient care; dedicated faculty who place a high importance on teaching, advising, and individual student development; and clinical experiences in selected facilities in on-campus and off-campus optometric and ophthalmologic clinics as well as Veterans' Administration Centers, community health centers, hospitals, and community agencies in and beyond the Greater Worcester region.

Technical Standards

In order to fully describe elements required for successful completion of its professional optometric degree program, the MCPHS School of Optometry has adopted guidelines developed and adopted by the Association of Schools and Colleges of Optometry (ASCO). All students are expected to demonstrate each of the competencies contained within these functional guidelines:

Functional Guidelines for Didactic and Clinical Optometric Education at MCPHS

To provide guidance to those considering optometry as a profession, the Association of Schools and Colleges of Optometry (ASCO) has established functional guidelines for optometric education. The ability to meet these guidelines, along with other criteria established by individual optometric institutions, is necessary for graduation from an optometric professional degree program.

Our mission is to produce graduates fully qualified to provide quality comprehensive eye care services to the public. To fulfill this mission, each institution must ensure that students demonstrate satisfactory knowledge and skill in the provision of optometric care. Admission committees therefore consider a candidate's capacity to function effectively in academic and clinical environments as well as a candidate's academic qualifications and personal attributes.

The functional guidelines in optometric education require that the candidate/student possess appropriate abilities in the following areas: (1) observation; (2) communication; (3) sensory and motor coordination; (4) intellectual–conceptual, integrative, and quantitative abilities; and (5) behavioral and social attributes. Each of these areas is described in this document.

In any case where a student's abilities in one of these areas are compromised, they must demonstrate alternative means and/or abilities to meet the functional requirements. It is expected that seeking and using such alternative means and/or abilities shall be the responsibility of the student. Upon receipt of the appropriate documentation, the school or college will be expected to provide reasonable assistance and accommodation to the student.

Observation Abilities
The student must be able to acquire a defined level of required knowledge as presented through lectures, laboratories, demonstrations, patient interaction, and self-study. Acquiring this body of information necessitates the functional use of visual, auditory, and somatic sensation enhanced by the functional use of other sensory modalities. Examples of these observational skills in which accurate information needs to be extracted in an efficient manner include the following:

Visual abilities (as they relate to such things as visual acuity, color vision, and binocularity):

- Visualizing and reading information from papers, films, slides, video, and computer displays
- Observing optical, anatomic, physiologic, and pharmacologic demonstrations and experiments
- Discriminating microscopic images of tissue and microorganisms
- Observing a patient and noting nonverbal signs
- Discriminating numbers, images, and patterns associated with diagnostic tests and instruments
- Visualizing specific ocular tissues in order to discern three-dimensional relationships, depth, and color changes

Auditory abilities:

- Understanding verbal presentations in lecture, laboratory, and patient settings
- Recognizing and interpreting various sounds associated with laboratory experiments as well as diagnostic and therapeutic procedures

Tactile abilities:

- Palpating the eye and related areas to determine the integrity of the underlying structures;
- Palpating and feeling certain cardiovascular pulses

Communication Abilities
The student must be able to communicate effectively, efficiently, and sensitively with patients and their families, peers, staff, instructors, and other members of the healthcare team. The student must be able to demonstrate established communication skills using traditional and alternative means. Examples of required communications skills include the following:

- Relating effectively and sensitively to patients, conveying compassion and empathy;
- Perceiving verbal and nonverbal communication such as sadness, worry, agitation, and lack of comprehension from patients;
- Eliciting information from patients and observing changes in mood and activity;
- Communicating quickly, effectively, and efficiently in oral and written English with patients and other members of the healthcare team;
- Reading and legibly recording observations, test results, and management plans accurately;
- Completing assignments, patient records, and correspondence accurately and in a timely manner

Sensory and Motor Coordination Abilities
Students must possess the sensory and motor skills necessary to perform an eye examination, including emergency care. In general, this requires sufficient exteroception sense (touch, pain, temperature), proprioceptive sense (position, pressure, movement, stereognosis, and vibration) and fine motor function (significant coordination and manual dexterity using arms, wrists, hands, and fingers). Examples of skills required include, but are not limited to, the following:

- Instillation of ocular pharmaceutical agents;
- Insertion, removal, and manipulation of contact lenses;
- Assessment of blood pressure and pulse;
- Removal of foreign objects from the cornea;
- Simultaneous manipulation of lenses, instruments, and therapeutic agents and devices;
- Reasonable facility of movement;
- Injections into the eye, lids, or limbs

Intellectual-Conceptual, Integrative, and Quantitative Abilities
Problem solving, a most critical skill, is essential for optometric students and must be performed quickly, especially in emergency situations. In order to be an effective problem solver, the student must be able to accurately and efficiently utilize such abilities as measurement, calculation, reasoning, analysis, judgment, investigation, memory, numerical recognition, and synthesis. Examples of these abilities include being able to:

- determine appropriate questions to be asked and clinical tests to be performed;
- identify and analyze significant findings from history, examination, and other test data;
- demonstrate good judgment and provide a reasonable assessment, diagnosis, and management of patients;

- retain, recall, and obtain information in an efficient manner; and
- identify and communicate the limits of one's knowledge and skill.

Behavioral and Social Attributes
The student must possess the necessary behavioral and social attributes for the study and practice of optometry. Examples of such attributes include the following:

- Satisfactory emotional health required for full utilization of one's intellectual ability;
- High ethical standards and integrity;
- An empathy with patients and concern for their welfare;
- Commitment to the optometric profession and its standards;
- Effective interpersonal relationships with patients, peers, and instructors;
- Professional demeanor;
- Effective functioning under varying degrees of stress and workload;
- Adaptability to changing environments and uncertainties;
- Positive acceptance of suggestions and constructive criticism

Candidates with questions or concerns about how their own conditions or disabilities might affect their ability to meet these functional guidelines are encouraged to meet with an admission counselor prior to submitting an application.

Admission Prerequisites

- Bachelor's degree from a regionally accredited postsecondary institution in the United States strongly recommended; a minimum of 90 credit hours or 135 quarter hours of college education must be completed prior to matriculation;
- Recommended minimum overall grade point average (GPA) and prerequisite GPA of 2.9 or better (on a 4.0 scale);
- Minimum grade of C in all prerequisite courses;
- Completed Optometry Centralized Application Service (OptomCAS) application;
- Optometry Admission Test (OAT) report; score of 300 or higher recommended or Graduate Record Exam (GRE) report; score of 150 or higher recommended;
- Two letters of recommendation; one professional and one academic preferred;
- Résumé;
- Personal statement (500 to 1,000 words);
- Evidence of familiarity with optometry (shadowing a practitioner, volunteer work in optometric offices, etc.);
- Official Advanced Placement (AP) or College-Level Examination Program (CLEP) scores, if applicable (transfer credit granted for AP scores of 4 or 5 and CLEP scores of 50 or higher);
- Official TOEFL (minimum of 213 computer-based or 79 iBT) or IELTS (minimum 6.5) scores for all applicants whose primary language is not English;
- Official transcripts from non-U.S. secondary schools, colleges, or universities submitted to World Education Services (WES) for a course-by-course evaluation.

Prerequisite Coursework:

- General Biology I and II with labs (8 credit hours)
- Microbiology with lab (4 credit hours)
- General Chemistry I and II with labs (8 credit hours)
- Organic Chemistry with lab (4 credit hours)
- Physics I and II with labs (8 credit hours)
- Calculus (3 credit hours)
- English (6 credit hours)
- Psychology (3 credit hours)
- Statistics (3 credit hours)
- Biochemistry (3 credit hours) (not required but strongly recommended)

All math and science prerequisites must have been completed within the last 10 years.

Progression and Retention
Progression in the Doctor of Optometry program is dependent upon the student's maintaining a minimum cumulative grade point average (GPA) of 2.0.

To progress within both the didactic and the clinical phases of the program, students must achieve a final course grade of C or better, or a pass for a pass/fail course. In all OPT-designated courses, obtaining a course grade of less than a C

or a fail results in a student's having to repeat the course, which stops progression through the program (i.e., results in nonprogression status) because OD courses are offered only once a year. The student will decelerate to a class cohort that is targeted to graduate later than the student's original cohort. An optometry student may be placed on nonprogression status only once during his or her tenure in the School of Optometry (OD) program. A student who receives a second nonprogression status in a subsequent semester will be dismissed from the optometry program.

Directed study during the first three years may be required as remediation in lieu of repeating one year (1) if the student fails one course that is not sequential and/or (2) at the recommendation of the instructor of record and the Academic Standing Committee. The final decision for approval of the directed study requirement during the four-year program will be at the dean's discretion.

Students in their fourth professional year who fail a clinical education experience may be required to repeat a clinical externship course, or to complete a directed study course (ranging from 1 to 3 credit hours) prior to completing their clinical education experience. Progression is subject to clinical placement availability. (NOTE: There is no guarantee that space will be available at the desired time of return of the student; it may take up to two years for reentry due to lack of clinical placement availability.)

If a student is unable to progress in a professional course or clinical education experience after two attempts, the student will be referred to the program's Academic Standing Committee with a recommendation for dismissal.
Students must complete the requirements for the Doctor of Optometry (OD) degree within five years from initial matriculation. If this time limit in the OD program has elapsed and the student has not completed degree requirements, the student must request an extension in writing and meet with the Dean of the School of Optometry, who may approve or deny the extension request. Final appeals are to the Vice President of Academic Affairs / Provost.

Clinical Rotations
At a minimum, optometry clinical rotations require background screenings. For additional information, please contact the MCPHS Chief Compliance Officer.

CPR Certification
All students must complete CPR training prior to beginning clinical experiences in OPT 650 Clinical Optometry. Students must be certified in Basic Cardiac Life Support (BCLS) at the Healthcare Provider Level by the American Heart Association (AHA). Students must provide a copy of the AHA Healthcare Provider Level card indicating active certification. It is recommended that the student verify the course in advance to ensure that the course is appropriate.

Transportation/Housing
Reliable transportation to, from, and during all clinical experiences is the responsibility of the student. A number of clinical rotations in all years of the required curriculum may be scheduled at some distance from the campus. This is necessary to provide a range of diverse learning experiences and to ensure availability and quality of clinical education sites. The University will make every effort to accommodate requests regarding assignments to experiential education sites, but students generally can expect to be assigned to clinical sites some distance from the campus for at least a portion of their required clinical rotations beginning in the first year. In such instances, students are responsible for transportation and other related travel or housing expenses.

Employment
Due to the rigorous nature of the optometry program, the demands placed on students are extremely high, particularly with respect to their clinical rotation schedule and associated student requirements. It is for this reason that students are strongly discouraged from engaging in any outside, non-program-related employment throughout the program of study.

Board Exams and Score Reporting Requirements
Students in the OD degree program are required to attempt all three parts of the National Board of Examiners in Optometry (NBEO) exam, or both parts of the Optometry Examining Board of Canada (OEBC) exam, prior to graduation. In addition, score reports for all NBEO or OEBC exam attempts must be received by the MCPHS School of Optometry prior to the OD degree conferral.

Accreditation Council on Optometric Education (ACOE)
The Doctor of Optometry (OD) program on the Worcester campus has been granted the classification of Accredited by the Accreditation Council on Optometric Education (243 N. Lindbergh Blvd., St. Louis, MO 63141; phone: 800.365.2219).

Curriculum: Doctor of Optometry

Year I — fall

COURSE	TITLE	CREDIT HOURS
OPT 610	Clinical Anatomy (with lab)	3
OPT 611	Ocular Anatomy & Physiology	2
OPT 630	Geometrical and Physical Optics (with lab)	5
OPT 650	Optometry Theory and Methods I	2
OPT 650L	Optometry Theory and Methods I Lab	1
OPT 656	Histology and Embryology	3
OPT 721	Visual Development	2
TOTAL		18

Year I — spring

COURSE	TITLE	CREDIT HOURS
OPT 612	Ocular Biochemistry	2
OPT 631	Visual Optics (with lab)	4
OPT 652	Optometry Theory and Methods II	2
OPT.652L	Optometry Theory and Methods II Lab	1
OPT 622	Visual Perception	3
OPT 613	Neuro Anatomy and Physiology	3
OPT 657	Microbiology	1
OPT 709	Systemic Pharmacology I	2
TOTAL		18

Year I — summer

COURSE	TITLE	CREDIT HOURS
OPT 653	Optometry Theory and Methods III	2
OPT 653L	Optometry Theory and Methods III Lab	1
OPT 711	Immunology	1
OPT 722	Oculomotor Function	2
OPT 632	Ophthalmic Optics I (with lab)	5
OPT 705	Visual Neurophysiology and Neurodiagnostics	2
OPT 710	Systemic Pharmacology II	2
OPT 640	Systems Based Physiology	2
OPT 830	Professional Ethics	1
TOTAL		18

Year II — fall

COURSE	TITLE	CREDIT HOURS
OPT 712	Ocular Pharmacology	3
OPT 750	Anterior Segment Ocular Disease I	4
OPT 751	Optometry Theory and Methods IV	2
OPT 751L	Optometry Theory and Methods IV Lab	1
OPT 756	Foundations of Binocular Vision	2
OPT 770C	Primary Care Clinic I	2
OPT 655	Systemic Disease	1
OPT 766	Pathophysiology	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
OPT 757	Clinical Binocular Vision I	3
OPT 854	Ocular Manifestations of Systemic Disease	3
OPT 752	Contact Lens I (with lab)	4

OPT 753	Posterior Segment Ocular Disease I	4
OPT 851	Glaucoma I	2
OPT 771C	Primary Care Clinic II	2
TOTAL		18

Year II — summer

COURSE	TITLE	CREDIT HOURS
OPT 759	Anterior Segment Ocular Disease II	1
OPT 855	Contact Lens II	1
OPT 859	Glaucoma II	2
OPT 852	Clinical Binocular Vision II (with lab)	3
OPT 758	Neuro Optometry	2
OPT 768	Ocular Surface Disorders (with lab)	1
OPT 810	Integrative Seminar	1
OPT 772C	Primary Care Clinic III	2
TOTAL		13

Year III — fall

COURSE	TITLE	CREDIT HOURS
OPT 754	Low Vision and Geriatrics (with lab)	3
OPT 691	Optometry & Public Health	1
OPT 820	Cataract and Refractive Surgery	1
OPT 857	Posterior Segment Ocular Disease II	1
OPT 755	Pediatrics (with lab)	3
OPT 870C	Primary and Specialty Care Optometry I	3
OPT 899	Independent Study	0
TOTAL		12

Year III — spring

COURSE	TITLE	CREDIT HOURS
OPT 741	Practice and Business Management	2
OPT 879C	Primary and Specialty Care Optometry II	3
OPT 845	Advanced Optometric Theory and Methods	2
OPT 845L	Advanced Optometric Theory and Methods Lab	1
OPT 840	Special Populations and Topics	2
OPT 860	Research and Statistical Methods	1
TOTAL		11

Year III — summer and Year IV—fall and spring

COURSE	TITLE	CREDIT HOURS
OPT 951	Online Clinical Seminar	3
OPTC 971	Externship Rotation I	16
OPTC 972	Externship Rotation II	16
OPTC 973	Externship Rotation III	16
TOTAL		51

Total credits to complete degree requirements: 177

MCPHS–Worcester

School of Physical Therapy

Karen Huhn, PT, PhD Program Director and Professor of Physical Therapy

Janna Kucharski-Howard, PT, DPT, MSM, Associate Program Director; Director of Clinical Education and Professor of Physical Therapy

Cheryl Babin, PT, DHS, MHA, CAGS, Associate Director of Clinical Education, Professor of Physical Therapy

Professors Babin, Huhn, Kucharski-Howard; Associate Professors Bellows, Lachowski; Assistant Professors Powers, Rydingsward, Taglieri-Noble

Degree Programs

Doctor of Physical Therapy

Doctor of Physical Therapy

The entry-level Doctor of Physical Therapy (DPT) program on the Worcester campus prepares graduates to develop the advanced knowledge and skills required for contemporary physical therapy practice. The curriculum includes the elements of foundational sciences, clinical sciences, evidence-based practice, professional roles and practice issues, healthcare systems, and management competencies in the educational preparation of physical therapists. The coursework is designed to reinforce and build on each element so that the student can synthesize and apply the learned material to a variety of clinical, research, and management situations.

This postbaccalaureate program builds on the knowledge acquired from an undergraduate education and has two components: didactic and clinical. Through the didactic component, students acquire the knowledge and skills and develop the attitudes and professional behaviors needed for physical therapy practice. In the clinical education component, students apply their knowledge, skills, attitudes, and professional behaviors in clinical settings away from MCPHS. The clinical education component accounts for about one-third of the curriculum.

The curriculum for the entry-level Doctor of Physical Therapy program has a total of 117 credit hours with 30 weeks of full-time clinical education. The program is based on a system-based lifespan approach and the Master Adaptive Learner Model with a strong emphasis on clinical reasoning.

Application for the Doctor of Physical Therapy program is through the Physical Therapy Centralized Application Service (PTCAS) at www.ptcas.org.

Admission Prerequisites

- Bachelor's degree from a regionally accredited postsecondary institution in the United States
- Minimum overall grade point average (GPA) and prerequisite GPA of 3.0 or better (on a 4.0 scale)
- Minimum grade of C in all prerequisite courses
- Two letters of recommendation; one professional and one academic preferred
- Personal statement (500 to 1,000 words)
- On-campus faculty interview (by invitation only)
- Minimum of 10 hours of physical therapy exposure/experience documented from the clinical setting, not time as a patient
- Official TOEFL (90 TOEFL or equivalent) or IELTS (minimum 7) scores for all applicants whose primary language is not English
- Official transcripts from international colleges or universities submitted to the Center for Educational Documentation (CED), Educational Credential Evaluators, Inc. (ECE), or World Education Services (WES) for a course-by-course evaluation. MCPHS requires both the official international transcript(s) and an evaluated copy.

Prerequisite Coursework

- Two courses in biology/biological sciences (not botany) (6 credit hours)
- General Chemistry I and II with labs (8 credit hours)
- Anatomy and Physiology I and II with labs (8 credit hours)
- Physics I and II with labs (8 credit hours)
- Exercise Physiology with lab (3 credit hours)
- College Algebra or higher (3 credit hours)
- Statistics (3 credit hours)
- Introduction to Psychology (3 credit hours)
- Behavioral Science Elective (3 credit hours)
- All math and science prerequisites must have been completed within the last 10 years.

School of Physical Therapy Mission Statement

The roots of our School of Physical Therapy are based on a strong commitment to cultivating compassionate, skilled, and innovative physical therapy professionals. Graduates will use evidence-based practice to optimize human movement and promote health and wellness in a dynamic healthcare environment. We are dedicated to advancing health and wellness for diverse populations through outstanding education, experiential learning, and exemplary service.

Mission

Educate and Inspire: Provide a high-impact, rigorous, and inclusive educational environment that prepares students to excel as physical therapy practitioners, leaders, and advocates in an ever-changing healthcare landscape.

Serve with Compassion: Embed a spirit of service and ethical practice in our community, encouraging students and faculty to engage with and contribute to the well-being of individuals and communities, locally and globally.

Promote Health Equity: Strive to eliminate health disparities and promote health equity through education, outreach, and advocacy, ensuring access to physical therapy services for all, particularly underserved and marginalized populations.

Cultivate Professional Growth: Support lifelong learning and professional development opportunities for our students, alumni, faculty, and the broader physical therapy community to adapt to the evolving needs of society and the profession.

Foster Collaboration and Inclusivity: Build an inclusive community that values diversity and collaboration among students, faculty, healthcare professionals, and partners, enhancing the educational experience and enriching the profession.

Student Outcomes Related to Patient Care

1. Demonstrate proficiency in conducting comprehensive patient/client evaluations, including history taking, physical examination, and functional assessment.
2. Design and implement safe, effective, ethical, and patient-centered physical therapy management plans, considering the unique needs, preferences, and goals of each patient.
3. Demonstrate effective communication and collaboration with patients, family/carers, and other healthcare professionals to optimize patient outcomes and intra/interprofessional collaboration.
4. Employ evidence-based therapeutic interventions to optimize patient movement, function, participation, and well-being.

Student Outcomes Related to Clinical Reasoning

1. Use a holistic, collaborative, and multi-sensory approach to clinical reasoning inclusive of patient goals and perspectives
2. Demonstrate reflective practice in self-performance and in all aspects of patient care, including diagnosis, prognosis, and intervention
3. Develop and execute evidence-based assessment and intervention strategies to address impairments, activity limitations, and participation restrictions in all populations
4. Critically appraise and apply scientific evidence to support clinical decision-making and practice.

Student Outcomes Related to Becoming a Physical Therapist

1. Adhere to ethical principles and legal standards in physical therapy practice, respecting the dignity, rights, and autonomy of individuals.

2. Engage in self-assessment for lifelong learning to maintain competence and respond to the evolving demands of patients, the healthcare system, and physical therapy practice.
3. Demonstrate leadership, advocacy, and social responsibility in professional and community contexts to promote health and wellness and improve the physical therapy profession.
4. Advocate for patients and the profession by navigating healthcare policy, legislation, and systems to improve access to physical therapy services.

Essential Functions
The practice of physical therapy includes the examination, diagnosis, and treatment of people with physical limitations, movement dysfunction, and pain. Physical therapists must be prepared to conduct in a timely manner a relevant patient examination, evaluate the results of this examination, and synthesize these data to establish an accurate diagnosis, prognosis, and plan of care; implement an intervention; and use the process of reexamination to assess patient outcomes. Physical therapists must also possess the skills necessary to determine when referral of the patient/client to another healthcare professional is appropriate. Physical therapists must provide evidence that the care that they provide is effective, often through the conduct of clinically based research.

Doctor of Physical Therapy students must be able to complete the following:

- Participation in all required aspects of classroom and laboratory activities;
- Participation in all required aspects of clinical experience activities;
- Effective communication with other students, instructors, assistive personnel, patients, family members, payors, and other healthcare professionals;
- Maintenance of a safe environment for other individuals and for oneself, including use of universal precautions;
- Provision of emergency patient care, including but not limited to cardiopulmonary resuscitation (CPR);
- Completion of elements of patient/client management, including examination, evaluation of data, formulation of physical therapy diagnosis and prognosis, intervention, assessment of outcomes, and record keeping;
- Completion of specific patient/client interventions and treatments, including patient and family education, application of modalities, therapeutic exercise, and functional training;

Clinical agencies may have additional or agency-specific technical standards, which take precedence over MCPHS technical standards. The Commission on Accreditation of Physical Therapy Education (CAPTE) accredits professional physical therapy programs and requires that graduates of these programs be able to deliver entry-level clinical services. Graduates of entry-level programs are required to possess a broad base of knowledge and skills requisite for the practice of physical therapy. Physical therapists require *the intellectual-communication, behavioral-social, observational*, and *motor* abilities to meet the standard of practice.

Certain limitations can interfere with a student's ability to complete the program of study and acquire the essential functions necessary for the practice of physical therapy. Reasonable accommodation can be made to compensate for some limitations. However, those that interfere with patient care or safety, or require the use of an intermediary may be incompatible with independent professional practice.

Technical Standards for Physical Therapy

Intellectual-Communication Abilities
Intellectual skills include the ability to recall and comprehend large amounts of didactic information and to apply this information to the examination, evaluation, and management of routine and complex physical therapy problems. Effective communication skills enable the physical therapist to elicit appropriate information from patients and to effectively explain examination and treatment procedures. Some of the skills an individual must be able to demonstrate include, but are not limited to, the ability to

- communicate clearly and in a timely manner with patients, physicians, other health professionals, community or professional groups, and colleagues;
- report clearly, legibly, and in a timely manner through progress notes in patient charts, reports to physicians, insurance forms, and order forms;
- respond to such things as a patient calling from behind a curtain, warning calls from anyone, and machine alarms; and
- participate in group meetings to deliver and receive information and to respond to questions from a variety of sources.

Behavioral-Social Attributes
Students must demonstrate the ability to practice in a professional and ethical manner and possess the emotional stability to practice in a stressful work environment. Compassion, integrity, concern for others, interpersonal skills sufficient to work with all persons, and motivation are all personal attributes associated with the practice of physical therapy. Some

of the skills an individual must be able to demonstrate include, but are not limited to, the ability to

- recognize and respond appropriately to individuals of all ages; religious, and cultural backgrounds;
- cope with the stress of heavy workloads, demanding patients, and life-threatening clinical situations; and
- recognize and respond appropriately to potentially hazardous situations.

Observational Skills
Observation is one of the key tools that a physical therapist possesses. To gather data on patient/client condition and to appropriately manipulate machinery are critical to being an effective physical therapist. Some of the skills an individual must be able to demonstrate include, but are not limited to, the ability to

- observe and interpret patient movement, skin condition, safety hazards, and changes in appearance; and
- read and interpret equipment dials; assessment graphs; patient charts; professional literature; and notes from patients, physicians, and other health professionals.

Motor Skills
The practice of physical therapy requires that the practitioner possess the ability to perform basic evaluative and therapeutic procedures that require specific physical skills and stamina (e.g., palpation, transfers, gait training). A therapist must be able to use vision and somatic sensation in the evaluation and treatment of patients. Some of the skills an individual must be able to demonstrate include, but are not limited to, the ability to

- lift, carry, and push patients (150 pounds) in beds or wheelchairs, heavy equipment, body parts, and patients transferring from bed to chair or mat, or be able to instruct others in the activity, including proper body mechanics;
- walk and balance well enough to help patients walk and transfer with or without equipment, and prevent injury to patient and self;
- palpate anatomical structures and handle injured body parts without causing injury to the subject;
- exhibit sufficient manual dexterity to manipulate very small equipment, provide support and resistance as needed through complex exercise movements, perform CPR, manipulate dials, and treat acutely ill patients without disturbing sensitive monitoring instruments and lines; and
- provide for the patient's safety and well-being in all therapeutic or transporting activities.

Professional Behaviors
In addition to knowledge and skill acquisition, the process of becoming a professional involves developing competence in professional behavior. Students are expected to display professional behavior at all times including during clinical education experiences. This includes displaying a professional demeanor in interactions and boundaries with patients and their families, clinical staff, peers, faculty, and the public at all times in consideration of their representation of the profession of physical therapy and MCPHS. The 10 requisite professional behaviors are defined below.

Any student demonstrating unprofessional behavior will be referred to the PT Professional and Academic Review Committee.

Definitions

Critical thinking: The ability to question logically, identify, generate, and evaluate elements of logical argument; recognize and differentiate facts, appropriate or faulty inferences, and assumptions; and distinguish relevant from irrelevant information**.** The ability to appropriately utilize, analyze, and critically evaluate scientific evidence to develop a logical argument, and to identify and determine the impact of personal experiences and history on the decision-making process

Communication: The ability to communicate effectively (i.e., verbal, nonverbal, reading, writing, and listening) for varied audiences and purposes

Problem solving: The ability to recognize and define problems, analyze data, develop and implement solutions, and evaluate outcomes

Interpersonal skills: The ability to interact effectively with patients, families, colleagues, other healthcare professionals, and the community in a culturally aware manner

Responsibility: The ability to be accountable for the outcomes of personal and professional actions and to follow through on commitments that encompass the profession within the scope of work, community, and social responsibilities

Professionalism: The ability to exhibit appropriate professional conduct and to represent the profession effectively while promoting the growth/development of the physical therapy profession

Use of constructive feedback: The ability to seek out and identify quality sources of feedback, reflect on and integrate the feedback, and provide meaningful feedback to others

Effective use of time and resources: The ability to manage time and resources effectively to obtain the maximum possible benefit

Stress management: The ability to identify sources of stress and to develop and implement effective coping behaviors. This applies to interactions with self, patients/clients and their families, and members of the healthcare team in work/life scenarios.

Commitment to learning: The ability to self-direct learning to include the identification of needs and sources of learning, and to continually seek and apply new knowledge, behaviors, and skills

Adapted from L.B. Kontney, W. May, and Z.A. Iglarsh. "Professional Behaviors for the 21st Century." Manuscript in progress, University of Wisconsin–Madison Physical Therapy Educational Program, 2010.

Academic Standards for the Doctor of Physical Therapy Program

- A minimum grade of B– is required for all physical therapy (PTH-designated) courses in the DPT curriculum. Any courses designated as pass/fail must be passed in order to progress with the DPT curriculum.
- The minimum passing grade for all cumulative practical examinations is 80%, or B–.
- All DPT courses must be taken in the specified sequence of the curriculum.
- An individual PTH course may be repeated only once. A second failed attempt with a grade below the B– standard will result in dismissal from the DPT program.
- Throughout the DPT program, failure to meet the required minimum standard (B-) in more than two separate DPT courses will result in dismissal from the DPT program.
- A physical therapy student may be placed on nonprogression status only once during his or her tenure in the Physical Therapy DPT program. A student who receives a second nonprogression status in a subsequent semester will be dismissed from the Physical Therapy program.

Progression and Retention

Progression in the DPT program is dependent upon the student's maintaining a minimum cumulative grade point average (GPA) of 3.0 and a semester GPA of 3.0 as the student progresses.

To progress within both the didactic and the clinical phases of the program, students must achieve a final course grade of B– or better, or a pass for a pass/fail course. A student must be in good academic standing with a professional cumulative GPA of 3.0 to progress to full time clinical education experiences (PTHC 700). In all PTH-designated courses, obtaining a course grade of less than a B– or a fail results in a student's having to repeat the course, which stops progression through the program (i.e., results in nonprogression status) because DPT courses are offered only once a year. The student will decelerate to a class cohort that is targeted to graduate later than the student's original cohort.

A DPT student who earns a grade of C+ to C- in any single PTH course will be placed on academic probation. Should a second grade of C+ to C- be earned in a course in that same semester or any semester thereafter the student may be dismissed from the DPT program. Any single course grade below a C- may lead to dismissal from the program

Students who fail a professional course are required to repeat the course prior to progressing in the curriculum. Students who fail a clinical education experience may be required to complete PTH 685 prior to completing the clinical education experience. Progression is subject to clinical placement availability. (NOTE: There is no guarantee that space will be available at the desired time of return of the student; it may take up to two years for reentry due to lack of clinical placement availability.)

If a student is unable to progress in a professional course or clinical education after two attempts, the student will be referred to the School of Physical Therapy Academic Standing Committee with a recommendation for dismissal.

Students must complete the requirements for the DPT degree within five years from initial matriculation. If this time limit in the DPT program has elapsed and the student has not completed degree requirements, the student must request an extension in writing and meet with the Director of the School of Physical Therapy, who may approve or deny the extension request. Final appeals are to the Vice President of Academic Affairs/Provost. Students must be in good academic standing with a professional cumulative GPA of 3.0 to be eligible for graduation.

Policy for Reentry and Content Validation after Nonprogression or Leave of Absence

Students who are not continuously enrolled in the sequence of the DPT curriculum for a period of one semester or more, or who withdraw from the DPT program via leave of absence, must validate previous knowledge and skills held prior to program exit before they may reenroll in any DPT courses. Reenrollment is subject to clinical placement availability. (NOTE: There is no guarantee that space will be available at the desired time of return of the student; it may take up to two years for reentry due to lack of clinical placement availability.)

In order to ensure that all students are competent and safe in the delivery and application of patient care, any student who has not been continuously enrolled must, at the discretion of the faculty, demonstrate identified clinical competency. The validation will occur via the student's demonstration of knowledge and skills, that is, meeting established program

clinical competencies. The student must notify the Director of the School of Physical Therapy by March 1 for fall start, February 1 for May start, and October 1 for January start to make arrangements for preparing for and performing validation testing. Students attempting to return from a leave of absence must also be cleared to return to classes by designated staff in the Center for Academic Success and Enrichment and the Dean of Students (if a medical leave of absence) prior to performing validation testing. The Center for Academic Success and Enrichment will notify the Director of the School of Physical Therapy when the student is eligible to take the validation test.

School of Physical Therapy faculty will provide guidance as to the content and skills (competencies) to be reviewed by the student prior to the testing. The validation testing consists of testing to assess knowledge and clinical skills taught prior to the semester of anticipated reentry. It is the student's responsibility to prepare for the validation testing. If a student fails the validation test, they must enroll in a directed study to remediate, followed by a second validation test, prior to reentering the program. Students must pass the validation testing with a minimum grade of B–, at the 80% level, in order to reenter the DPT curriculum. Failure to pass the second validation test after a directed study will result in dismissal from the Physical Therapy program.

The number of semester credits assigned to the directed study course will vary (1–3 semester credits) depending upon the number of semesters successfully completed in the program. I. Students may not take any program professional courses until the directed study and content validation testing has been successfully completed.

Commission on Accreditation in Physical Therapy Education
The Doctor of Physical Therapy program at MCPHS is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Ave., Suite 100, Alexandria, VA 22305-3085 tel.: 703-706-3245 email*:* accreditation@apta.org; website: www.capteonline.org. If needing to contact the program/institution directly, please call 508-373-5741 or email DPT@mcphs.edu.

Curriculum: Doctor of Physical Therapy (DPT)

Year I - fall

COURSE	TITLE	CREDIT HOURS
PTH 501	PT as a Profession	2
PTH 521	Movement and Structure I	4
PTH 541	Examination and Evaluation I	4
PTH 561	Interventions I	4
PTH 570	Integrated Clinical Ed I	2
TOTAL		16

Year I - spring

COURSE	TITLE	CREDIT HOURS
PTH 522	Movement and Structure II	4
PTH 542	Examination and Evaluation II	4
PTH 562	Interventions II	4
PTH 540	Evidence Based Practice I	2
PTH 575	Integrated Clinical Ed II	2
PTH 581	Professional Issues in PT Practice I	2
TOTAL		18

Year I - summer

COURSE	TITLE	CREDIT HOURS
PTH 523	Movement and Structure III	4
PTH 543	Examination and Evaluation III	4
PTH 563	Interventions III	4
PTH 550	Evidence Based Practice II	2
TOTAL		14

Year II - fall

COURSE	TITLE	CREDIT HOURS
PTH 621	Movement and Structure IV	4
PTH 641	Examination and Evaluation IV	4

PTH 661	Interventions IV	4
PTH 670	Integrated Clinical Ed III	2
PTH 682	Prof Project I	2
TOTAL		16

Year II - spring

COURSE	TITLE	CREDIT HOURS
PTH 622	Movement and Structure V	4
PTH 642	Examination and Evaluation V	4
PTH 662	Interventions V	4
PTH 683	Prof Project II	2
PTH 675	Integrated Clinical Ed IV	2
TOTAL		16

Year II - summer

COURSE	TITLE	CREDIT HOURS
PTH 623	Movement and Structure VI	3
PTH 643	Examination and Evaluation VI	4
PTH 663	Interventions VI	4
PTH 681	Prof Issues in PT II	2
TOTAL		13

Year III - fall

COURSE	TITLE	CREDIT HOURS
PTHC	700 Clin Ed Exp I	8
PTHC	710 Clin Ed Exp II	8
TOTAL		16

Year III - spring

COURSE	TITLE	CREDIT HOURS
PTHC	720 Clin Ed Exp III	8
PTH	785 Exam Prep	1
TOTAL		9

Total credits to complete degree requirements: 117 credit hours

MCPHS–Worcester
School of Physician Assistant Studies (Manchester/Worcester)

Kristy Altongy-Magee, DScPAS, PA-C, Associate Professor, Program Director and Director of Assessment

Nicole Dettmann, DScPAS, MPH, PA-C, Professor, Associate Program Director and Director of Clinical Education

Stephanie Maclary, RN, MHS, PA-C, Assistant Professor and Director of Didactic Education

John (Jack) Kelly, MD, Clinical Associate Professor and Medical Director

Professor Dettmann; Associate Professors Altongy-Magee, Dillon, Hricz, Stowell, Gallagher; Assistant Professors Baer, Bajko, Beaumont, Caffrey**,** Cerreto, Chouinard, Huynh, Maclary, Petrillo-Deluca, Racine, Steiner (Emeritus)

Degree Program
Master of Physician Assistant Studies (MPAS) (Accelerated)

Master of Physician Assistant Studies (MPAS) (Accelerated)
The MCPHS Physician Assistant (PA) Studies program is dedicated to the education of clinically competent medical professionals who are prepared to deliver quality patient care in a dynamic healthcare delivery system. The program is accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) and graduates are eligible to sit for the Physician Assistant National Certifying Examination (PANCE) required for licensure or registration.

This program capitalizes on the extensive educational resources of the University, including supervised clinical practice experiences (clinical rotations) in the North East and Mid-Atlantic regions and beyond, to prepare physician assistants with the skills, competencies, and attitudes to provide compassionate, high-quality, and comprehensive care to patients of all ages in a variety of clinical settings. The emphasis is on community-oriented primary care, and students acquire experience in the evaluation and treatment of a broad spectrum of medical problems though the program's clinical rotations. These experiential elements of the program provide training in emergency medicine, family medicine, internal medicine, pediatrics, psychiatry, surgery, and women's health in addition to an elective specialty.

Students applying to the program must submit a formal application and designate whether they are applying to the Manchester or Worcester campus. Students cannot apply to both campuses. The application must include official transcripts and an essay through the Central Application Service for Physician Assistants (CASPA) and must be received by March 1. CASPA, the centralized national application service of the Physician Assistant Education Association, may be contacted at www.caspaonline.org.

About the Program
In the spring of 2008, a two-year Master of Physician Assistant Studies (MPAS) program began on the Worcester campus. While based on the Worcester campus, the program is a satellite of the MCPHS–Manchester program with an identical curriculum—both delivered with faculty on each campus via use of synchronized distance education. For both campuses, the first year is dedicated to didactic and laboratory learning and the second to supervised clinical practice experiences (clinical rotations) in a variety of patient-care settings. Students attend classes at their respective campus, with didactic courses simultaneously delivered at both campuses using technologically sophisticated interactive videoconferencing. This technology allows students at each site to interact with other students and faculty members in real time. Laboratory courses and small-group activities are facilitated by Physician Assistant Studies faculty located on each campus.

For details on the curriculum, prerequisites, and other information about the program, refer to the MCPHS–Manchester School of Physician Assistant Studies section of this catalog. For the most current information regarding the program in Worcester, refer to the MCPHS website at www.mcphs.edu.

Technical Standards for the Master of Physician Assistant Studies

Observation
Candidates and students must have sufficient capacity to observe in the lecture hall, laboratory, and diagnostic and treatment areas of outpatient and inpatient settings. Sensory skills to perform the procedures of the healthcare profession in which students are enrolled are required. In any case where a candidate's or a student's ability to observe or acquire information through sensory modalities is compromised, the candidate or student must demonstrate alternative means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion.

Communication
Candidates and students must be able to communicate effectively in both academic and healthcare settings. Candidates and students must show evidence of effective written and oral communication skills, and must be able to communicate with patients in order to elicit and impart information.

Motor
The ability to participate in basic diagnostic and therapeutic maneuvers and procedures is required. Candidates and students must have sufficient motor function to execute movements reasonably required to properly care for all patients, and must be able to perform motor functions with or without assistive devices.

Intellectual
Candidates and students must be able to measure, calculate, reason, analyze, and synthesize. Problem solving, one of the critical skills demanded of healthcare professionals, requires all of these intellectual abilities. Candidates and students must be able to read and understand medical literature. In order to complete the specific Health Sciences program, students must be able to demonstrate mastery of these skills and the ability to use them together in a timely fashion in healthcare problem solving and patient care.

Behavioral and Social Attributes
Candidates and students must possess the emotional health and stability required for full utilization of their intellectual abilities, the exercise of good judgment, and the prompt completion of all academic and patient care responsibilities. The development of mature, sensitive, and effective relationships with patients and other members of the healthcare team is essential. The ability to function in the face of uncertainties inherent in clinical practice, flexibility, compassion, integrity, motivation, interpersonal skills, and concern for others are all required.

MCPHS–Worcester
School of Pharmacy–Worcester/Manchester

Paul Belliveau, PharmD, Professor and Dean

Abir Kanaan, PharmD, Professor and Associate Dean for Professional Education

Cheryl Abel, PharmD, Professor and Assistant Dean of Pharmacy Academic Affairs and Operations

Kristine Willett, PharmD, Professor and Assistant Dean of Student Engagement & Success

Michael Steinberg, PharmD, Professor and Assistant Dean of Assessment

Kaelen Dunican, PharmD, Professor and Assistant Dean of Interprofessional Education

Department of Pharmaceutical Sciences
Terrick Andey, PhD, Professor and Chair

George Acquaah-Mensah, PhD, Professor and Assistant Dean of Graduate Studies

Professors Acquaah-Mensah, Andey, Campbell, Friel, Goldsmith, Sharma; Associate Professors Yan; Assistant Professors Mandela, Metcalf, Kostansek, Essel; Faculty Associates Graham, Pollano

Department of Pharmacy Practice
Sheila Seed, PharmD, MPH Professor and Chair

Aimee Dawson, PharmD, Associate Professor and Vice-Chair

Professors Abel, Aungst, Bartlett, Belliveau, Cooper, Dunican, Durand, Kanaan, Morrill, Mukherjee, Pervanas, Seed, Silva, Spooner, Steinberg, Willett; Associate Professors Bear, Carey, Conway-Allen, Coppenrath, Cross, Dawson, Herren, Horton, LaMothe, Nicolas, Towle, Yogaratnam; Assistant Professors Daly, Nault; Faculty Associate Massey

Office of Experiential Education
Paul DiFrancesco, EdD, MPA, RPh Associate Professor and Associate Dean of Experiential Education, Boston/Worcester/Manchester

Kara Bonaceto, PharmD, Associate Professor of Pharmacy Practice and Director of Experiential Education

Nicole Carace, PharmD, MS, Assistant Professor of Pharmacy Practice and Experiential Education Coordinator

Gretchen Jehle, PharmD, Associate Professor of Pharmacy Practice and Experiential Education Coordinator

Brianne Morin, PharmD, Assistant Professor of Pharmacy Practice and Experiential Education Coordinator

Degree and Certificate Programs

Doctor of Pharmacy (Accelerated)
Graduate Certificate in Medication Safety
Bachelor of Science in Pharmacy and Life Sciences
Doctor of Pharmacy/Master in Clinical Investigation and Development
Doctor of Pharmacy/Master in Regulatory Sciences
Doctor of Pharmacy/Master of Business Administration in Healthcare Technology
Doctor of Pharmacy/Master in Regulatory Affairs and Health Policy
Doctor of Pharmacy/Master in Clinical Research

Mission Statement

Facilitate the development of learners to become transformative healthcare professionals within an environment that supports the success of all community members. Our program is delivered by faculty who lead with collegiality and regularly participate in exemplary teaching, scholarship, and service as part of their commitment to advancing pharmacy education, practice, and patient care.

Core Values

Members of our School community believe that the following characteristics serve as the foundation for all activities and are integral to how we function:

Community. Fostering a culture of empathy, compassion, and engagement to champion practices that advance the interests of patients and the profession, and promote the well-being of all our community members.

Creativity. Promoting innovation, ingenuity, and resourcefulness to overcome challenges and to lead change in the best interest of our community.

Engagement. Fostering intentional collaborations and connections among community members.

Excellence. Demonstrating personal responsibility and collegiality in pursuit of the school's mission, while continuously striving for growth through self-reflection, fulfillment of commitments, and a dedication to quality improvement and high performance.

Professionalism Demonstrating honesty and integrity and conduct that is reflective, ethical, and consistent with the expectations of our community.

Resiliency. Navigating challenges and leveraging community strengths to respond to changes in the profession and academic climate to ensure the (continued) delivery of valuable educational experiences.

Doctor of Pharmacy (Accelerated)

Admission to the MCPHS–Worcester/Manchester Doctor of Pharmacy (PharmD) degree program is a competitive process open only to transfer students. Applicants must have completed, or be in the process of completing, their preprofessional coursework at a regionally accredited college or university. If an applicant has completed coursework at a foreign college or university, the student must submit evidence of U.S. course/degree equivalency. The professional curriculum in pharmacy at the School of Pharmacy–Worcester/Manchester (SOP-W/M) is offered as a year-round program that allows students to complete their degree requirements for the Doctor of Pharmacy in less than three years.

Technical Non-Academic Standards

Introduction

The School of Pharmacy (SOP) is committed to creating and sustaining a climate of inclusive excellence which is essential to prepare our students to embrace differences in experience and perspectives in a manner that would enrich their engagement and collaboration as healthcare providers and members of our global community. as a global leader in healthcare education, SOP welcomes individuals from various backgrounds, personal and professional experiences, and ways of thinking. As part of SOP's commitment to inclusive excellence, SOP prohibits discrimination according to all applicable state and federal laws. The purpose of this document is to ensure all students entering the PharmD program understand the clinical and nonacademic requirements of the program so that they can make informed decisions regarding their pursuit of the profession of pharmacy.

Candidates for admission to and students enrolled in the PharmD program must have abilities and skills in multiple domains, including communication, intellectual, behavioral/social, and visual/auditory/tactile/motor competencies. The following technical standards (non-academic standards are essential for the students' successful progression and completion of the educational outcomes of the curriculum.

All Students are expected to meet these technical standards, with or without reasonable accommodations. Students wishing to request accommodations for disabilities should contact the Office of Student Access and Accommodations (see Office of Student Access and Accommodations in the Student Services Section of the catalog).

Domain: Communication

Performance Standards

- Must have functional English speaking, reading, and writing skills to communicate clearly and professionally with patients, family, caregivers, physicians, and other healthcare professionals, colleagues, and faculty.
- Communication encompasses both verbal and non-verbal expression, reading, writing, and computer skills.

Essential Functions

- Must have the ability to participate in class discussions, group projects, and practical labs for the purpose of the delivery and receipt of medical information
- Must have the ability to recognize both verbal and non-verbal communication,
- Must have the ability to report accurately and legibly in patients' charts, demonstrating the knowledge of the meaning and spelling of words, rules of composition and grammar
- Must have the ability to explain to other healthcare team members, patients, and/or caregivers' reason for treatment, preventive measures, disease process, and need for referral
- Must have the ability to use computers and other technology to accurately record information and convey critical health-related documentation
- Must have the ability to recognize and respond to physical and psychological needs of patients

Domain: Intellectual

Performance Standards

- Must have critical and logical thinking skills to engage in clinical judgment and problem solving to address issues and problems within all learning environments
- Must have ability to multi-task and to perform work in a logical and sequential manner

Essential Functions

- Must possess the skills to memorize, perform scientific measurement and calculation, reason, analyze, and synthesize information
- Must demonstrate the ability to retrieve, read, understand, and interpret medical, scientific and professional information and literature
- Must have the skills to develop problem-solving and decision-making skills
- Must demonstrate the ability to learn effectively through a variety of modalities including, but not limited to classroom instruction, small group discussion, individual study of materials, preparation and presentation of written and oral reports, and use of computers and other technology
- Must demonstrate the ability to prioritize and complete tasks in laboratory, clinical, and patient care settings with time constraints
- Must perform a variety of duties accurately, often changing from one task to another without loss of efficiency or composure.

Domain: Behavioral/Social

Performance Standards

- Must possess the ability to relate to patients, caregivers, other members of the healthcare team, and faculty in a professional manner
- Must demonstrate sensitivity to people from various backgrounds and experiences
- Must possess the ability to interact with and respond to needs of patients and caregivers from a variety of backgrounds and with differences in emotional, intellectual, and physical health issues

Essential Functions

- Must be able to exercise good judgment; to complete patient care responsibilities appropriately; and to relate to patients, families, and colleagues with courtesy, compassion, maturity, and respect for their dignity
- Must be able to effectively function when faced with challenges and uncertainties in classroom, laboratory, and experiential settings
- Must be able to accept criticism and be able to respond and modify behavior accordingly
- Must be able to interact with faculty, staff, peers, patients, and members of the healthcare team in a mature and professional manner that reflects the core values of the University and the School.

Domain: Data

Performance Standard

- Must have the skills to gather data from written reference material, oral presentations, illustrations, diagrams, and patient observation

Essential Functions

- Must have the ability to gather data from written reference material, computer-based programs, and oral presentations
- Must have the ability to observe and/or conduct demonstrations and experiments
- Must have the ability to utilize various types of assessment skills required for patient-centered care, including reading digital or analog representations of physiologic phenomena

- Must have the ability to execute and properly participate in the activities of a laboratory or an experiential rotation that are components of pharmacy practice
- Must have the skills to read and interpret prescriptions, prescription labels, and drug labels

Domain: Additional Competencies
Performance Standards
- Must have the skills to prepare pharmaceutical products, evaluate patients, and perform basic laboratory tests
- Must have the skills to manipulate and control laboratory equipment and materials

Essential Functions
- Must possess the skills to accurately compound and prepare pharmaceutical products for dispensing to patients
- Must possess the skills to perform basic patient assessments including, but not limited to palpation, auscultation, percussion, and other diagnostic maneuvers
- Must possess the skills to conduct laboratory diagnostic tests and administer non-oral medications

Real-Time Distance Education Technology
Two years of classroom and laboratory coursework must be completed in residence at MCPHS–Worcester/Manchester. All core courses for the Doctor of Pharmacy program, except for laboratory courses, are delivered via real-time distance education technology between campuses. Approximately 85% of the program is taught synchronously from the Worcester campus to the Manchester campus, and the other 15% of the program is taught synchronously from the Manchester campus to the Worcester campus.

Clinical Rotations
A number of clinical rotations in the required curriculum may be scheduled at some distance from the campus. This is necessary to provide a range of diverse learning experiences and ensure availability and quality of clinical rotation sites. The University will make every effort to accommodate requests regarding assignments to experiential education sites, but students generally can expect to be assigned to clinical sites at some distance from the campus for at least a portion of their required clinical rotations. In such instances, students are responsible for transportation to and from their clinical sites and other related travel or housing expenses.

Progression Requirements
Students must maintain a cumulative professional 2.20 grade point average (GPA) to progress into the second and third professional years of the program. All PharmD students must complete all requirements and be in good academic standing before beginning experiential education rotations.

Grades for PSW 350, PPW 401, 402, 403, 500, 501, 502, 503, 504 and 505. are pass/fail and are not included in the professional GPA calculation. A cumulative professional GPA of less than 1.70 with no F grades at the completion of any semester results in non-progression. A cumulative professional GPA of 1.70 or less and one or more F grades at the completion of any semester results in academic dismissal from the program. All progression evaluations will be based on the student's cumulative professional GPA.

Academic Complaint Policy for the Accreditation Council for Pharmacy Education (ACPE)
It is the policy of MCPHS and the School of Pharmacy–Worcester/Manchester (SOP-W/M) to objectively review student grievances related to academic and non-academic issues.

If a student wishes to file a complaint relating to the Doctor of Pharmacy program's adherence to Accreditation Council for Pharmacy Education (ACPE) standards for accreditation, they may do so using either of the procedures that follow.

Internal Procedure
- The student must file a written complaint with the Dean of SOP-W/M.
- The Dean will forward the complaint to an ad hoc committee of three faculty with representatives from the Department of Pharmacy Practice and the Department of Pharmaceutical Sciences. The ad hoc committee will review the complaint and render a decision concerning the complaint. The committee will inform the student of its decision via a written response within 30 working days upon receipt of the complaint.
- If the student wishes to appeal the committee's decision, then the student must file a written appeal to the Dean within 5 working days upon receipt of the written response from the committee.
- The Dean will review the appeal and render a written response to the student within 14 working days upon receipt of the student's written appeal. The decision of the dean is final.
- The Office of the Dean will maintain a copy of all written correspondence.

ACPE Procedure
If a student wishes to file a complaint with the ACPE, the student should contact the Council via email, phone, or mail. The ACPE contact information is available in the catalog in the Introduction section under Accreditation.

Electives
Electives allow students to broaden their knowledge or deepen their understanding in a specific area of interest thus fostering their personal and professional development. Some electives may be campus specific while others are offered on both campuses via distance education technology.

Transfer Policy
A transfer student is any student who 1) was or is enrolled in an ACPE-accredited Doctor of Pharmacy degree program and 2) seeks to apply credits from that program to the SOP-W/M Doctor of Pharmacy program.

Due to the highly integrated and sequential nature of the didactic and experiential components of the SOP-W/M Doctor of Pharmacy curriculum, the School will consider requests for transfer of credits only on a case-by-case basis. Because curricula in Doctor of Pharmacy programs vary greatly, students might not transfer at the same level achieved in the previous program. Transfer applicants will only be admitted as an incoming professional first-year (P1) student.

Acceptance of transfer students is dependent upon the applicant's qualifications and space availability in the SOP-W/M Doctor of Pharmacy program. Consideration will only be given to students who are in good academic, professional, and ethical standing at an ACPE-accredited School of Pharmacy. Acceptance of transfer credits will consider the integrated and sequential nature of the SOP-W/M Doctor of Pharmacy curriculum, and the curricular compatibility of prior coursework to the required SOP-W/M Doctor of Pharmacy coursework.

Decisions on transfer applications are made by the SOP–W/M Admissions Committee. This committee may also seek consultation with the SOP-W/M Curriculum Committee.

All applicants are reviewed in the same holistic manner regardless of whether or not they are transfer applicants. Qualified transfer applicants must participate in the School's formal interview process.

Curriculum: Doctor of Pharmacy (Accelerated)

Preprofessional Courses

REQUIRED COURSE	CREDIT HOURS
Biology (general and human)	7
Anatomy and/or Physiology	3
Chemistry (general)	8
Chemistry (organic)	7
Microbiology with lab	3
Calculus	3
Mathematics or Computer Science	3
Statistics	3
English Composition	3
English Elective	3
Introduction to Psychology	3
Introduction to Sociology	3
Economics (macro, micro, or general)	3
Subtotal for required preprofessional courses	52

ELECTIVES	CREDIT HOURS
General electives – Liberal Art courses	12

Total preprofessional credits: 67 credit hours

Professional Courses

Year I — fall

COURSE	TITLE	CREDIT HOURS
PPW 340	US Healthcare and Public Health Systems	3
PPW 330	Introduction to Patient Care I	3
PSW 300	Pharmaceutical Biochemistry I	2
PSW 311	Pharmaceutics I	3
PSW 350	Service and Care in the Community (a pass/fail course)	1
PSW 304	Introduction to Pharmaceutical Sciences	1
PPW 360	Pharmacy Law	2
PPW 411A	Student Personal and Professional Development IA (continues in Year I - spring)	0
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
PPW 331	Introduction to Patient Care II	2
PPW 379	Drug Literature Evaluation and Informatics in Healthcare I	2
PSW 301	Pharmaceutical Biochemistry II	2
PSW 312	Pharmaceutical Calculations	2
PSW 312L	Pharmaceutics II Lab	1
PSW 313	Pharmacokinetics/Biopharmaceutics	3
PSW 325	Introduction to Human Physiology and Pathophysiology	3
PPW 378	Pharmacy Administration/Pharmacoeconomics	2
PPW 411B	Student Personal and Professional Development IB	1
TOTAL		18

Year I — summer

COURSE	TITLE	CREDIT HOURS
PPW 333	Introduction to Patient Care III with lab	2
PPW 348	Self-Care Therapeutics/Pharmacotherapeutics I	4
PSW 385	Pharmacology / Toxicology / Medicinal Chemistry I	3
PSW 335	Human Physiology and Pathophysiology I	3
PPW 384	Drug Literature Evaluation and Informatics in Healthcare II	1
	Elective	2
TOTAL		15

Year II — fall

COURSE	TITLE	CREDIT HOURS
PPW 401*	Introductory Pharmacy Practice Experience—Community (a pass/fail course)	4
PPW 402*	Introductory Pharmacy Practice Experience—Institutional (a pass/fail course)	4
PPW 403^	Preparation & Application Through IPPE (a pass/fail course)	1
PPW 460^^	Pharmacy Ethics	2
PPW 440**	Patient Care Seminar I	1
PPW 450**	Pharmacotherapeutics II	4
PSW 445**	Pharmacology / Toxicology / Medicinal Chemistry II	2
PSW 435**	Human Physiology and Pathophysiology II	1
PPW 412A	Student Personal and Professional Development IIA	0
	(continues in Year II – spring)	
TOTAL		19

** Four weeks ^One Week ^^14 weeks ** Six weeks*

Year II — spring

COURSE	TITLE	CREDIT HOURS
PPW 445	Patient Care Seminar II with lab	2
PPW 453	Pharmacotherapeutics III	6
PSW 475	Pharmacology / Toxicology / Medicinal Chemistry III	7
PSW 470	Human Physiology and Pathophysiology III	2
PPW 412B	Student Personal and Professional Development IIB	1
	Elective	2
TOTAL		20

Year II — summer

COURSE	TITLE	CREDIT HOURS
PPW 448	Patient Care Seminar III lab	1
PPW 457	Pharmacotherapeutics IV	6
PSW 485	Pharmacology / Toxicology / Medicinal Chemistry IV	3
PSW 473	Pharmacogenomics	2
PSW 413	Applied Clinical Pharmacokinetics	1
PPW 465	Clinical Reasoning	1
TOTAL		14

Year III

COURSE	TITLE	CREDIT HOURS
PPWC 500*	Advanced Pharmacy Practice Experience- Inpatient Adult Patient Care	6
PPWC 501*	Advanced Pharmacy Practice Experience- Ambulatory Care	6
PPWC 502*	Advanced Pharmacy Practice Experience- Hospital/Health Systems	6
PPWC 503*	Advanced Pharmacy Practice Experience- Community	6
PPWC 504*	Advanced Pharmacy Practice Experience- Patient Care Elective	6
PPWC 505*	Advanced Pharmacy Practice Experience- Non-Patient Care Elective	6
PPW 414	NAPLEX Readiness	1
TOTAL		37

** Six weeks each; pass/fail course*

Total credits required to complete degree requirements: 138 credit hours

Opportunities for Enhancement

Students will have an opportunity to enroll in a concentration, graduate certificate or dual program while completing their studies in the PharmD program. A concentration is an identified area of focused study that includes a series of course work within the standard curricular expectations. A graduate certificate represents training at the Master's or doctoral level and requires courses in addition to the standard curricular expectations. Students will be able to complete the concentration or graduate certificate program prior to graduation. The dual program will require additional course work after graduation. In addition to the opportunities listed below, the following graduate certificates are also available to students and are offered in collaboration with other schools within the University: Precision Medicine, Healthcare Management, Public Health, Clinical Research, Health Policy, Regulatory Affairs, Health Economics and Outcomes, Pharmaco-epidemiology, and Artificial Intelligence in Healthcare.

Pharmaceutical Cancer Research Concentration

The Cancer Research Concentration is designed to provide a comprehensive training experience with a major focus on the development of scientific bench research skills while tackling clinically relevant issues in cancer research, including instruction with professional literature and database searches, scientific/ manuscript writing, and oral presentations. The research findings presented by the students at scientific conferences are often submitted for consideration for publication in reputable scientific journals.

Curriculum: Pharmaceutical Cancer Research Concentration

COURSE	TITLE	CREDIT HOURS
PSW 368	Experimental Cancer Research	2
PSW 355	Directed Study	2
PPWC 505	Advanced Pharmacy Practice Experience- Non-Patient Care Elective	6
TOTAL		10

Geriatric Concentration

The Geriatric Concentration is designed to provide students with a focus of study in the education needed to care for older adults. Students will learn the biology of aging and treatment concerns, medication therapy management in older adults, polypharmacy, de-prescribing and falls prevention. Students will learn to recognize emerging opportunities for geriatric practice and explore national organizations, geriatric specialties, and postgraduate programs.

Curriculum: Geriatric Concentration

COURSE	TITLE	CREDIT HOURS
PPW 371K	Fundamentals of Aging	2
PPW 370D	Directed Study	2
PPWC 500	Advanced Pharmacy Practice Experience- Inpatient Adult Patient Care OR	6
PPWC 504	Advanced Pharmacy Practice Experience- Patient Care Elective	6
TOTAL		10

Classical and Clinical Pharmacology Concentration

The Classical and Clinical Pharmacology Concentration is designed to provide students with an advanced understanding of the components of classical and clinical pharmacology. Students understand the basic tenets of classical pharmacology by learning about animal models used for testing drugs and using software products to perform simulated experiments using whole animals (BIOSOFT CardioLab) and isolated tissue preparation (BIOSOFT Ileum). Clinical experience is fostered via students applying didactic principles learned in pharmacology and therapeutics courses by treating patients in a virtual clinical setting using technology available to simulate real-world clinical scenarios.

Curriculum: Classical and Clinical Pharmacology Concentration

COURSE	TITLE	CREDIT HOURS
PSW 361	The Pharmacological Basis of Drug Development	2
PSW 365.M	Virtual Experimental Pharmacology	2
PPWC 505	Advanced Pharmacy Practice Experience-Non-Patient Care Elective	6
TOTAL		10

Curriculum: Optimizing Health and Well-Being Concentration

The Optimizing Health and Well-Being Concentration is a focus of study that reinforces and synthesizes knowledge of basic physiology, pathophysiology, care in the community, and therapeutics concepts, as learned in the Physiology/Pathophysiology series, the Therapeutics series, and in Care in the Community. Students develop their skills around behaviors that improve bodily function and enhance a person's ability to adapt to changing environments through promoting health, rather than absence of disease.

Optimizing Health and Well-Being Concentration

COURSE	TITLE	CREDIT HOURS
PSW 365U	Rx Prevention	2
PPW 357	Koru Mindfulness Meditation for Stress Reduction OR	2

PPW 371	The Patient Behind the Pills	2
PPWC 504	Advanced Pharmacy Practice Experience- Patient Care Elective	6
TOTAL		10

Pediatric Pharmacy Concentration

The Pediatric Pharmacy Concentration is designed to provide students with the necessary tools to pursue a career in pediatric pharmacy. The concentration exposes students to concepts surrounding the general care of pediatric patients, and allows them to reflect upon assessment, communication, and pharmacotherapy concepts that directly impact the safe and effective care and delivery of medications to this population. The concentration also provides practical patient care experiences dedicated to the care of pediatric patients where students can connect didactic principles to experiential learning.

Curriculum: Pediatric Pharmacy Concentration

COURSE	TITLE	CREDIT HOURS
PPW 381	Introduction to the care of Pediatric Patients	2
PPW 481	Concepts in Pediatric Pharmacotherapy	2
PPWC 504	Advanced Pharmacy Practice Experience- Patient Care Elective	6
TOTAL		10

Doctor of Pharmacy (Accelerated)/Graduate Certificate in Medication Safety (Online)

The Doctor of Pharmacy (Accelerated) and Graduate Certificate of Medication Safety is a joint program which prepares graduates to understand the fundamental concepts and tools that will guide them in developing various initiatives in medication safety at their practice settings. This includes creating a culture of safety, aligning medication safety plans with the goals of the organization, learning from defects in medication-related processes, incorporating human and environmental factors to reduce medication error and adverse events, and effectively implementing change. Students may begin their study in the Graduate Certificate of Medication Safety program in the summer of their first professional year, replacing their elective with a Graduate Certificate course. Students will continue to take medication safety-related courses throughout the curriculum and obtain their certificate with the conferral of the Doctor of Pharmacy degree.

Curriculum: Doctor of Pharmacy (Accelerated) / Graduate Certificate in Medication Safety (Online)

In addition to completing professional courses, the following courses either replace required PharmD electives, or add-on to the required PharmD professional courses:

Year I – summer: MSM 702 Introduction to Medication Safety (2 credits); replaces PharmD elective

Year II – fall: MSM 701 Introduction to Quality in Healthcare (2 credits): an add-on course

Year II – spring: MSM 703 Communication and the Team Approach (2 credits); replaces PharmD elective

Year III – fall: MSM 704 Medication Safety Tools, Analysis, and Application (3 credits): an add-on course

Total credits required to complete requirements for Accelerated Doctor of Pharmacy and Graduate Certificate in Medication Safety: 143 credit hours with Medication Safety courses replacing Pharmacy Electives.

Bachelor of Science in Pharmacy and Life Sciences

Students in the Bachelor of Science in Pharmacy and Life Sciences program on the MCPHS-Boston campus who matriculate into the accelerated PharmD program in the School of Pharmacy-Worcester/Manchester complete the BS degree by successfully completing additional courses as part of the SOP-W/M PharmD professional curriculum.

Students choosing this option must successfully complete all pre-professional bachelor's degree-related courses (63 credits) on the MCPHS-Boston campus (please refer to the pre-professional requirements for SOP-Boston) and must satisfy all SOP-W/M admission requirements for the accelerated Doctor of Pharmacy program. In addition to GPA and course completion and passing requirements, the SOP-W/M and the Accreditation Council for Pharmacy Education require all pre-professional students to successfully complete an admission interview process to be admitted into the professional phase of the Doctor of Pharmacy program. Students enrolled in this program must have C- in all professional courses in the accelerated PharmD program and an overall GPA of 2.2 at the end of professional years I and II.

(Note that students completing the Bachelor of Science degree are not eligible for pharmacist licensure; all requirements for the Doctor of Pharmacy degree must be completed to be eligible to take the pharmacist licensure

exams. Similarly, completing the Bachelor of Science degree does not qualify the graduate for entrance into the Non-Traditional Doctor of Pharmacy Pathway.)

Curriculum: Bachelor of Science in Pharmacy and Life Sciences Courses

Pre-professional Courses - *Please refer to SOP-Boston for requirements*

Years I and II courses are completed on the MCPHS-Boston campus.

Professional Courses at SOP-W/M

Year III — fall (Professional Year I of accelerated PharmD program)

COURSE	TITLE	CREDIT HOURS
PPW 340	US Healthcare and Public Health Systems	3
PPW 330	Introduction to Patient Care I	3
PSW 300	Pharmaceutical Biochemistry I	2
PSW 311	Pharmaceutics I	3
PSW 350	Service and Care in the Community (a pass/fail course)	1
PSW 304	Introduction to Pharmaceutical Sciences	1
PPW 360	Pharmacy Law	2
PPW 411A	Student Personal and Professional Development IA (continues in Year I - spring)	0
TOTAL		15

Year III — spring (Professional Year I of accelerated PharmD program)

COURSE	TITLE	CREDIT HOURS
PPW 331	Introduction to Patient Care II	2
PPW 379	Drug Literature Evaluation and Informatics in Healthcare I	2
PSW 301	Pharmaceutical Biochemistry II	2
PSW 312	Pharmaceutical Calculations	2
PSW 312L	Pharmaceutics II Lab	1
PSW 313	Pharmacokinetics/Biopharmaceutics	3
PSW 325	Introduction to Human Physiology and Pathophysiology	3
PPW 378	Pharmacy Administration/Pharmacoeconomics	2
PPW 411B	Student Personal and Professional Development IB	1
TOTAL		18

Year III — summer (Professional Year I of accelerated PharmD program)

COURSE	TITLE	CREDIT HOURS
PPW 333	Introduction to Patient Care III with lab	2
PPW 348	Self-Care Therapeutics/Pharmacotherapeutics I	4
PSW 385	Pharmacology / Toxicology / Medicinal Chemistry I	3
PSW 335	Human Physiology and Pathophysiology I	3
PPW 384	Drug Literature Evaluation and Informatics in Healthcare II	1
	Elective	2
TOTAL		15

Year IV — fall (Professional Year II of accelerated PharmD program)

COURSE	TITLE	CREDIT HOURS
PPW 401*	Introductory Pharmacy Practice Experience—Community (a pass/fail course)	4
PPW 402*	Introductory Pharmacy Practice Experience—Institutional (a pass/fail course)	4
PPW 403^	Preparation & Application Through IPPE (a pass/fail course)	1
PPW 460^^	Pharmacy Ethics	2
PPW 440**	Patient Care Seminar I	1
PPW 450**	Pharmacotherapeutics II	4
PSW 445**	Pharmacology / Toxicology / Medicinal Chemistry II	2
PSW 435**	Human Physiology and Pathophysiology II	1

PPW 412A	Student Personal and Professional Development IIA	0
	(continues in Year II – spring)	
TOTAL		19

** Four weeks ^One Week ^^14 weeks ** Six weeks*

Year IV — spring (Professional Year II of accelerated PharmD program)

COURSE	TITLE	CREDIT HOURS
PSW 475	Pharmacology / Toxicology / Medicinal Chemistry III	7
PSW 470	Human Physiology and Pathophysiology III	2
PPW 412B	Student Personal and Professional Development IIB	1
	Elective	2
TOTAL		12

Total credits required to complete degree requirements: 142 credit hours

Dual Program - Doctor of Pharmacy/Master in Clinical Investigation and Development

Students enrolled in the accelerated Doctor of Pharmacy Program have an opportunity to pursue a master's degree in Clinical Investigation and Development. This STEM program is for students interested in pursuing a career in clinical research coordination or clinical research monitoring.

Curriculum: Doctor of Pharmacy/Master in Clinical Investigation and Development

In addition to completing professional courses, the following courses either replace required PharmD electives, or add-on to the required PharmD professional courses:

Year I – summer: DRA 804 FDA and Regulatory Affairs (3 credits); replaces PharmD elective

Year II – fall: PSB 760 Fundamentals of Pharmaceutics (3 credits): an add-on course

Year II – spring: DRA 807 Statistics in Clinical Research (3 credits); replaces PharmD elective

Year II – summer: DRA 808 Protection of Human Research Subjects (3 credits): an add-on course

Year III – fall: DRA 809 Health Epidemiology (3 credits): an add-on course

Total credits required to complete dual degree requirements: 164 (138 credits pertain to the PharmD curriculum; 11 credits added to the PharmD curriculum; and 15 credits are completed after graduation).

Dual Program - Doctor of Pharmacy/Master in Regulatory Sciences

Students enrolled in the accelerated Doctor of Pharmacy Program have an opportunity to pursue a master's degree in Regulatory Science. This STEM program is for students interested in pursuing a career in regulatory sciences, quality assurance, or quality control.

Curriculum: Doctor of Pharmacy/Master in Regulatory Sciences

In addition to completing professional courses, the following courses either replace required PharmD electives, or add-on to the required PharmD professional courses:

Year I – summer: DRA 804 FDA and Regulatory Affairs (3 credits); replaces PharmD elective

Year II – fall: PSB 760 Fundamentals of Pharmaceutics (3 credits): an add-on course

Year II – spring: DRA 807 Statistics in Clinical Research (3 credits); replaces PharmD elective

Year II – summer: DRA 808 Protection of Human Research Subjects (3 credits): an add-on course

Year III – fall: DRA 809 Health Epidemiology (3 credits): an add-on course

Total credits required to complete dual degree requirements: 164 (138 credits pertain to the PharmD curriculum; 11 credits added to the PharmD curriculum; and 15 credits are completed after graduation

Dual Program - Doctor of Pharmacy/Master of Business Administration in Healthcare Technology
Students enrolled in the accelerated Doctor of Pharmacy Program have an opportunity to pursue a master's degree in Business Administration in Healthcare Technology. This STEM program is for students interested in pursuing a career in life sciences, biotech industries, and healthcare management.

Curriculum: Doctor of Pharmacy/Master of Business Administration in Healthcare Technology

In addition to completing professional courses, the following courses either replace required PharmD electives, or add-on to the required PharmD professional courses:

Year I – summer: HTM 720 Business Statistics and Data-Driven Decision-Making (3 credits); replaces PharmD elective

Year II – fall: HTM 830 Medical Devices and Technology (3 credits): an add-on course

Year II – spring: HTM 747 Management Science Operations (3 credits); replaces PharmD elective

Year II – summer: HTM 727 Strategic Finance for Health Tech & Science (3 credits): an add-on course

Year III – fall: HTM 737 Applied Data Science, AI & Business Analytics OR HTM 820 Revenue Cycle: Finance & Acct (3 credits): an add-on course

Total credits required to complete dual degree requirements: 161 (138 credits pertain to the PharmD curriculum; 11 credits added to the PharmD curriculum; and 12 credits are completed after graduation

Dual Program - Doctor of Pharmacy/Master in Regulatory Affairs and Health Policy

Students enrolled in the accelerated Doctor of Pharmacy Program have an opportunity to pursue a master's degree in Regulatory Affairs and Health Policy. This program is for students interested in pursuing a career that requires navigating regulatory and legal environment such as helping pharmaceutical companies gain FDA approval; or assisting regulatory agencies in developing healthcare policies.

Curriculum: Doctor of Pharmacy/Master in Regulatory Affairs and Health Policy

Professional Courses
In addition to completing professional courses, the following courses either replace required PharmD electives, or add-on to the required PharmD professional courses:

Year I – summer: DRA 804 FDA and Regulatory Affairs (3 credits); replaces PharmD elective

Year II – fall: DRA 815 International Regulatory Affairs (3 credits): an add-on course

Year II – spring: DRA 812 Advanced Topics in Regulatory Affairs (3 credits); replaces PharmD elective

Year II – summer: DRA 807 Statistics in Clinical Research (3 credits): an add-on course

Year III – fall: DRA 802 Law and Health Policy of Drugs and Devices (3 credits): an add-on course

Total credits required to complete dual degree requirements: 158 (138 credits pertain to the PharmD curriculum; 11 credits added to the PharmD curriculum; and 9 credits are completed after graduation).

Dual Program - Doctor of Pharmacy/Master in Clinical Research
Students enrolled in the accelerated Doctor of Pharmacy Program have an opportunity to pursue a master's degree in Clinical Research. This program is for students interested in pursuing a career that requires developing, conducting and monitoring clinical trials on either a patient-based clinical research track or an industry-related track.

Curriculum: Doctor of Pharmacy/Master in Clinical Research

Professional Courses
In addition to completing professional courses, the following courses either replace required PharmD electives, or add-on to the required PharmD professional courses:

Year I – summer: MCR 802 Research Methodology and the Development of Protocols and Proposals (3 credits); replaces PharmD elective

Year II – fall: DRA 808 Protection of Human Research Subjects (3 credits): an add-on course

Year II – spring: MCR 803 Conducting Clinical Research Studies (3 credits); replaces PharmD elective

Year II – summer: DRA 804 FDA and Regulatory Affairs (3 credits): an add-on course

Year III – fall: MCR 801 Pharmaceutical R&D: From Discovery to Market (3 credits): an add-on course

Total credits required to complete dual degree requirements: 158 (138 credits pertain to the PharmD curriculum; 11 credits added to the PharmD curriculum; and 9 credits are completed after graduation).

MCPHS-MANCHESTER

MCPHS–Manchester
School of Nursing

Tammy Gravel, EdD, MS, RN, Dean of the School of Nursing and Chief Nurse Administrator and Associate Professor

Carlene Blais, DNP, MSN, RN-BC, Associate Professor and Associate Dean, BSN Program Administrator, Manchester

Erin Murphy-Swenson, DNP, MS, CNM, Associate Professor and Associate Dean of Clinical Education & Experiential Learning

Corinne Butler, MSN, RN, Skills Lab Manager, Assistant Professor

Professor Britt; Associate Professors Adams, Blais, Gravel, Murphy-Swenson, Smith; Assistant Professors Butler, Hamilton

Degree Program
Bachelor of Science in Nursing (Postbaccalaureate)

Bachelor of Science in Nursing (Postbaccalaureate) – 16-month Curriculum
The New Hampshire Board of Nursing and the New Hampshire Postsecondary Education Commission have approved the 16-month accelerated BSN program implemented at the MCPHS–Manchester campus. Designed specifically for students with a bachelor's degree in another field, the curriculum is identical to that currently offered at the Boston and Worcester campuses. Students attend classes in Manchester. Program instruction is conducted in state-of-the-art facilities at the MCPHS-Manchester campus with clinical experiences in selected hospital and community agencies in Manchester and the surrounding regions.

This 16-month program of study provides an accelerated option for students ready for a challenging transition to a career as a Bachelor of Science in Nursing registered nurse. Building on previous learning and experience gained from the student's first bachelor's degree, the 16-month program of study mirrors the Boston-based program's professional major, guiding students toward gaining the knowledge, skills, competencies, and values required to practice as a registered nurse in the 21st century.

The Postbaccalaureate BSN is offered in a 16-month year-round format with a January or September admission. The September-admission program consists of a 15-week fall semester, a 15-week spring semester, a 12-week summer session, and a 15-week fall semester, concluding in December of the second year. The January-admission program consists of a 15-week spring semester, a 12-week summer session, a 15-week fall semester and a 15-week spring semester, concluding in May of the second year.

To be eligible for the program, the student must possess a prior Bachelor of Science or Bachelor of Arts degree and have completed the following prerequisite coursework with a minimum grade of C+ within the past 10 years: chemistry (with lab), anatomy and physiology (with lab), microbiology (with lab), statistics, nutrition and human development. Students with a baccalaureate degree will not be required to meet the MCPHS general education core requirements. The program requires a total of 120 credit hours of credit for completion. Upon completion of the program, students will be eligible to sit for the National Council of State Boards of Nursing Licensure Examination for Registered Nurses (NCLEX-RN).

NOTE: An exception to the policy that no course examinations or graded assignments worth more than 15% of final course grade may be scheduled during the week before final examinations exist for Nursing courses. Major graded assignments or exams may be administered the week before the final week of the course. A reading day (scheduled only on a weekday, no Saturday or Sunday) will be provided between the end of scheduled classes / clinical rotations and the administration of any final exams.

For details on the curriculum, prerequisites, academic policies, professional & technical standards, and other information about the program, refer to the MCPHS–Boston School of Nursing section of this catalog. For the most current information regarding the program in Manchester, refer to the MCPHS website at www.mcphs.edu.

MCPHS–Manchester
School of Occupational Therapy (Manchester/Worcester)

Professor C. Douglas Simmons, PhD, OTR/L, FAOTA, FNAP, Program Director, Professor

Assistant Professor Olivia Freeman, MA, OTR/L, Academic Fieldwork Coordinator. Assistant Professor

Professor Ellen Rainville, OTD, OTR/L Site Coordinator, Professor

Professors Ellen Rainville, C. Douglas Simmons
Associate Professor Angela Butler, Heidi Robertson
Assistant Professors Danielle Amero, Carole Dinan, Michelle Dowling, Olivia Freeman, Devlynn Neu, Megan Silvia
Fieldwork Staff Andrea Desimone, Kimberly Shurtleff
Administrative Assistant Janette Clemente

Degree Program
Master of Science in Occupational Therapy

Master of Science in Occupational Therapy
The Master of Science Occupational Therapy Program (MSOT) on the MCPHS Manchester campus prepares graduates with the advanced knowledge and skills for contemporary occupational therapy practice. The curriculum includes foundational arts and sciences, basic tenets and theoretical perspectives of occupational therapy, clinical sciences, service delivery and management, professional responsibilities and ethics, and scholarship competencies in the educational preparation of occupational therapists. The coursework is designed to reinforce and build on required elements that allow students to acquire, synthesize, analyze and apply knowledge and skills in a variety of clinical, community-based, research and management environments.

The MSOT program builds on the knowledge acquired from an undergraduate arts or science education and has two components: didactic and fieldwork education. Through the didactic component, students gain knowledge and skills and develop professional behavior required for occupational therapy practice. Through fieldwork education students apply knowledge, skills, and professional behavior in clinical, school, and community-based settings both at MCPHS and off-campus. Fieldwork education accounts for about one half of the curriculum.

The curriculum for the MSOT has a total of 84 credit hours with approximately 30 weeks of fieldwork education. The program consists of five areas of concentration: Basic Tenets of Occupational Therapy Theory and Practice (24 credit hours), Foundations of Occupational Practice (18 credit hours), Scholarship (12 credit hours), Management of Occupational Services (6 credit hours), and Fieldwork Education (24 credit hours).

Admission Prerequisites
- Baccalaureate degree from an accredited postsecondary institution. Official transcripts from all colleges or universities attended.
- Minimum overall grade point average of 3.0 or better on a 4.0 scale.
- Minimum prerequisite 3.0 GPA on a 4.0 scale.
- Three letters of recommendation
- Resume
- Personal Essay (Why You Selected Occupational Therapy as Your Profession)
- Official TOEFL (minimum of 213 computer-based or 79 iBT) or ELTS (minimum 6.5) scores for all applicants whose primary language is not English
- Official transcripts for international colleges or universities must be submitted to the Center for Educational Documentation (CED), Educational Credential Evaluators, Inc. (ECE) or World Education Services (WES) for a course-by-course evaluation. MCPHS requires both the official international transcript(s) and an evaluated copy.

Prerequisite Coursework

- Human Anatomy and Physiology I & II with Lab (8 credits)
- Abnormal Psychology (3 credit hours)
- Child Development, Adult Development Lifespan Development (3 credit hours)
- Statistics (3 credit hours)
- Social Sciences Electives (9 credits) (Acceptable courses include additional Psychology or Sociology, Cultural Studies, Anthropology, American Studies, Human Studies, Ethnic Studies, Government, Economics, History or Political Studies)
- Kinesiology or Exercise Physiology with lab (3-4 credits) (Recommended but not required)

All math and science prerequisite coursework must have been completed within 10 years of the anticipated date of matriculation. The School of Occupational Therapy does not accept experiential learning credits or advance placements. Transfer credits are considered on a per student basis. The Master of Science in Occupational Therapy (MSOT) does not award credits for prior experiential learning and/or credits by examination

Essential Functions

The practice of occupational therapy includes the examination, diagnosis, and treatment of people with physical challenges, movement dysfunction, pain, and mental challenges. Occupational therapists must be prepared to conduct in a timely manner a relevant patient examination, evaluate the results of this examination and synthesize these data to establish an accurate occupational diagnosis/profile, prognosis and plan of care, implement an intervention and use the process of re-examination to assess patient outcomes. Occupational therapists must also possess the skills necessary to determine when referral of the patient/client to another healthcare professional is appropriate. Occupational therapists must provide evidence that the care that they provide is effective, often through the conduct of clinically based research.

Master of Science in Occupational Therapy students must be able to complete the following:

- Participation in all required aspects of classroom and laboratory activities;
- Participation in all required aspects of both level one and level two fieldwork experience activities;
- Effective communications with other students, instructors, assistive personnel, patients/clients, family members, payors, and other health care professions;
- Maintenance of a safe environment for other individuals and for oneself, including use of universal precautions;
- Completion of elements of patient/client management, including examination, evaluation of data, formulation of occupational diagnosis and prognosis, intervention, assessment of outcomes, and record keeping;
- Completion of specific patient/client interventions and treatments, including patient and family education, occupation-focused activities, application of modalities, therapeutic exercise, and functional skill training.

Fieldwork agencies may have additional or agency-specific technical standards, which take precedence over MCPHS technical standards. The Accreditation Council for Occupational Therapy Education (ACOTE) accredits professional occupational therapy programs and requires that graduates of these programs be able to deliver entry-level generalist clinical services. Graduates of entry-level programs are required to possess a broad base of knowledge and skills requisite for the practice of occupational therapy. Occupational therapists require the intellectual-communication, behavioral-social, observational, and motor abilities to meet the standard of practice.

Certain challenges can interfere with a student's ability to complete the program of study and acquire the essential functions necessary for the practice of occupational therapy. Reasonable accommodation can be made to compensate for some limitations. However, those that interfere with patient/client care, safety or require the use of an intermediary may be incompatible with independent professional practice.

Technical Standards for Occupational Therapy

Intellectual and Communication Skills

Intellectual skills include the ability to recall and comprehend large amounts of didactic information and to apply this information to the examination, evaluation, and management of intervention with patients/clients who have complex occupational performance problems. Effective communication skills enable the occupational therapist to elicit appropriate information from patients/clients and to effectively explain assessment and intervention processes and procedures. Some of the skills an individual must be able to demonstrate include, but are not limited to, the ability to:

- Communicate clearly and in a timely manner with patients/clients, families and care providers, physicians and other health professionals, community and professional groups, and colleagues;

- Document clearly, and in a timely manner in patient/client records, reports to physicians, insurance reports, and order forms;
- Respond to emergency situations;
- Participate in group meetings to deliver and receive information and to respond to questions from a variety of sources.

Behavioral and Social Attributes
Students must demonstrate the ability to practice in a professional and ethical manner and possess the emotional maturity to practice in a stressful work environment. Compassion, integrity, concern for others, interpersonal skills, cultural humility, and motivation are all personal attributes associated with the practice of occupational therapy.

Some of the skills an individual must be able to demonstrate include but are not limited to the ability to:

- Recognize and respond appropriately to individuals of all ages, ethnicities, socio-economic, religious, and cultural backgrounds;
- Cope with the stress of heavy workloads, demanding patients/clients, and life-threatening clinical situations;
- Recognize and respond appropriately to potentially hazardous situations.

Observational Skills
Observation is integral to effective occupational therapy practice. Some of the skills an individual must be able to demonstrate include but are not limited to the ability to:

- Observe and interpret patient/client participation in a wide variety of occupations applying a broad range of biopsychosocial knowledge and perspectives;
- Read and interpret patient/client records, specialized equipment, patient/client assessment data, professional literature, and notes from patients/clients, physicians, and other health professionals.

Motor Skills
The practice of occupational therapy requires that practitioners possess the ability to perform evaluative and therapeutic procedures, requiring specific physical skills and stamina. An occupational therapist must be able to use vision and somatic sensation in the evaluation and treatment of patients/clients. Some of the skills an individual must be able to demonstrate include but are not limited to the ability to:

- Lift, carry, and push patients (150 lbs.) in bed or wheelchairs, heavy equipment, and patients/clients transferring from one surface to another using proper body mechanics;
- Walk and balance well enough to help patients/clients walk and transfer with or without equipment, and prevent injury to patient/client and self;
- Exhibit sufficient manual dexterity to manipulate small equipment, provide support and resistance as needed during the performance of complex occupations, perform CPR (cardiopulmonary resuscitation), and treat acutely ill patients without disturbing sensitive monitoring instruments and lines;
- Provide for patient/client's safety and well-being in all intervention activities.

Accreditation
The entry-level occupational therapy master's degree program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 7501 Wisconsin Avenue, Suite 510E, Bethesda, MD 20814, ACOTE's telephone number c/o AOTA is (301) 652-6611, web address is www.acoteonline.org and email is accred@aota.org. Graduates of the program will be eligible to sit for the national certification examination for the occupational therapist administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the exam, the individual will be an Occupational Therapist Registered (OTR). In addition, all states require licensure to practice; however, state licenses are usually based on the results of the NBCOT Certification Examination. **Note that a felony conviction may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.**

This program is approved by the Division of Higher Education-Higher Education Commission, Department of Education State of New Hampshire.

Admission Requirements for Occupational Therapy (MSOT) (Manchester/Worcester)
We recognize that applying to graduate school can be a daunting process; our Admission staff is here to help you. Contact us if you have questions along the way.

Manchester Admission Office
Admissions.manchester@mcphs.edu
603.314.1701

Worcester Admission Office
Admissions.worcester@mcphs.edu
508.373.5607

Application for the MSOT program is through the Occupational Therapy Centralized Application Service (OTCAS) at https://otcas.liaisoncas.com/applicant-ux/#/login.

Professional Behaviors
In addition to knowledge and skill acquisition, the process of becoming a professional involves developing competence in professional behavior. Students are expected to always display professional behavior including during fieldwork experiences. This includes displaying a professional demeanor in interactions and boundaries with patients/clients and their families, clinical/school/healthcare staff, peers, faculty and the public always in consideration of their representation of the profession of occupational therapy and MCPHS.

Academic Standards, Progression and Retention
The academic progress of each student will be reviewed at the end of each academic semester. Progression in the MSOT program is dependent on the student's maintaining a minimum cumulative grade point average (GPA) of 3.0 and a semester GPA of 3.0 in all MSOT courses.

To progress in the didactic phases of the program, students must achieve a final course grade of B- or better. To progress within the clinical phases of the program students must obtain a pass (P) score on Level I experiences and obtain a minimal score of 122 on the American Occupational Therapy Association Fieldwork Performance Evaluation for the Occupational Therapist for Level II Fieldwork experiences.

In all MSOT courses, obtaining one course grade lower than a B- results in a student having to develop a remediation plan associated with OTH 685 Directed Study in Occupational Therapy. The student will take this remediation course in conjunction with other courses to remain in sequence. A student may only take OTH 685 once to remediate a grade below B-.

If a student obtains another course grade below a B- this course(s) must be repeated, which stops progression in the program. The student is placed into a non-progression status as MSOT courses are offered only once per year. The student will be placed into a cohort that is targeted to graduate later than the students' original cohort. Students may be placed into a non-progression status once; a student who receives a second non-progression in a subsequent semester will be recommended for dismissal from the MSOT program.

Students who receive a failing fieldwork grade on the American Occupational Therapy Association Fieldwork Performance Evaluation for the Occupational Therapists (below 122) or are requested to leave a fieldwork site prior to completion will need to arrange with the AFWC (Academic Fieldwork Coordinator) to complete another fieldwork rotation at another site. The timing of this clinical rotation cannot be guaranteed to follow program sequence and may result in a later graduation date. Failure or dismissal from 2 fieldwork rotations will result in dismissal from the program. Level II fieldwork must be completed within 2 years of completion of all coursework that is prerequisite to fieldwork.

If a student is unable to progress in the didactic portion or the fieldwork portion of the program, the student will be referred to the School of Occupational Therapy Academic Standing Committee with a recommendation for dismissal. Final appeals are to the Vice President of Academic Affairs/Provost.

If there is a disruption in the sequence of the MSOT curriculum by a student for a period of one semester or more, or a student has a leave of absence, the student must validate previous knowledge and skills from previous didactic and fieldwork experiences to ensure that they are competent and safe in the delivery and application of patient care. (NOTE: There is no guarantee that fieldwork space for Level I and Level II fieldwork experience can be maintained, it could take a year or more for reentry due to lack of clinical placement availability.)

Curriculum: Master of Science in Occupational Therapy (MSOT)

Year I — fall

COURSE	TITLE	CREDIT HOURS
OTH 500	Contemporary Theory in Occupational Therapy Practice	3
OTH 505	Clinical Reasoning in Occupational Therapy	3
OTH 510	Practice Engagement: Mental Wellness	3
OTH 511	Practice Engagement: Therapeutic Groups	3
OTH 520	Scholarship in Practice: Evidence-Based Practice	3
TOTAL		15

Year I — spring

COURSE	TITLE	CREDIT HOURS
OTH 525	Practice Engagement: Environments and Technology (with lab)	4
OTH 530	Motor Performance Across the Lifespan (with lab)	4
OTH 535	Scholarship in Practice: Methodologies	3
OTH 540	Practice Engagement: Assessment Fundamentals Across the Lifespan	3
OTH 565	Apprenticeship: Community Mental Wellness (Level I)	3
TOTAL		17

Year I — summer

COURSE	TITLE	CREDIT HOURS
OTH 545	Neuroscience Foundations for Practice	3
OTH 550	Practice Engagement: Adult Rehabilitation (with lab)	4
OTH 555	Scholarship in Practice: Applied Designs and Methods	3
OTH 560	Systems of Practice: Managing the Practice of Occupational Therapy	3
OTH 570	Apprenticeship: Adult Rehabilitation (Level I)	4
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
OTH 600	Practice Engagement: Children and Adolescents (with lab)	4
OTH 605	Scholarship in Practice: Academic Careers in Occupational Therapy	3
OTH 610	Practice Engagement: Vision and Cognition Across the Lifespan	3
OTH 615	Systems of Practice: Advance Management Concepts for Occupational Therapy and Program Planning - Capstone	3
OTH 630	Apprenticeship: Children and Adolescents (Level I)	4
TOTAL		17

Year II — spring

COURSE	TITLE	CREDIT HOURS
OTH 620	Preparing for Professional Life I	2
OTH 640	Level II Fieldwork	7
TOTAL		9

Year II — summer

COURSE	TITLE	CREDIT HOURS
OTH 625	Preparing for Professional Life II	2
OTH 645	Level II Fieldwork	7
TOTAL		9

Total credits to complete degree requirements: 84 credit hours

OTH 685 Directed Study in Occupational Therapy (variable credits 1-3) is offered each semester for those students who have an active remediation plan.

MCPHS–Manchester
School of Physician Assistant Studies (Manchester/Worcester)

Kristy Altongy-Magee, DScPAS, PA-C, Associate Professor, Program Director and Director of Assessment

Nicole Dettmann, DScPAS, MPH, PA-C, Professor, Associate Program Director and Director of Clinical Education, Associate Professor

Stephanie Maclary, RN, MHS, PA-C, Assistant Professor and Director of Didactic Education

John (Jack) Kelly, MD, Clinical Associate Professor and Medical Director

Professor Dettmann; Associate Professors Altongy-Magee, Dillon, Hricz, Stowell, Gallagher; Assistant Professors Baer, Bajko, Beaumont, Caffrey**,** Cerreto, Chouinard, Huynh, Maclary, Petrillo-Deluca, Racine, Steiner (Emeritus)

Degree Program
Master of Physician Assistant Studies (MPAS) (Accelerated)

Master of Physician Assistant Studies (MPAS) (Accelerated)
The MCPHS Physician Assistant (PA) Studies Program is dedicated to the education of clinically competent medical professionals who are prepared to deliver quality patient care in a dynamic healthcare delivery system. The program is accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) and graduates are eligible to sit for the Physician Assistant National Certifying Examination (PANCE) required for licensure or registration.

This program capitalizes on the extensive educational resources of the University and the supervised clinical practice experiences (SCPE) or clinical rotations in the North East and Mid-Atlantic regions to prepare physician assistants with the skills, competencies, and attitudes to provide compassionate, high quality, and comprehensive care to patients of all ages in a variety of clinical settings. The emphasis is on community-oriented primary care, and students acquire experience in the evaluation and treatment of a broad spectrum of medical problems though the program's clinical rotations. These experiential elements of the program provide training in emergency medicine, family medicine, internal medicine, pediatrics, psychiatry, surgery, and women's health in addition to an elective specialty.

Students applying to the program must submit a formal application and designate whether they are applying to the Manchester or Worcester campus. Students cannot apply to both campuses. The application must include official transcripts and an essay through the Central Application Service for Physician Assistants (CASPA) and must be received by March 1. CASPA, the centralized national application service of the Association of the Physician Assistant Programs, may be contacted at www.caspaonline.org.

About the Program
In 2002, MCPHS acquired the Notre Dame College (New Hampshire) PA program that had been first accredited in 1998 and enrolled its first class in 1999. MCPHS-Manchester graduated its first class of Master of Physician Assistant Studies (MPAS) students in December 2002. While based on the Manchester campus, the program has a satellite on the MCPHS–Worcester campus with an identical curriculum—both delivered with faculty on each campus via use of synchronized distance education. For both campuses, the first year is dedicated to didactic and laboratory learning and the second to supervised clinical practice experiences (SCPE) or clinical rotations in a variety of patient-care settings. Students attend classes at their respective campus, with didactic courses simultaneously delivered at both campuses using technologically sophisticated interactive videoconferencing. This technology allows students at each site to interact with other students and faculty members in real time. Laboratory courses and small-group activities are facilitated by Physician Assistant Studies faculty located on each campus.

Technical Standards for the Master of Physician Assistant Studies

Observation
Candidates and students must have sufficient capacity to observe in the lecture hall, laboratory, and diagnostic and treatment areas of outpatient and inpatient settings. Sensory skills to perform the procedures of the healthcare profession in which students are enrolled are required. In any case where a candidate's or a student's ability to observe or acquire information through sensory modalities is compromised, the candidate or student must demonstrate alternative means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion.

Communication
Candidates and students must be able to communicate effectively in both academic and healthcare settings. Candidates and students must show evidence of effective written and oral communication skills, and must be able to communicate with patients in order to elicit and impart information.

Motor Skills
The ability to participate in basic diagnostic and therapeutic maneuvers and procedures is required. Candidates and students must have sufficient motor function to execute movements reasonably required to properly care for all patients, and must be able to perform motor functions with or without assistive devices.

Intellectual Abilities
Candidates and students must be able to measure, calculate, reason, analyze, and synthesize. Problem solving, one of the critical skills demanded of healthcare professionals, requires all of these intellectual abilities. Candidates and students must be able to read and understand medical literature. In order to complete the specific Health Sciences program, students must be able to demonstrate mastery of these skills and the ability to use them together in a timely fashion in healthcare problem solving and patient care.

Behavioral and Social Attributes
Candidates and students must possess the emotional health and stability required for full utilization of their intellectual abilities, the exercise of good judgment, and the prompt completion of all academic and patient care responsibilities. The development of mature, sensitive, and effective relationships with patients and other members of the healthcare team is essential. The ability to function in the face of uncertainties inherent in clinical practice, flexibility, compassion, integrity, motivation, interpersonal skills, and concern for others are all required.

Prerequisite COURSE	CREDIT HOURS
Anatomy and Physiology (with labs)	8
General Chemistry (with lab)	4
Organic Chemistry (with lab)	4
Biochemistry (with lab)	3
Microbiology (with lab)	4
Statistics	3
Introduction to Psychology	3
Recommended only: Immunology	3
Recommended only: Genetics	4

Prerequisite Policy
Seven prerequisites (as indicated in the previous section) must have been completed at an accredited college or university no more than 10 years prior to the anticipated date of matriculation to MCPHS. For example, for matriculation into the class starting in January 2012, the seven courses must have been completed since January 2002. All prerequisite coursework must have been completed with a final grade of C or better. The number of times a course has been taken to achieve a passing grade will be considered. Prerequisite coursework taken at a four-year institution is preferred.

If prerequisite coursework was completed more than 10 years prior, the candidate should submit a letter of request to the PA Program Admission Committee in care of the campus Admission Office. The formal letter must include when and where the course was taken, the grade received in the course, and the rationale for requesting the exception. A current résumé and copies of transcripts supporting the applicant's argument must be included.

While previous healthcare experience is not required, the majority of applicants have obtained a year or more of direct patient care experience. In addition, job shadowing of a practicing physician assistant for a minimum of 50 hours is strongly recommended. PA shadowing information should be included on the CASPA application under Related Healthcare Experience.

This program is available only to applicants who have already earned a bachelor's degree from an accredited institution in any field, and who have fulfilled the prerequisite course requirements.

Prerequisites include the following:

- An earned bachelor's degree from an accredited college or university with an overall cumulative grade point average (GPA) of 3.0 on a 4.0 scale;
- Recommend 250-500 hours of patient care experience;
- Recommend Physician Assistant shadowing experience, leadership experience, research experience, volunteer experience;
- A minimum TOEFL (Test of English as a Foreign Language) score for all candidates for whom English is not the primary language (see International Applicants in the Admission section for details);
- Ability to fulfill the technical standards for admission, promotion, and graduation;
- Other requirements for international students as outlined in the Admission section

School of Physician Assistant Studies Policies and Professional Requirements (Manchester/Worcester)
Students who are enrolled in the program must earn grades of C (2.0) or better in all didactic and clinical year courses and maintain an overall grade point average (GPA) of 3.0 to remain in good academic standing in the program. Students are expected to understand and adhere to the codes and standards of the profession and to exhibit professional behavior.

Students who receive below a C in a didactic course will be required to repeat the course before progressing to the next semester. This will result in a delay of one year to complete the program. Such repetitions will lengthen the program beyond two years and delay graduation (please see Program Completion Policy). Failure to achieve a cumulative 3.0 GPA at the end of the first semester of the didactic year results in being placed on probation. If the student does not demonstrate improvement by the end of the second semester of the didactic year, the student may be dismissed from the program. If the student does not achieve a cumulative GPA of 3.0 by the end of the didactic year, the student will be dismissed from the program.

Students are required to be in good academic standing to enter the clinical year. Students must receive a 3.0 cumulative GPA in order to enter the clinical year. Students who receive a grade below a "C" in a supervised clinical practice experience course (SCPE) will be required to repeat the SCPE at the end of the clinical year. Such repetitions will lengthen the program beyond two years and delay graduation (please see Program Completion Policy). If a student receives a grade below a "C" in a repeated SCPE OR in more than one SCPE course this may result in being dismissed from the program. It is expected that students on academic probation make progress toward good academic standing. Failure to demonstrate progress toward good academic standing may result in dismissal from the PA Program. At the conclusion of the second consecutive SCPE, the student must have achieved good academic standing. Failure to do so may result in dismissal from the program.

Professional Responsibilities
Physician Assistants (PAs) are skilled members of the healthcare team qualified by academic and clinical experience to provide a broad range of healthcare services under the supervision of a licensed physician. The healthcare services that PAs provide include performing appropriate medical interviews and physical examinations, identifying healthcare problems in need of evaluation and management, screening results of laboratory diagnostic studies, implementing treatment plans, counseling patients regarding illness and health-risk behaviors, monitoring responses to physician-directed programs of therapy, and facilitating access to appropriate healthcare resources. These services may be provided to individuals of any age in those various settings considered part of the physician's practice.

Professional Credentials
Over the past 30 years, several milestones within the profession have become markers by which the appropriately trained physician assistant is identified. These markers include graduation from an academic program accredited by the Accreditation Review Commission on Education for the Physician Assistant, certification through examination by the National Commission on Certification of Physician Assistants (NCCPA), and registration or licensure by state boards of medical examiners. Continued professional competence is evidenced by the completion of 100 hours of continuing medical education every two years and successful passage of a recertification examination as required by NCCPA.

Program Completion Policy
Candidates for the Master of Physician Assistant Studies (Accelerated MPAS) Program Manchester/Worcester must

have completed all program requirements (didactic and clinical) within 39 months from the date of matriculation into the accelerated MPAS program. If there is failure to complete all program requirements within the allotted timeframe, the student is subject to dismissal from the program.

Course Requirements
The undergraduate educational requirements for admission to the MPAS program in Manchester/Worcester are listed in the Admission section of this catalog. Following are the course requirements for the PA program in Manchester/Worcester.

Curriculum: Physician Assistant Studies

Year I — spring

COURSE	TITLE	CREDIT HOURS
MPA 527	Health Systems Science I	1
MPA 530	Clinical Medicine I	6
MPA 538	Patient Assessment I	4
MPA 541	Pharmacology I	2
MPA 544	Clinical Anatomy	3
MPA 546	Physiology/Pathophysiology I	2
TOTAL		18

Year I — summer

COURSE	TITLE	CREDIT HOURS
MPA 528	Health Systems Science II	3
MPA 531	Clinical Medicine II	6
MPA 539	Patient Assessment II	3
MPA 542	Pharmacology II	3
MPA 547	Physiology/Pathophysiology II	3
TOTAL		18

Year I — fall

COURSE	TITLE	CREDIT HOURS
MPA 532	Clinical Medicine III	5
MPA 543	Pharmacology III	2
MPA 550	Emergency Medicine	2
MPA 552	Medical Procedures and Surgery	2
MPA 554	Special Populations	4
MPA 540	Patient Assessment III	3
TOTAL		18

Year II — spring

COURSE	TITLE	CREDIT HOURS
MPAC	Clinical Rotations (3 rotations)	15
MPA 620	Professional Development I	2
TOTAL		17

COURSE	TITLE	CREDIT HOURS
MPAC	Clinical Rotations (3 rotations)	15
MPA 621	Professional Development II	2
TOTAL		17

Year II — fall

COURSE	TITLE	CREDIT HOURS
MPAC	Clinical Rotations (3 rotations)	15
MPA 622	Professional Development III	2
TOTAL		17

Total credits to complete degree requirements: 105 credit hours

The breakdown of the Professional Year II SCPEs or clinical rotations includes rotations in the following areas:

MPAC 600	Medicine I	5 weeks	5 credit hours
MPAC 601	Medicine Elective	5 weeks	5 credit hours
MPAC 602	Family Medicine	5 weeks	5 credit hours
MPAC 603	Pediatrics	5 weeks	5 credit hours
MPAC 604	Psychiatry	5 weeks	5 credit hours
MPAC 605	Surgery	5 weeks	5 credit hours
MPAC 606	Women's Health	5 weeks	5 credit hours
MPAC 607	Emergency Medicine	5 weeks	5 credit hours
MPAC 609	General Elective Rotation	5 weeks	5 credit hours
MPAC 609T	General Elective (international) Rotation	5 weeks	5 credit hours

Supervised Clinical Practice Experiences (SCPE) or Clinical Rotations
Clinical rotations are integral to the Physician Assistant Studies program at MCPHS–Manchester and Worcester. It is during this phase of training that students apply and improve their clinical and patient management skills. There are 9 required clinical rotations. Each rotation is 5 weeks in duration. In addition to clinical rotations, students participate in on-campus professional seminars during the clinical phase of training.

The program has clinical affiliations with a variety of clinical sites in the North East and Mid-Atlantic regions. Additional national and international clinical sites are also available. Learning experiences occur in ambulatory and hospital-based settings and include rural, suburban and urban clinical sites. Students are encouraged to choose rural health facilities for a portion of their clinical experience. The breadth of clinical settings offers the future Physician Assistant the ability to acquire skills and competencies to practice in a variety of settings.

Rotations in the required curriculum may be scheduled at some distance from the campus. This is necessary to provide a range of diverse learning experiences and ensure availability and quality of clinical rotation sites. Students are responsible for providing their own housing and transportation to and from the clinical sites and campus. Housing and travel costs for the clinical year vary widely depending on the site and location. Physician Assistant students are not responsible for identifying or arranging their own clinical sites. However, the possibility exists for students to coordinate with the program out-of-network clinical sites. To ensure quality educational training the sites must be approved by the Physician Assistant Studies Program and University and proper protocol must be followed to arrange for out- of-network clinical rotations.

The School of Physician Assistant Studies reserves the right to make changes to all policies and procedures at any time.

MCPHS–Manchester
School of Pharmacy–Worcester/Manchester

Paul Belliveau, PharmD, Professor and Dean

Abir Kanaan, PharmD, Professor and Associate Dean for Professional Education

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Kristine Willett, PharmD, Professor and Assistant Dean of Student Engagement & Success

Michael Steinberg, PharmD, Professor and Assistant Dean of Assessment

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Terrick Andey, PhD, Professor and Chair

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Degree and Certificate Programs

Doctor of Pharmacy (Accelerated)
Graduate Certificate in Medication Safety
Bachelor of Science in Pharmacy and Life Sciences

Doctor of Pharmacy/Master in Clinical Investigation and Development
Doctor of Pharmacy/Master in Regulatory Sciences
Doctor of Pharmacy/Master of Business Administration in Healthcare Technology
Doctor of Pharmacy/Master in Regulatory Affairs and Health Policy
Doctor of Pharmacy/Master in Clinical Research

Overview

MCPHS–Manchester offers programs in Pharmacy in conjunction with the School of Pharmacy-Worcester. For details on the School, programs, and curricula, refer to the School of Pharmacy–Worcester section of this catalog.

Doctor of Pharmacy (PharmD) (Accelerated)

The accelerated Doctor of Pharmacy (PharmD) degree is offered in conjunction with the School of Pharmacy–Worcester. This academically rigorous program is completed in two years and 10 months. Accepted applicants must have successfully completed all prerequisite courses prior to enrollment in the program.

The core pharmacy curriculum is identical to that currently offered at the Worcester campus. Students attend classes in Manchester, while most of the instructors and other students are based in Worcester. Sophisticated technology and interactive videoconferencing are utilized to deliver core and elective courses to the Manchester campus. Some electives, all labs, and some didactic courses are taught on site by Manchester-based faculty and qualified adjunct faculty, similar to those at the Worcester campus. Introductory and advanced clinical experiences are offered in a variety of approved settings (hospitals, clinics, community pharmacies, etc.) primarily in New England as well as outside the region, including other states and Canada, consistent with the assignments of students based in Worcester.

Bachelor of Science in Pharmacy and Life Sciences

Students in the Bachelor of Science in Pharmacy and Life Sciences program on the MCPHS-Boston campus who matriculate into the accelerated PharmD program in the School of Pharmacy-Worcester/Manchester complete the BS degree by successfully completing additional courses as part of the SOP-W/M PharmD professional curriculum.

Students choosing this option must successfully complete all pre-professional bachelor's degree-related courses (66 credits) on the MCPHS-Boston campus and must satisfy all SOP-W/M admission requirements for admission to the accelerated Doctor of Pharmacy program. In addition to GPA and course completion and passing requirements, the SOP-W/M and the Accreditation Council for Pharmacy Education require all pre-professional students to successfully complete an admission interview process to be admitted into the professional phase of the Doctor of Pharmacy program. Students enrolled in this program must have C- in all professional courses in the accelerated PharmD program and an overall GPA of 2.2 at the end of professional years I and II.

(Note that students completing the Bachelor of Science degree are not eligible for pharmacist licensure; all requirements for the Doctor of Pharmacy degree must be completed to be eligible to take the pharmacist licensure exams. Similarly, completing the Bachelor of Science degree does not qualify the graduate for entrance into the Non-Traditional Doctor of Pharmacy Pathway.)

School of Professional Studies

Carol Lauer, MBA, Dean and Executive Director of Strategic Partnerships

Amber Palmer, MEd, Assistant Dean

Erin Beloin, MBA, CNMT, RT(CT), Director of Program Management

Degree and Certificate Programs

Bachelor of Science in Life Sciences*
Graduate Certificate in Clinical Management*
Graduate Certificate in Healthcare Management*
Graduate Certificate in Precision Medicine*
Undergraduate Certificate in Biopharmaceutical Industry Fundamentals*
Undergraduate Certificate in Introductory Life Sciences*
Undergraduate Certificate in Pre-Dental Science

*Online Programs

Overview

Approved by the Board of Trustees in October 2018, the School of Professional Studies was created to serve working professionals and adult learners. The mission of the School is to provide multiple pathways for current and aspiring healthcare professionals to earn credentials to begin or advance healthcare careers, to build skills, knowledge, and expertise, and to enrich their career opportunities. Credit-bearing and noncredit programs will be offered on the MCPHS campuses, online, and through hybrid delivery formats with an emphasis on creating convenient and accessible opportunities for students to meet their career goals.

The long-range plan for the School includes developing prerequisite courses for students who seek to enter professional healthcare programs, building certificate programs and other micro-credentials that target skill development, professional growth, and enhanced career opportunities, and creating executive and professional education in the form of non-credit workshops and/or continuing education courses. The cultivation of corporate and organizational partnerships with area healthcare organizations is central to the mission of the School.

Bachelor of Science in Life Sciences

The Bachelor of Science in Life Sciences program equips students with the essential knowledge and skills to begin a career in the biopharmaceutical sector. With a strong curriculum grounded in life sciences, laboratory and data analysis methods, students gain the knowledge and skills necessary to thrive in research, development, and manufacturing roles. The program incorporates two industry-aligned undergraduate certificates, a series of seminars, and an option of three concentration tracks that offer practical training focused on meeting industry-relevant demands.

This 120-credit curriculum is ideal for individuals seeking entry-level positions in biotech and pharmaceutical companies, as well as those currently in entry-level roles looking to advance their careers. Designed to be completed on a part-time basis, with classes scheduled remotely during evenings and weekends, the program offers flexibility for working professionals and students balancing multiple responsibilities.

Upon completion of this program, graduates will be able to:

- Demonstrate proficiency in essential laboratory and data analysis methods used in the biopharmaceutical industry.
- Gain a comprehensive understanding of the stages of therapeutic development.
- Develop critical thinking and problem-solving skills to address challenges in the industry.
- Apply core biological and chemical principles to real-world industry applications.
- Communicate scientific information effectively to diverse audiences.
- Specialize in a chosen area of the biopharmaceutical industry, such as experimental analysis, program management, or operations management.

- Prepare to meaningfully contribute to the biopharmaceutical sector by applying in-demand industry-relevant skills upon graduation.

Admission Requirements

- High school diploma or equivalent

Curriculum: Bachelor of Science in Life Sciences (Online)

COURSE	TITLE	CREDIT HOURS
BLS 105	Biopharmaceutical Industry Essentials & Career Readiness	3
BLS 110	Professional Communication for Life Sciences	3
BLS 115	Essential Math & Statistics for Research	3
BIO 151	Biology I – Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
BLS 120	Data Analysis I with Lab	4
BLS XXX	Human Disease Mechanisms & Translation	3
CHE 132	Chemical Principles II with Lab	4
BLS XXX	Advanced Molecular & Cellular Biology	3
BLS XXX	Genetics	3
CHE 231	Organic Chemistry I with Lab	4
BLS XXX	Biopharmaceutical Research	3
BLS XXX	Data Analysis II with Lab	4
MAT 141	Algebra & Trigonometry	3
MAT 261	Statistics	3
LIB 111	Academic Writing & Research	3
BLS XXX	Professional Communication for Life Sciences II	3
BLS XXX	Career Readiness	3
LIB 120	Introduction to Psychology	3
BLS XXX	Ethics in Life Sciences	3
LIB 133	Introduction to the Social Sciences	3
LIB 112	Writing in the Humanities	3
BLS XXX	Leadership & Team Dynamics in Life Sciences	3
BLS XXX	Seminar: Advanced Molecular & Cellular Biology	1
BLS XXX	Seminar: Human Disease Mechanisms & Translation	1
BLS XXX	Seminar: Genetics	1
BLS XXX	Seminar: Biopharmaceutical Research	1
	Social Science Elective	3
	Humanities Elective	3
	Behavioral Sciences Elective	3
	General Electives	18
TOTAL		104

Students in this program also choose one concentration from the following:

Concentration: Experimental Analysis

COURSE	TITLE	CREDIT HOURS
BLS XXX	Advanced Molecular Biology Techniques	4
BLS XXX	Biochemistry & Biophysics for Discovery	4
BLS XXX	Immunology for Therapeutics	4
BLS XXX	Clinical Strategies, Biomarkers, & Diagnostics	4
TOTAL		16

Concentration: Project Management

COURSE	TITLE	CREDIT HOURS
BLS XXX	Principles of Project Management	4
BLS XXX	Organizational Behavior in Business	4
BLS XXX	Biopharmaceutical Strategy & Operations	4
BLS XXX	Clinical Strategies, Biomarkers, & Diagnostics	4
TOTAL		16

Concentration: Operational Management

COURSE	TITLE	CREDIT HOURS
BLS XXX	Biomanufacturing Processes	4
BLS XXX	Supply Chain Management & Sustainability	4
BLS XXX	Facilities & Equipment Management	4
BLS XXX	Organizational Behavior in Business	4
TOTAL		16

Total credits to complete BS degree requirements: 120 credit hours

Graduate Certificate in Clinical Management

The Graduate Certificate in Clinical Management is open to applicants who desire graduate-level study without the commitment of a master's degree program. The certificate is designed for healthcare professionals, including physicians, pharmacists, and nurses who are interested in improving their knowledge of clinical management. The certificate enhances interdisciplinary approaches and complements degrees in pharmacy, business administration, nursing, marketing, and management.

The graduate certificate requires four courses (12 credits) and may be completed in two semesters. All of the courses are offered online; students should be prepared for the rigor and challenges of the online learning environment. Upon completion of the certificate, students may elect to count the coursework towards the completion of the Master of Science in Clinical Management. Please note this program is not aid eligible.

Admission Requirements

- Applicants are encouraged to apply before the application due date for full consideration. Applications are reviewed on a rolling basis until the program capacity has been reached.
- Bachelor's degree required;
- Undergraduate GPA of 3.0;
- Management experience in healthcare or closely aligned field preferred;
- Transfer credits are not accepted for this certificate program.
- Graduates of the program will be able to:
    - Apply practical approaches to population-level health challenges, including advocating for patient-centered care and managing in the complex healthcare environment;
    - Demonstrate ethical decision-making that is informed by data analysis, critical thinking, and evidence-based approaches;
    - Apply analytical skills in evaluation and dissemination of evidence in response to core challenges in the delivery of healthcare including value, revenue, and health outcomes;
    - Provide leadership and guidance for the delivery of care that meets the needs of patients, providers, and the communities served.

Curriculum: Graduate Certificate in Clinical Management (Online)

Students select 4 courses (12 credits)

COURSE	TITLE	CREDIT HOURS
HCM 734	Value-based Healthcare	3
HCM 752	Quality Improvement in Healthcare	3
HCM 763	Leading Through Crisis and Change	3
HCM 821	Clinical Informatics and Data Analysis	3

HCM 825	Managing and Delivering Engaged Care	3
HCM 842	Practice Management and Leadership	3
TOTAL		12

Graduate Certificate in Healthcare Management

The Graduate Certificate in Healthcare Management is open to applicants who desire graduate-level study of healthcare management concepts without the commitment of a master's degree program. The Graduate Certificate in Healthcare Management is available to all healthcare professionals, including physicians, pharmacists, and nurses who are interested in improving their knowledge of healthcare management. The certificate enhances interdisciplinary approaches and complements degrees in pharmacy, business administration, nursing, marketing, and management.

The graduate certificate requires four courses (12 credits) and may be completed in one year. All of the courses are offered online; students should be prepared for the rigor and challenges of the online learning environment. Upon completion of the certificate, students may elect to count the coursework towards the completion of the MBA.

Curriculum: Graduate Certificate in Healthcare Management (Online)

Students choose four courses (12 credits) (substitutions may be allowed by the program director):

COURSE	TITLE	CREDIT HOURS
HCM 720	Organizational Dynamics	3
HCM 730	Operations and Supply Chain Management	3
HCM 740	Managing Teams, Performance, and Human Capital	3
HCM 820	Applied Data Analysis and Decision Making	3
HCM 718	Leadership in Healthcare Administration	3
HCM 763	Leading Through Crisis and Change	3
TOTAL		12

Graduate Certificate in Precision Medicine

Precision Medicine is driving a new era in healthcare that involves individualizing treatments based on a person's genes, environment, and lifestyle. This graduate-level certificate program is designed specifically for healthcare professionals.

This online certificate program includes a strong emphasis in genomics, including the genetic underpinnings of disease and treatment response, as well as the latest clinical applications of genomic medicine. Courses are taught by nationally recognized experts in genomics and precision medicine from MCPHS and Harvard Medical School's online unit, HMX. This online certificate may be completed in two semesters.

Admission Requirements*

- Bachelor's degree required
- Transfer credits are not accepted

*School of Pharmacy students interested in pursuing this certificate should reach out to their department to learn more about the application process.

Curriculum: Graduate Certificate in Precision Medicine (Online)

Required:

COURSE	TITLE	CREDIT HOURS
MSC 601E	Principles of Genetics and Genomics	3
MSC 602E	Clinical Pharmacogenomics	2
MSC 603E	Ethical, Legal, and Social Implications of Precision Medicine	2
One additional course from the following:		
MSC 604E	Genomic Biomarkers in Cancer Care	2

MSC 605E	Gene Therapy (HMX)	2
MSC 607E	Digital Health: Foundations, Innovations, and Applications	2
TOTAL		9

Undergraduate Certificate in Biopharmaceutical Industry Fundamentals

This program is tailored to equip students with the essential knowledge and skills vital for success in the life sciences sector. It offers foundational training in science and data analysis, paving the way for students to confidently enter the industry. This certificate is ideal for individuals seeking entry-level positions in biotech and pharmaceutical companies, as well as those currently in entry-level roles looking to advance their careers.

The undergraduate certificate requires three courses (9 credits) and can be completed in two semesters. The program offers flexibility for part-time students and working professionals, as all courses are offered in the evenings and online.

Admission Requirements

- High school diploma or equivalent
- Transfer credits are not accepted

Curriculum: Undergraduate Certificate in Biopharmaceutical Industry Fundamentals (Online)

COURSE	TITLE	CREDIT HOURS
BLS 105	Biopharmaceutical Industry Essentials & Career Readiness	3
BLS 110	Professional Communication for Life Sciences	3
BLS 115	Essential Math & Statistics for Research	3
TOTAL		9

Undergraduate Certificate in Introductory Life Sciences

This program aims to prepare students with the foundational knowledge and skills integral to building a successful career in the biotech and pharmaceutical industries. This program equips students with science and data analysis skills essential to succeed in diverse industry settings. Students gain a solid understanding of fundamental scientific concepts while sharpening their critical thinking and problem-solving abilities. This certificate is ideal for individuals seeking entry-level positions in biotech and pharmaceutical companies, as well as those currently in entry-level roles looking to advance their careers.

The undergraduate certificate requires three courses (10 credits) and can be completed in two semesters. The program offers flexibility for part-time students and working professionals, as all courses are offered in the evenings and online.

Admission Requirements

- High school diploma or equivalent
- Transfer credits are not accepted

Curriculum: Undergraduate Certificate in Introductory Life Sciences (Online)

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I – Cell and Molecular Biology	3
CHE 131	Chemical Principles I	3
BLS 120	Data Analysis I with Lab	4
TOTAL		10

Undergraduate Certificate in Pre-Dental Science

This program is designed for dental hygienists who have a bachelor of science in dental hygiene (BSDH) and are aiming to apply for advanced education in dentistry— whether a DDS, DMD, or graduate level specialization in dental hygiene. This certificate provides a clear pathway for our students, Forsyth School of Dental Hygiene alumni, and practicing dental hygienists.

The curriculum includes up to 42 credit hours of prerequisite courses required for admission into dental school. Students must complete a minimum of 16 credits to obtain the certificate which allows flexibility for students who have completed some of the required coursework elsewhere. All courses are offered on the Boston campus.

Admission Requirements

- Bachelor of Science in Dental Hygiene (BSDH)
- Transfer credits are not accepted

Curriculum: Undergraduate Certificate in Pre-Dental Science

Students choose a minimum of 16 credits:

COURSE	TITLE	CREDIT HOURS
BIO 151	Biology I	3
BIO 150L	Biology I Laboratory	1
BIO 152	Biology II	3
BIO 152L	Biology II Laboratory	1
BIO 360	Cellular Biochemistry	3
CHE 131	Chemical Principles I	3
CHE 131L	Chemical Principles I Laboratory	1
CHE 132	Chemical Principles II	3
CHE 132L	Chemical Principles II Laboratory	1
CHE 231	Organic Chemistry I	3
CHE 231L	Organic Chemistry I Laboratory	1
CHE 232	Organic Chemistry II	3
CHE 234L	Organic Chemistry II Laboratory	1
MAT 151	Calculus I	3
MAT 152	Calculus II	3
PHY 280	Physics I	3
PHY 280L	Physics I Laboratory	1
PHY 284	Physics II	3
PHY 284L	Physics II Laboratory	1

COURSE DESCRIPTIONS

Course Descriptions

NOTE: Some course changes are approved following catalog printing. Consult www.mcphs.edu for updated information. Descriptions of courses being developed for future years will be available in future catalogs and on the website.

Please refer to Grading System under Academic Policies and Procedures for course key information.

Acupuncture Assessment (ACA)

ACA.501
First Year Comprehensive Exam
0.00 credit hours. Lecture.

Acupuncture—Biomedical (ACB)

ACB.511
Integrative Anatomy Lab I
This course examines musculoskeletal anatomy of the head, neck and upper extremities from both biomedical and acupuncture channel perspectives, emphasizing key structures like muscles, ligaments, and nerves in relation to acupuncture points. Students will enhance palpation skills, recognize common pathologies, and develop manual therapy techniques, fostering a comprehensive, integrative approach to anatomy that supports a safe and effective acupuncture practice.
1.00 credit hours. Lecture. ACT.501, ACT.511 (Required, Previous or Concurrent).

ACB.512
Integrative Anatomy Lab II
This course examines musculoskeletal anatomy of the back and lower extremities from both biomedical and acupuncture channel perspectives, emphasizing key structures like muscles, ligaments, and nerves in relation to acupuncture points. Students will enhance palpation skills, recognize common pathologies, and develop manual therapy techniques, fostering a comprehensive, integrative approach to anatomy that supports a safe and effective acupuncture practice.
1.00 credit hours. Lecture. ACB.511 (Required, Previous); ACT.502, ACT.512 (Required, Concurrent).

ACB.513
Integrative Pain Management Theory
This course explores the biopsychosocial model of pain and advances in pain neuroscience, focusing on building therapeutic alliances for effective pain management. Students learn strategies for addressing opioid use disorder through collaborative, culturally humble, and patient-centered care. Evidence-informed approaches are integrated to enhance patient understanding and support holistic management of chronic pain through empathy and trust-building.
2.00 credit hours. Lecture. BIO.110E, BIO.210E (Required, Previous).

ACB.514
Patient Assessment
This course trains students in the history-taking and physical examination process. Students will create a safe, patient-centered environment, conduct and document comprehensive health assessments, and analyze clinical findings. Emphasis is placed on effective communication, multicultural sensitivity, and accurate use of medical terminology to ensure clear documentation and culturally competent, high-quality patient care.
2.00 credit hours. Lecture. ACB.601, ACB.602, ACB.603 (Required, Previous).

ACB.601
Biomedical Treatment of Disease I
This three-course series provides a biomedical overview of common disorders across major body systems. Students analyze disease mechanisms, pharmaceutical classifications, and diagnostic tests while emphasizing clinical impressions, emergency recognition, and effective communication. The courses foster culturally competent care and equips students with the skills to understand lab results and collaborate effectively within diverse healthcare settings.
3.00 credit hours. Lecture. BIO.110E, BIO.210E (Required, Previous).

ACB.602
Biomedical Treatment of Disease II
This three-course series provides a biomedical overview of common disorders across major body systems. Students analyze disease mechanisms, pharmaceutical classifications, and diagnostic tests while emphasizing clinical impressions, emergency recognition, and effective communication. The courses foster culturally competent care and equips students with the skills to understand lab results and collaborate effectively within diverse healthcare settings.
3.00 credit hours. Lecture. BIO.110E, BIO.210E (Required, Previous).

ACB.603
Biomedical Treatment of Disease III
This three-course series provides a biomedical overview of common disorders across major body systems. Students analyze disease mechanisms, pharmaceutical classifications, and diagnostic tests while emphasizing clinical impressions, emergency recognition, and effective communication. The courses foster culturally competent care and equips students with the skills to understand lab results and collaborate effectively within diverse healthcare settings.
3.00 credit hours. Lecture. BIO.110E, BIO.210E (Required, Previous).

ACB.611
Acupuncture Integrative Pain Management I
This comprehensive course series integrates biomedical and Traditional East Asian Medicine (TEAM) approaches to pain management. Students learn to conduct neuromuscular and functional examinations while incorporating TEAM diagnostic frameworks. Evidence-informed acupuncture techniques, including trigger point and innervation zone methods are emphasized. Focusing on collaboration, cultural humility, and patient safety, this series prepares practitioners to deliver effective care in multidisciplinary settings.
2.00 credit hours. Lecture. ACB.511, ACB.512, ACB.513, ACT.503, ACT.513 (Required, Previous).

ACB.612
Acupuncture Integrative Pain Management II
This comprehensive course series integrates biomedical and Traditional East Asian Medicine (TEAM) approaches to pain management. Students learn to conduct neuromuscular and functional examinations while incorporating TEAM diagnostic frameworks. Evidence-informed acupuncture techniques, including trigger point and innervation zone methods are emphasized. Focusing on collaboration, cultural humility, and patient safety, this series prepares practitioners to deliver effective care in multidisciplinary settings.
2.00 credit hours. Lecture. ACB.611 (Required, Previous).

ACB.613
Acupuncture Integrative Pain Management III
This comprehensive course series integrates biomedical and Traditional East Asian Medicine (TEAM) approaches to pain management. Students learn to conduct neuromuscular and functional examinations while incorporating TEAM diagnostic frameworks. Evidence-informed acupuncture techniques, including trigger point and innervation zone methods are emphasized. Focusing on collaboration, cultural humility, and patient safety, this series prepares practitioners to deliver effective care in multidisciplinary settings.
2.00 credit hours. Lecture. ACB.612 (Required, Previous).

ACB.701
Mechanisms of Acupuncture
This course explores evidence-based biomedical mechanisms of acupuncture alongside traditional Chinese medicine perspectives. Students critically appraise research, synthesize theoretical frameworks, and formulate strategies to communicate acupuncture's mechanisms effectively. Emphasizing interdisciplinary collaboration, ethical practice, and patient-centered care, the course equips healthcare professionals to integrate acupuncture into holistic treatment plans while identifying opportunities for advancing understanding and practice in the field
2.00 credit hours. Lecture. ACP.601 (Required, Previous).

ACB.702
Chemistry for the Health Professions
This course provides master-level healthcare students with foundational knowledge in inorganic, organic, and biochemistry. Students will explore atomic structure, chemical bonding, organic functional groups, metabolic pathways, and biomolecule functions. Emphasis is placed on applying chemical principles to physiological processes, preparing students to understand the biochemical basis of health, disease, and clinical applications in healthcare.
3.00 credit hours. Lecture.

ACB.703
Biophysics of Acupuncture

This course explores the scientific principles underlying acupuncture's therapeutic effects, including bioelectricity, mechanotransduction, and neurohormonal pathways. Designed for healthcare professionals, this course bridges classical acupuncture concepts with modern biophysical insights, emphasizing evidence-based mechanisms, clinical applications, and interdisciplinary collaboration to deepen understanding and integration of acupuncture in patient care.
2.00 credit hours. Lecture. ACP.601 (Required, Previous).

ACB.712
Introduction to Public Health
This course introduces the principles and practices of public health, focusing on disease prevention, health promotion, and addressing health inequities. Students will explore determinants of health, morbidity and mortality trends, evidence-based strategies, and ecological health perspectives. Emphasis is placed on integrating public health knowledge into clinical practice, including communicable disease management, health education, and addressing emerging health threats.
3.00 credit hours. Lecture. BIO.210E (Required, Previous).

Acupuncture Clinic (ACC)

ACC.501
Introduction to Clinical Assistantship
In this introductory course, students observe and assist in NESA Treatment Centers, gaining foundational clinical skills such as pulse-taking, tongue inspection, and patient interaction. Through guided observation of diverse treatment styles, students develop their understanding of acupuncture practice while beginning to reflect on the professional and personal commitment required in acupuncture practice.
1.00 credit hours. Clinical. ACT.511 (Required, Previous or Concurrent).

ACC.502
Clinical Assistantship I
Students gain hands-on experience supporting licensed acupuncturists in clinical settings, including private practices, hospitals, and community health centers. Under supervision, they perform pulse-taking, tongue inspection, and non-needle adjunctive techniques while ensuring patient comfort. Through this experience, students build professional skills and gain insight into the dedication and rewards of maintaining an acupuncture practice.
1.50 credit hours. Lecture. ACC.501 (Required, Previous); ACT.512 (Required, Concurrent).

ACC.503
Clinical Assistantship II
This course allows students to observe licensed acupuncturists diagnosing and treating complex cases in various clinical settings. Students will assist in patient care and treatment space management while reflecting on clinical practices, integrating theoretical knowledge with practical experience. Emphasis is placed on professionalism, cultural humility, and ethical standards to foster a respectful, patient-centered environment
1.50 credit hours. Lecture. ACC.502 (Required, Previous); ACT.513 (Required, Concurrent).

ACC.601
Clinical Assistantship III
This course allows students to observe licensed acupuncturists diagnosing and treating complex cases in various clinical settings. Students will assist in patient care and treatment space management while reflecting on clinical practices, integrating theoretical knowledge with practical experience. Emphasis is placed on professionalism, cultural humility, and ethical standards to foster a respectful, patient-centered environment
1.50 credit hours. Lecture. ACC.503 (Required, Previous).

ACC.602
Clinical Assistantship IV
This course allows students to observe licensed acupuncturists diagnosing and treating complex cases in various clinical settings. Students will assist in patient care and treatment space management while reflecting on clinical practices, integrating theoretical knowledge with practical experience. Emphasis is placed on professionalism, cultural humility, and ethical standards to foster a respectful, patient-centered environment
1.00 credit hours. Lecture. ACC.601 (Required, Previous).

Acupuncture Foundations (ACF)

ACF.501
Cultural Foundations of Chinese Medicine
This course explores the rich history and philosophies foundational to Chinese medicine in this course. Students will analyze historical contexts, integrate philosophical concepts, and evaluate the cultural influences on health perceptions.

Through engaging discussions, they will assess health needs in diverse populations and enhance evidence-based practices, ultimately contributing to culturally competent patient care in contemporary healthcare settings.
2.00 credit hours. Lecture.

ACF.502
Chinese Medicine Theory I
This course explores foundational concepts of Chinese medical theory, including Yin-Yang, Five Elements, Qi, Blood, and Zang-Fu organs. Students will analyze physiological processes, diagnose patterns of disharmony, and develop individualized acupuncture strategies. Emphasis will be placed on clinical reasoning, effective patient communication, and cultural humility, ensuring sensitive and collaborative treatment planning in diverse healthcare settings.
3.00 credit hours. Lecture.

ACF.503
Chinese Medicine Theory II
This course further explores Chinese medical theory, emphasizing pattern differentiation using frameworks like Yin-Yang, Five Elements, and Zang-Fu. Students will learn to evaluate patient presentations, diagnose imbalances, and understand clinical reasoning behind acupuncture and herbal strategies. The course promotes clinical reasoning, effective patient communication, and cultural humility, ensuring comprehensive, sensitive care that addresses both root causes and individual patient needs.
3.00 credit hours. Lecture. ACF.502 (Required, Previous).

ACF.504
Chinese Medicine Diagnosis
This course prepares students to synthesize diagnostic skills by proficiently applying the Four Methods of Examination: observation, auscultation, inquiry, and palpation. Students will learn comprehensive interviewing techniques, pulse diagnosis, and palpation methods, integrating multiple diagnostic frameworks to formulate individualized, evidence-based treatment strategies. The course emphasizes enhancing patient communication, fostering cultural competence, and upholding ethical standards in diagnostic practice.
2.00 credit hours. Lecture. ACF.502, ACF.503 (Required, Previous).

ACF.601
Chinese Medicine Treatment of Disease I
This series of three courses provides a comprehensive exploration of disease treatment through Traditional Chinese Medicine. Students will integrate core concepts, diagnostic frameworks, and acupuncture techniques to address common medical conditions, while designing personalized, holistic treatment plans. Emphasis is placed on patient education, professional development, and adapting care to cultural beliefs for effective, evidence-based healthcare outcomes.
3.00 credit hours. Lecture. ACF.502, ACF.503, ACF.504 (Required, Previous).

ACF.602
Chinese Medicine Treatment of Disease II
This series of three courses provides a comprehensive exploration of disease treatment through Traditional Chinese Medicine. Students will integrate core concepts, diagnostic frameworks, and acupuncture techniques to address common medical conditions, while designing personalized, holistic treatment plans. Emphasis is placed on patient education, professional development, and adapting care to cultural beliefs for effective, evidence-based healthcare outcomes.
3.00 credit hours. Lecture. ACF.502, ACF.503, ACF.504 (Required, Previous).

ACF.603
Chinese Medicine Treatment of Disease III
This series of three courses provides a comprehensive exploration of disease treatment through Traditional Chinese Medicine. Students will integrate core concepts, diagnostic frameworks, and acupuncture techniques to address common medical conditions, while designing personalized, holistic treatment plans. Emphasis is placed on patient education, professional development, and adapting care to cultural beliefs for effective, evidence-based healthcare outcomes.
3.00 credit hours. Lecture. ACF.502, ACF.503, ACF.504 (Required, Previous).

ACF.701
Survey of Classical Texts
This course surveys major classical Chinese medical texts, analyzing their historical context and significance. Students will evaluate TCM theories, synthesize knowledge to develop treatment plans, critically assess case studies, apply

classical theories to modern conditions, interpret complex techniques, compare texts, formulate research questions, conduct scholarly research, and communicate findings effectively.
1.00 credit hours. Lecture. ACF.501, ACF.502, ACF.503, ACF.504 (Required, Previous).

ACF.702
Case Management
This course prepares students to develop and manage individualized acupuncture treatment plans, monitor long-term patient progress, and adjust treatments based on evaluations. Students will also learn to handle emergency situations, collaborate in specialty care, create medical-legal reports, and participate in expert testimony and independent medical reviews to support comprehensive patient care.
2.00 credit hours. Lecture. ACB.601, ACB.602, ACB.603, ACF.601, ACF.602, ACF.603 (Required, Previous).

Acupuncture—Herbal Medicine (ACH)

ACH.501
Introduction to Chinese Herbal Medicine
This course introduces students to the principles of Chinese herbal medicine, covering TCM theory, herbal classification, safety, and herbal preparation and administration. Students will learn to identify and apply herbs to treat various patterns, develop preparation skills, and gain foundational knowledge in ethical, legal, and cultural aspects, equipping them for safe, effective herbal practice in clinical settings.
2.00 credit hours. Lecture. ACF.501 (Required, Previous or Concurrent).

ACH.502
Chinese Herbal Materia Medica I
This course explores herb identification, therapeutic functions, and formulation. Students engage in critical analysis of herbs' properties, safety, and interactions while mastering the integration of herbal medicine with clinical practices to ensure safe, effective, and culturally competent patient care. This course covers herbs that release, clear heat, drain, dispel and transform.
4.00 credit hours. Lecture. ACH.501 (Required, Previous); ACF.503 (Required, Concurrent).

ACH.503
Chinese Herbal Materia Medica II
This course explores herbal identification, therapeutic functions, and formulation. Students engage in critical analysis of herbs' properties, safety, and interactions while mastering the integration of herbal medicine with clinical practices to ensure safe, effective, and culturally competent patient care. This course covers herbs that are aromatic, regulate warm and expel, tonify, stabilize, calm the spirit, open, extinguish and expel parasites.
4.00 credit hours. Lecture. ACH.502 (Required, Previous).

ACH.601
Chinese Herbal Formulas I
This series of three courses equips students to select and prescribe appropriate Chinese herbal formulas for diverse patient populations, focusing on formulating balanced prescriptions, assessing herb compatibility, and adjusting formulas based on patient needs. Emphasis is placed on safety, efficacy, and equity in clinical practice, along with professionalism and clear communication with patients and healthcare professionals.
3.00 credit hours. Lecture. ACH.502, ACH.503 (Required, Previous).

ACH.602
Chinese Herbal Formulas II
This series of three courses equips students to select and prescribe appropriate Chinese herbal formulas for diverse patient populations, focusing on formulating balanced prescriptions, assessing herb compatibility, and adjusting formulas based on patient needs. Emphasis is placed on safety, efficacy, and equity in clinical practice, along with professionalism and clear communication with patients and healthcare professionals.
3.00 credit hours. Lecture. ACH.502, ACH.503 (Required, Previous).

ACH.603
Chinese Herbal Formulas III
This series of three courses equips students to select and prescribe appropriate Chinese herbal formulas for diverse patient populations, focusing on formulating balanced prescriptions, assessing herb compatibility, and adjusting formulas based on patient needs. Emphasis is placed on safety, efficacy, and equity in clinical practice, along with professionalism and clear communication with patients and healthcare professionals.
3.00 credit hours. Lecture. ACH.502, ACH.503 (Required, Previous).

ACH.611

Chinese Herbal Medicine Dispensary Assistantship
This clinical assistantship immerses students in the daily operations of a Chinese herbal medicine dispensary. Under expert supervision, students gain hands-on experience in herb preparation, dispensing, regulatory compliance, inventory management, and patient communication. Emphasis is placed on applying best practices, ensuring patient safety, and understanding the operational workflows of a functional herbal dispensary.
0.50 credit hours. Lecture. ACH.502, ACH.503 (Required, Previous).

ACH.612
Chinese Herbal Patent Medicines
This course explores Chinese herbal patent medicines, focusing on prepackaged formulas manufactured by herbal companies. Students will learn to identify, assess, and integrate patent medicines into clinical practice, understanding their safety, efficacy, and legal considerations. Emphasizing contemporary research and ethical considerations, this course prepares students to responsibly use patent medicines in private practice.
2.00 credit hours. Lecture. ACH.601, ACH.602 (Required, Previous).

ACH.701
Chinese Herbal Medicine Treatment Of Disease I
This series of three courses provides an in-depth exploration of internal medicine conditions treated with Chinese herbal medicine. Students will learn to integrate foundational Chinese Medicine theories, diagnostic frameworks, and herbal formulas to address common and complex internal disorders. Emphasis is placed on designing safe, effective, and personalized treatment strategies, with a focus on holistic care and patient education.
3.00 credit hours. Lecture. ACH.601, ACH.602, ACH.603 (Required, Previous).

ACH.702
Chinese Herbal Medicine Treatment Of Disease II
This series of three courses provides an in-depth exploration of internal medicine conditions treated with Chinese herbal medicine. Students will learn to integrate foundational Chinese Medicine theories, diagnostic frameworks, and herbal formulas to address common and complex internal disorders. Emphasis is placed on designing safe, effective, and personalized treatment strategies, with a focus on holistic care and patient education.
3.00 credit hours. Lecture. ACH.601, ACH.602, ACH.603 (Required, Previous).

ACH.703
Chinese Herbal Medicine Treatment Of Disease III
This series of three courses provides an in-depth exploration of internal medicine conditions treated with Chinese herbal medicine. Students will learn to integrate foundational Chinese Medicine theories, diagnostic frameworks, and herbal formulas to address common and complex internal disorders. Emphasis is placed on designing safe, effective, and personalized treatment strategies, with a focus on holistic care and patient education.
3.00 credit hours. Lecture. ACH.601, ACH.602, ACH.603 (Required, Previous).

ACH.711
Chinese Herbal Medicine Formula Writing
This course trains students to write individualized Chinese herbal formulas, progressing from basic to complex prescriptions. Students learn to select formula families, modify dosages, and tailor treatments based on diagnosis, chronicity, and severity. Emphasis is placed on herb synergy, safety, and patient management, including assessment, education, and treatment evaluation, to ensure effective and professional clinical care.
2.00 credit hours. Lecture. ACH.601, ACH.602, ACH.603 (Required, Previous).

ACH.712
Chinese Herbal Medicine Classical Texts
This course explores classical Chinese herbal medicine through Shang Han Lun (On Cold Damage), Jin Gui Yao Lue (The Golden Chamber), and Wen Bing Xue (The Febrile Diseases). Students will analyze foundational theories, key formulas, and case studies, developing skills to integrate classical principles into modern clinical practice while deepening their understanding of traditional Chinese medical texts.
2.00 credit hours. Lecture. ACH.601, ACH.602, ACH.603 (Required, Previous).

Acupuncture—Professional Development (ACP)

ACP.501
Acupuncture Patient Centered Care
This course develops professional and interpersonal skills for patient- and community-centered care. Students learn reflective awareness, adaptive treatment, ethical best practices, and clear communication. Focus is on understanding factors impacting healthcare, fostering effective relationships, and developing leadership and advocacy skills to support positive health outcomes and patient safety in clinical settings.

1.00 credit hours. Lecture.

ACP.502
Professional Practice I
This course provides an in-depth exploration of acupuncture as a profession, emphasizing its historical development, regulatory landscape, and ethical practice. Students will analyze the role of acupuncture within U.S. healthcare, evaluate licensure and professional standards, and differentiate between primary and specialty care responsibilities. The course also focuses on professionalism, interprofessional collaboration, and integrating acupuncture into patient-centered, holistic care.
2.00 credit hours. Lecture.

ACP.503
Professional Practice II
This course equips acupuncture students with critical professional practice skills, emphasizing reliable healthcare information sourcing, accurate coding practices, and clear communication. Through research, evaluation, and the use of digital tools, students will learn to access, synthesize, and ethically utilize healthcare information, while mastering coding standards (CPT, E&M, ICD-10/11) to support clinical practice and interprofessional collaboration.
2.00 credit hours. Lecture.

ACP.601
Evidence-Informed Practice in Acupuncture
This course examines evidence-informed practice in acupuncture, focusing on the academic peer review process, research methodologies, and outcomes research. Students will evaluate ethical considerations, particularly regarding at-risk populations, and enhance clinical decision-making through current quantitative and qualitative research. Emphasis is placed on effective communication and collaboration with healthcare professionals to integrate acupuncture research into comprehensive patient care.
3.00 credit hours. Lecture. ACP.503 (Required, Previous).

ACP.602
Psychology and Clinical Counseling
This course equips acupuncture students with essential skills in patient communication, psychological assessment, and counseling techniques. Emphasizing empathy, cultural humility, and interprofessional collaboration, the course integrates mental health principles into holistic care, enabling students to address emotional well-being, support behavior changes, and navigate complex patient needs within their scope of practice.
2.00 credit hours. Lecture. ACP.501, ACB.601, ACF.601, ACP.601 (Required, Previous).

ACP.603
Patient Provider Relationship
This course develops advanced communication, cultural competency, and relational skills for acupuncture students. Emphasizing trust, empathy, and professional boundaries, the course prepares students to build therapeutic alliances, navigate complex conversations, and empower patients. Through holistic and integrative approaches, students enhance their capacity to foster meaningful, patient-centered care as healthcare providers.
2.00 credit hours. Lecture. ACP.602, ACT.603 (Required, Previous).

ACP.701
Practice Management I
This course prepares acupuncture students to build and manage successful practices. Topics include business planning, marketing strategies, office setup, billing systems, legal compliance, and risk management. Students will explore sustainable growth models, leadership development, and professional engagement, gaining skills to create efficient, patient-centered practices while adhering to ethical and legal standards.
2.00 credit hours. Lecture. ACP.603, ACP.503 (Required, Previous).

ACP.702
Practice Management II
This course equips acupuncture students with essential practice management skills, including accurate record-keeping, insurance billing, compliance with regulations, risk management, and quality assurance. Students will develop professional communication strategies, master front office procedures, and explore the value of professional organizations. Emphasis is placed on ethical practices, operational efficiency, and legal compliance to ensure successful practice management.
2.00 credit hours. Lecture. ACP.603, ACP.503 (Required, Previous)

ACP.703

NCCAOM Review I
This course prepares acupuncture graduates for the NCCAOM's Foundations of Oriental Medicine and Acupuncture with Point Location certification exams. Students will integrate core TCM theories, diagnostic skills and acupuncture treatment strategies, and develop exam strategies. The course covers differential diagnosis, treatment planning, safety standards, point location, and adjunctive therapies to ensure comprehensive preparation and confidence for successful exam performance.
1.00 credit hours. Lecture. ACF.601, ACF.602, ACF.603 (Required, Previous).

ACP.704
NCCAOM Review II
This course prepares acupuncture graduates for the NCCAOM Biomedicine certification exam by reviewing the biomedical sciences, including anatomy, physiology, pathology, pharmacology, and diagnostic procedures, with an emphasis on applying this knowledge in acupuncture practice. Key areas include medical red flags, patient safety, infection control, and interprofessional communication. Students will engage in case-based learning and practical assessments to ensure exam readiness.
1.00 credit hours. Lecture. ACB.601, ACB.602, ACB.603 (Required, Previous)

ACP.705
NCCAOM Review III
This course prepares acupuncture graduates for the NCCAOM Chinese Herbology certification exam. The course provides a comprehensive review of Chinese herbology, focusing on safety, quality control, herbal properties, formulas, preparation, and treatment planning. Emphasis is placed on applying knowledge to clinical scenarios, understanding patient management, and mastering exam preparation.
1.00 credit hours. Lecture. ACH.701, ACH.702, ACH.703 (Required, Previous).

ACP.711
Collaborative Care
This course prepares acupuncture professionals to excel in interprofessional healthcare teams by fostering mutual respect, effective communication, and role integration. Students will explore team dynamics, organizational culture, and collaborative care strategies, integrating acupuncture and biomedical models to create patient-centered care plans that are safe, equitable, and effective, while promoting professional engagement and leadership in healthcare.
3.00 credit hours. Lecture. ACF.601, ACF.602, ACB.601, ACB.602 (Required, Previous).

Acupuncture—Self-Care (ACS)

ACS.501
Self-Care I: Qi Gong
This course offers foundational Qi Gong training, emphasizing breathwork, movement, and the Five Element Qi Gong set. Students will deepen their understanding of TCM concepts, such as yin-yang, five-element theory, and meridians, while cultivating vitality, mental clarity, and emotional balance. This practice enhances personal and professional growth, enabling students to guide others in self-care and holistic wellness.
0.50 credit hours. Laboratory. ACT.501 (Required, Previous or Concurrent).

ACS.502
Self-Care II: Qi Gong
This course deepens students' Qi Gong practice through the Xing Yi Nei Gong set, focusing on San Ti Shi posture and 16 movement forms. Emphasizing alignment, internal energy flow, and TCM principles, students cultivate flexibility, stability, and awareness of Qi, Jing, and Shen. Advanced practice integrates dantian breathing, energy sensing, and the acupuncture channel system.
0.50 credit hours. Lecture. ACS.501 (Required, Previous); ACT.502 (Required, Concurrent).

ACS.503
Self-Care III: Qi Gong
In this course, students deepen their expertise in the Meridian Qigong form, directing energy with precision through acupoints and channels. Building on prior training, they develop skills to recommend personalized Qigong exercises, empowering patients in order to enhance wellness, promote self-care, and overall quality of life.
0.50 credit hours. Lecture. ACS.502 (Required, Previous); ACT.503 (Required, Concurrent).

ACS.601
Self-Care IV: Integrative Nutrition I
This course explores the principles of Western nutrition and Chinese medicine dietary therapy, emphasizing macronutrients, micronutrients, Five Flavors, and Five Elements. Students will learn to assess nutritional needs across

the lifespan and analyze cultural, ethical, and clinical aspects of nutrition, laying the groundwork for integrative dietary recommendations.
1.50 credit hours. Lecture. BIO.110E, BIO.210E, ACF.504 (Required, Previous).

ACS.602
Self-Care V: Integrative Nutrition II
Building on foundational knowledge from Integrative Nutrition I, this course focuses on synthesizing Western and Chinese medicine dietary theories. Students develop practical skills in patient assessment, dietary counseling, and supplement prescription. Emphasis is placed on applying integrative strategies for specific health conditions, evidence-based research, and clinical competence through case studies and simulations.
1.50 credit hours. Lecture. ACS.601 (Required, Previous).

Acupuncture Techniques (ACT)

ACT.501
Acupuncture Channels and Points I
This course examines and evaluates the Lung, Large Intestine, Stomach, and Spleen channels, including the primary acupuncture points along these channels. Students will evaluate the anatomical locations, functions, and clinical significance of each point, including extra points. Emphasis is placed on synthesizing clinical applications and optimizing point selection for treating common conditions.
2.00 credit hours. Lecture. ACB.511, ACT.511, ACS.501 (Required, Previous or Concurrent).

ACT.502
Acupuncture Channels and Points II
This course examines and evaluates the Heart, Small Intestine, Bladder, and Kidney channelss, including the primary acupuncture points along these channels. Students will evaluate the anatomical locations, functions, and clinical significance of each point, including extra points. Emphasis is placed on synthesizing clinical applications and optimizing point selection for treating common conditions.
2.00 credit hours. Lecture. ACB.512, ACT.512 (Required, Concurrent).

ACT.503
Acupuncture Channels and Points III
This course examines and evaluates the Pericardium, San Jiao, Liver, Gallbladder, Conception Vessel (CV), and Governing Vessel (GV) channels, including the primary acupuncture points along these channels. Students will evaluate the anatomical locations, functions, and clinical significance of each point, including extra points. Emphasis is placed on synthesizing clinical applications and optimizing point selection for treating common conditions.
2.00 credit hours. Lecture. ACS.503, ACT.513 (Required, Concurrent).

ACT.511
Acupuncture Techniques I
This course provides comprehensive training in needling and moxibustion therapies. Students will develop proficiency in various needling types, differentiate between tonifying and dispersing methods, and integrate moxibustion for enhanced outcomes. Emphasis is placed on diagnostic reasoning, patient-centered care, safety protocols, cultural competency, and professional communication, and effective documentation and collaboration in clinical practice.
2.00 credit hours. Lecture. ACT.501, ACB.511 (Required, Previous or Concurrent).

ACT.512
Acupuncture Techniques II
This course provides comprehensive training in additional needling techniques, cupping, electroacupuncture, therapeutic bloodletting, and gua sha. Students will develop proficiency in the safe application, while integrating these modalities with acupuncture and moxibustion. Emphasis is placed on diagnostic reasoning, patient-centered care, safety protocols, cultural competency, and professional communication, ensuring effective documentation and collaboration in clinical practice.
2.00 credit hours. Lecture. ACT.511 (Required, Previous); ACT.502, ACB.512 (Required, Concurrent).

ACT.513
Acupuncture Techniques III
This acupuncture techniques course offers training in auricular, scalp, laser acupuncture, microneedling, and handheld stimulation devices. Students will develop proficiency in safe applications, differentiate between treatment methods, and understand physiological effects. Emphasis is placed on diagnostic reasoning, patient-centered care, safety protocols, cultural competency, and effective documentation, ensuring optimal therapeutic outcomes for a range of conditions, including cosmetic goals.
2.00 credit hours. Lecture. ACT.512 (Required, Previous); ACT.503 (Required, Concurrent).

ACT.521
East Asian Medical Bodywork I
This course offers essential training in East Asian medical bodywork (Tui Na), focusing on foundational techniques, channel theory, and anatomical knowledge. Students will enhance their skills in touch assessment, treatment planning, and culturally competent care, while emphasizing safety and effective communication. Reflective practice and clinical evidence integration will promote holistic health and improve patient outcomes.
0.50 credit hours. Laboratory. ACB.511 (Required, Previous or Concurrent).

ACT.522
East Asian Medical Bodywork II
This course offers focused training in East Asian bodywork (Tui Na), covering foundational techniques, channel theory, and anatomy. Students develop assessment and therapeutic skills, plan treatments for specific conditions, and promote general wellness. Emphasis is placed on safety, effective communication, cultural competence, and reflective practice to enhance therapeutic decision-making and support holistic health.
0.50 credit hours. Lecture. ACT.521 (Required, Previous); ACB.512 (Required, Concurrent).

ACT.523
East Asian Medical Bodywork III
This course offers focused training in East Asian bodywork (Tui Na), covering foundational techniques, channel theory, and anatomy. Students develop assessment and therapeutic skills, plan treatments for specific conditions, and promote general wellness. Emphasis is placed on safety, effective communication, cultural competence, and reflective practice to enhance therapeutic decision-making and support holistic health.
0.50 credit hours. Lecture. ACT.522 (Required, Previous); ACT.503 (Required, Concurrent).

ACT.571
Japanese Acupuncture I
This course provides a comprehensive examination of Japanese acupuncture, highlighting its unique theories and clinical practices in contrast to Chinese acupuncture. Students will conduct comprehensive patient assessments, and will develop patient-centered treatment plans. Students will enhance therapeutic outcomes and foster ongoing professional growth by practicing cultural humility, adhering to ethical standards, and communicating effectively.
2.00 credit hours. Lecture. ACF.502, ACT.511 (Required, Previous).

ACT.601
Acupuncture Channel Treatment
This course provides advanced training in acupuncture channel theory, focusing on the twelve primary and extraordinary channels, their pathologies, and diagnostic methods. Students will learn to develop personalized treatment plans, apply specialized needling techniques, and integrate channel-based acupuncture with other TCM therapies. Emphasis is placed on professionalism, patient-centered care, and effective communication to enhance clinical outcomes.
2.00 credit hours. Lecture. ACT.501, ACT.502, ACT.503 (Required, Previous).

ACT.602
Acupuncture Clinical Practice I
Students synthesize Chinese medicine principles to construct and execute effective treatment plans. The course emphasizes proficiency in pulse and tongue diagnosis, researching cases, practicing differential diagnosis, strategic treatment planning, and presenting case analyses. Point location, needling and Clean Needle Technique are practiced. Students cultivate patient-centered communication and refine documentation skills to ensure safe, precise, and culturally competent care.
2.00 credit hours. Lecture. ACT.501, ACT.502, ACT.503, ACT.513 (Required, Previous); ACF.601 or ACF.602 (Required, Concurrent).

ACT.603
Acupuncture Clinical Practice II
This course deepens students' diagnostic acumen and treatment precision, with a focus on complex case management and advanced acupuncture techniques. Students elevate their communication, professionalism, and documentation practices to prepare for clinical practice, reinforcing safety, empathy, and cultural responsiveness.
2.00 credit hours. Lecture. ACT.602 (Required, Previous); ACF.602 (Required, Previous or Concurrent).

Applied Natural Products (ANP)

ANP.709
Safety in Natural Products

Students cover several major topics-safety issues associated with different organ systems, direct and indirect toxicities of plants and natural products, and pharmacovigilance, as well as principles of quality and efficacy. Students focus on how to find, evaluate, review, and apply the current literature around issues of botanical quality and safety.
3.00 credit hours. Lecture.

Behavioral Sciences (BEH)

BEH.101
Health Psychology Seminar I
This seminar course for health psychology majors focuses on the breadth of the field of psychology. Students read and discuss articles published in professional journals as well as articles on topics related to the various applications of the knowledge and skills developed through psychology. Health Psychology majors are required to take three semesters of this seminar for a total of three credit hours.
1.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.102
Health Psychology Seminar II
This seminar course for health psychology majors focuses on the breadth of the field of psychology. Students read and discuss articles published in professional journals as well as articles on topics related to the various applications of the knowledge and skills developed through psychology. Health Psychology majors are required to take three semesters of this seminar for a total of three credit hours.
1.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.103
Health Psychology Seminar III
This seminar course for health psychology majors focuses on the breadth of the field of psychology. Students read and discuss articles published in professional journals as well as articles on topics related to the various applications of the knowledge and skills developed through psychology. Health Psychology majors are required to take three semesters of this seminar for a total of three credit hours.
1.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.250
Health Psychology
This course provides an overview of the perspective, theories, and topics of health psychology, focusing on the psychosocial factors in the understanding of the relationship of health to behavior.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.254
Death and Dying
This course explores the sociocultural evolution of death and dying, focusing particularly on cultural adaptations in the United States. Topics include factors influencing attitudes toward death and dying, socialization toward death, facing lifethreatening illness, the role of healthcare systems, last rites and survivors, and the law and death.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.260
Lifestyle Medicine
Students examine evidenced-based recommendations and interventions, which lifestyle medicine practitioners utilize in healthcare settings to prevent and treat chronic diseases. They also learn theories of health behavior change and practice motivational approaches, which support adoption and maintenance of healthy behaviors. Interventions focus on nutrition, exercise, stress management, and sleep. Students apply these principles and interventions to specific chronic diseases.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.330
MRI Patient Experience
Health Psychology and Magnetic Resonance Imaging (MRI) students work in interprofessional collaborative teams to evaluate and practice patient-centered interventions in the context of MRI. Students learn to distinguish among types of emotion, recognize patients' nonverbal and verbal behaviors, and implement evidence-based emotion regulation interventions. Through this course, students learn about the roles and responsibilities of their respective professions.
1.00 credit hours. Lecture. BEH.250 (Required, Previous).

BEH.331
The Patient Experience

In this interprofessional practice and education (IPE) course, Health Psychology students work in interprofessional teams with students from one of the professional programs to evaluate the patient experience and design evidence-informed, patient-centered interventions. In addition to developing evidence-informed decision making, patient-centered care, and quality improvement skills, students develop the competencies established by the Interprofessional Education Collaborative (IPEC).
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.341
Biological Psychology
An introduction to behavioral neuroscience, this course explores the physiological bases of human behavior. With an emphasis on the brain and neural communication, it covers the basic neurological processes that underlie various human behaviors, including sensation and perception, learning and memory, hormonal control of sexual development, psychopharmacology, and psychological/neurological disorders.
3.00 credit hours. Lecture. LIB 120, BIO.152 or BIO.210 (Required, Previous).

BEH.344
Integrative Therapies and Mental Health Health in Older Adults Therapies
Students will examine the underlying principles and utilization of complementary and integrative therapies to support mental health while aging. Interventions include body-based practices, nutritional approaches, expressive arts, and therapeutic environments. Critical analysis of scientific literature will focus on applications for the prevention and treatment of cognitive and emotional disorders and enhancement of quality of life in older adults.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.345
Myths and Misconceptions in Psychology
Using psychology to explore myths and misconceptions of human behavior, this course provides both a theoretical and a practical understanding of how myths and misconceptions arise, how they are perpetuated, and how research can be used to evaluate their validity. Students are expected to learn and share accurate information about selected myths and misconceptions.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.350
Psychopathology and Mental Health Sciences
This course provides a broad survey of mental disorders described in the DSM/ICD, including etiology, assessment, and treatment. Students will examine interdisciplinary evidence regarding psychological health, in the context of contemporary clinical practice.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.351
Social Psychology
This course investigates the effect of the social environment on individual behavior. Phenomena such as attitude formation and change, group processes, and social perception are analyzed with a view toward their application in various realworld settings.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.352
Human Development Through the Life Cycle
Designed to expose students to human development across the lifespan, this course is intended to provide both a theoretical and a practical understanding of individual growth and change, distinguishing the characteristics of different stages of development, and the issues and processes that recur throughout the entire lifespan.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.353
Nutrition and Health
Students examine evidence-based relationships between nutrition and the maintenance of good health and prevention of chronic disease. They become familiar with the U.S. Dietary Guidelines, explore current topics in nutrition, and gain practical skills to make healthful food choices. Additionally, students examine strategies to influence people's food choices and apply these strategies to a specific chronic disease.
3.00 credit hours. Lecture. LIB.120, BIO.152 or BIO.210, CHE.110, CHE.113, or CHE.131 (Required, Previous).

BEH.355
Organizational Psychology

This course is a study of the ways in which basic psychological principles and research are applied to organizational behavior. Topics include personnel selection, motivation, leadership, group dynamics, and work stress.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.356
Gender Roles
Designed to introduce students to the social psychology of sex and gender, this course places contemporary U.S. norms in their biological, historical, and cross-cultural contexts. Emphasis is placed on female gender roles, but male roles, work, and family also are discussed.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.357
Positive Psychology
Students critically review theory and empirical research in the emerging field of positive psychology. Topics include positive affect, engagement, optimism, character strengths, values, goals, and healthy aging. Students link course content to their personal lives and professional disciplines.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.358
Theories of Personalities
Students will explore fundamental questions about who we are and how we got that way. Students will review major theoretical perspectives on personality and will examine empirical efforts to address some of the questions raised by those theories. Students will also compare historical perspectives with current trends in personality theory and will focus on the relationship between personality and well-being.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.362O
Adult Development and Aging
Students will examine the complex interaction of biological, psychological and social forces that characterize normal aging as well as age-related diseases. They will also apply theories and concepts within the field of geropsychology to examine their own attitudes toward aging and to help them understand the older adults they will meet as part of the requirements of this course.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.405
Mind/Body Medicine
Students critically review current scientific literature that addresses the mechanisms and efficacy of mind-body medicine, a category of complementary and alternative medicine. Topics include psychoneuroimmunology, the relaxation response, mindfulness, meditation, yoga, tai chi, nutrition, and beliefs. Students also practice interventions, examine their utilization in healthcare settings, and consider how they may apply these in their future professional careers.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.450AA
ST: Introduction to Fundamental Counseling Skills
Special Topics course. This course prepares future healthcare professionals for positive patient interactions. This course equips students with essential communication, empathy, and ethical skills necessary for effective healthcare encounters. Students explore culturally sensitive approaches to build strong patient-provider relationships with the goal of improving healthcare adherence.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.450AB
ST: Cognition
Special Topics course. This course provides a basic introduction to human cognition. Topics include language, pattern recognition, attention, memory, categorization and concept formation, problem solving, and cognitive development. Will analyze current research and theories in the field.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.450BB
ST:Clinical Behavior Analysis
Special Topics course. This course introduces clinical behavior analysis (CBA), focusing on learning theory in behavior modification. Students explore classical and operant conditioning in clinical concerns like anxiety and depression.

Topics include functional behavioral assessment, reinforcement-based interventions, contingency management, and extinction. Evidence-based strategies such as behavioral activation and exposure therapy are examined through case studies and hands-on activities.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.450Y
ST: Positivity and Relaxation Training Program (PART)
Special Topics course. This 9-week program will help participants develop a self-care routine to better manage stress, improve outlook, and enhance quality of life. Students will learn to recognize their personal stress responses, practice meditative techniques to elicit relaxation responses, change thought patterns and emotional outlook to adaptive and positive perspectives, and harness creativity, humor and appreciation to cultivate positivity and personal well being.
1.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.451
Research Methods in Health and Behavior
This course is designed to give the student an appreciation of the scientific method in general and knowledge of the techniques used by psychologists and sociologists in particular. Students become involved in small-scale empirical research projects.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

BEH.454
Stress and Illness
This course is designed to investigate the relationship between environmentally induced stress and illness. Particular emphasis is placed on the health-related effects of changes in the physical environment, sociological status, and sociocultural conditions.
3.00 credit hours. Lecture. LIB.120, BIO.152 or BIO.210 (Required, Previous).

BEH.456
Applications of Research Methods
Students apply concepts and skills developed in BEH.451 to make ethical evidence-based decisions about real-world problems. Working in collaborative teams, students create and implement a literature search strategy, critically read and synthesize sources, and design a study that adds to the literature. Students develop and demonstrate the skills needed to communicate in a variety of oral and written formats.
3.00 credit hours. Lecture. BEH.451 (Required, Previous).

BEH.457
Drugs and Behavior
An introduction to the study of psychopharmacology, this course covers the principles of drug action and the effects of drugs on behavior. Students learn the pharmacological, psychological, and health outcomes of each major class of psychoactive drugs (recreational and therapeutic), including patterns of use and abuse by individuals, along with medical and sociocultural factors that determine the use of psychoactive drugs.
3.00 credit hours. Lecture. LIB.120, BIO.152 or BIO.210 (Required, Previous).

BEH.458
Child and Adolescent Development
Students will examine the biological, psychological, and social factors of development, and the interplay among them. Students will study human development from conception though adolescence.
3.00 credit hours. Lecture. LIB.120, BEH.352 (Required, Previous).

BEH.532
Directed Study
Supervised study in behavioral sciences involving a survey of existing knowledge, self-instructed and/or faculty assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Lecture.

Biology (BIO)

BIO.105
Concepts of Biology
This class is an introduction to the science of biology for non-science majors. Students will learn about the fundamentals of biology: Scientific inquiry, biological chemistry, cell structure and function, DNA and genetics, evolution and ecology, and an overview of living organisms. Students will also learn about study skills for biology and biological thinking.
3.00 credit hours. Lecture.

BIO.110
Anatomy and Physiology I
This course provides first-year students with directed study of the anatomical structure and physiological processes of the human body. Topics include subatomic, atomic, cellular, tissue, integumentary, skeletal, muscular, and nervous systems.
3.00 credit hours. Lecture. BIO.110L (Required, Previous or Concurrent).

BIO.110L
Anatomy and Physiology I Lab
This course provides first-year students with directed study of the anatomical structure and physiological processes of the human body. Topics include subatomic, atomic, cellular, tissue, integumentary, skeletal, muscular, and nervous systems.
1.00 credit hours. Laboratory. BIO.110 (Required, Previous or Concurrent).

BIO.150L
Biology I Lab
This laboratory course emphasizes experimental approaches to understanding basic and applied aspects of cellular and molecular biology. Topics include cell structure and function, biochemistry, genetics and heredity, and biotechnology.
1.00 credit hours. Laboratory. BIO.151 (Required, Previous or Concurrent).

BIO.151
Biology I: Cell and Molecular Biology
This course emphasizes the experimental approaches to understanding the basic and applied aspects of cellular and molecular biology. Topics include cell structure and function, metabolism, the cellular and molecular basis of development and heredity, and healthcare applications of molecular biotechnology.
3.00 credit hours. Lecture. BIO.151R (Required, Concurrent).

BIO.151R
Biology I: Cell and Molecular Recitation
This course emphasizes the experimental approaches to understanding the basic and applied aspects of cellular and molecular biology. Topics include cell structure and function, metabolism, the cellular and molecular basis of development and heredity, and healthcare applications of molecular biotechnology.
0.00 credit hours. Recitation. BIO.151; (Required, Concurrent)
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BIO.152
Biology II: Biology of Organisms
This course introduces the fundamental principles that unify the vast diversity of organisms, including evolutionary theory, ecology, human anatomy and histology, the evolution of organ systems, and the normal functioning of the human organism.
3.00 credit hours. Lecture. BIO.151 (Required, Previous); BIO.152R (Required, Concurrent); BIO.152L (Required, Previous or Concurrent).

BIO.152L
Biology II Lab
This course introduces the fundamental principles that unify the vast diversity of organisms, including evolutionary theory, ecology, human anatomy and histology, the evolution of organ systems, and the normal functioning of the human organism.
1.00 credit hours. Laboratory. BIO.151 (Required, Previous); BIO.152 (Required, Previous or Concurrent).

BIO.152R
Biology II Recitation
0.00 credit hours. Recitation. BIO.152 (Required, Previous or Concurrent).

BIO.210
Anatomy and Physiology II
A continuation of BIO.110. The following systems are explored: endocrine, immune, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive. The concept of homeostasis and the underlying principles common to all systems are applied from the submolecular to the organismal level for each system.
3.00 credit hours. Lecture. BIO.110 (Required, Previous); BIO.210L (Recommended, Previous or Concurrent).

BIO.210L
Anatomy and Physiology II Lab
A continuation of BIO.110. The following systems are explored: endocrine, immune, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive. The concept of homeostasis and the underlying principles common to all systems are applied from the submolecular to the organismal level for each system.
1.00 credit hours. Laboratory. BIO.110 (Required, Previous); BIO.210 (Required, Previous or Concurrent).

BIO.210R
Anatomy and Physiology II Recitation
0.00 credit hours. Recitation. BIO.210 (Required, Previous or Concurrent).

BIO.255
Medical Microbiology
An introduction to microbial principles, this course is designed to give a functional understanding of microorganisms, their role in disease and the environment, and our defenses against infections. The laboratory covers the principles of microscopy, aseptic techniques, and microbial cultivation and control.
3.00 credit hours. Lecture. BIO.210 or BIO.152 (Required, Previous); BIO.255L (Required, Previous or Concurrent).

BIO.255L
Microbiology Lab
An introduction to microbial principles, this course is designed to give a functional understanding of microorganisms, their role in disease and the environment, and our defenses against infections. The laboratory covers the principles of microscopy, aseptic techniques, and microbial cultivation and control.
1.00 credit hours. Laboratory. BIO.210 or BIO.152 (Required, Previous); BIO.255 (Required, Previous or Concurrent).

BIO.255O
Medical Microbiology
An introduction to microbial principles, this course is designed to give a functional understanding of microorganisms, their role in disease and the environment, and our defenses against infections. The laboratory covers the principles of microscopy, aseptic techniques, and microbial cultivation and control.
4.00 credit hours. Lecture. BIO.210 or BIO.152 (Required, Previous).

BIO.260
Molecular Biology
The replication, expression, and regulation of genetic information will be learned in detail, including a comprehensive review of the mechanisms involved in genetic variation and signal transduction. In-depth analysis of recombinant DNA technology and RNA interference are included with a stress on medical applications. Scientific reading comprehension and data analysis also are emphasized.
3.00 credit hours. Lecture. BIO.152 (Required, Previous).

BIO.321O
Nutrition Science
This course is designed to introduce the principles of nutrition science, with emphasis on nutrients important to the human body and life cycle, dietary guidelines, food composition, disease prevention, weight control, and dietary modifications. Other contemporary nutrition issues will be addressed.
3.00 credit hours. Lecture. BIO.152 and BIO.210, CHE.132 or CHE.210 (Required, Previous).

BIO.332
Genetics
This course studies the gene at the cellular and organismal levels of expression, with an emphasis on human and medical genetics. Topics include classical genetics, multifactorial traits, pedigree analysis, gene-mapping methods, cytogenetics, and population genetics. Testing, diagnostics, and treatment of genetic disorders also are discussed.
3.00 credit hours. Lecture. BIO.360 or PSB.331 (Required, Previous).

BIO.335L
Experimental Techniques in Molecular Biology
Building upon techniques learned in prior laboratory courses, students explore the theoretical and practical applications of common techniques performed in biomedical research laboratories and apply them in a research project over the course of the semester. Techniques include the polymerase chain reaction; restriction enzyme digestion; gene cloning; DNA purification and analysis; cell culture techniques; and protein expression, purification, and analysis.
3.00 credit hours. Laboratory. BIO.260, BIO.360 (Required, Previous).

BIO.345O
Exercise Physiology
Students considering Health Science professional careers will learn the essential components of Exercise Physiology (EP). Students will explore the foundations of EP through lecture, discussion, laboratory assignments, and participate in exercise assessments using interviews and exercise testing to prepare an exercise prescription. EP provides students practical experience in the process health care professionals use to make clinical decisions. Students must enroll in both BIO 345 and BIO 345L. Lecture and lab cannot be taken separately.
3.00 credit hours. Lecture. BIO.152 or BIO.210 (Required, Previous); BIO.345OL (Required, Previous or Concurrent).

BIO.345OL
Exercise Physiology Lab
Students considering Health Science professional careers will learn the essential components of Exercise Physiology (EP). Students will explore the foundations of EP through lecture, discussion, laboratory assignments, and participate in exercise assessments using interviews and exercise testing to prepare an exercise prescription. EP provides students practical experience in the process health care professionals use to make clinical decisions. Students must enroll in both BIO 345 and BIO 345L. Lecture and lab cannot be taken separately.
1.00 credit hours. Laboratory. BIO.345O (Required, Previous or Concurrent).

BIO.346
Applied Concepts in Public Health
Biological and social determinants of health and illness are investigated. Students will actively engage in case studies to apply concepts important in public health, including epidemiology, disease prevention, control of epidemics, environmental health, and policy development.
3.00 credit hours. Lecture. BIO.255 and BIO.255L (Required, Previous).

BIO.351
Advanced Human Anatomy and Physiology I
The first of a two-part sequence exploring the anatomical design of the human body and its functional relationships. Given that this course is geared for healthcare providers, the systems approach will be integrated with case histories. Classes will be a combination of traditional lecture and in-class case studies using a group discussion format.
3.00 credit hours. Lecture. BIO.152 (Required, Previous); BIO.351L (Required, Previous or Concurrent).

BIO.351L
Advanced Anatomy and Physiology I Lab
BIO,351L is the first of a two part sequence exploring the anatomical design of the human body and its functional relationship. Given that this course is geared for healthcare providers, the systems approach will be integrated with case history. Classes will be a combination of traditional lecture and in-class case studies using group discussion format.
1.00 credit hours. Laboratory. BIO.152 (Required, Previous); BIO.351 (Required, Previous or Concurrent).

BIO.352
Advanced Human Anatomy and Physiology II
The second of a two-part sequence exploring the anatomical design of the human body and its functional relationships. Given that this course is geared for healthcare providers, the systems approach will be integrated with case histories. Classes will be a combination of traditional lecture and in-class case studies using a group discussion format.
3.00 credit hours. Lecture. BIO.351 and BIO.351L (Required, Previous); BIO.352L (Required, Previous or Concurrent).

BIO.352L
Advanced Human Anatomy and Physiology II
BIO,352L is the second of a two part sequence exploring the anatomical design of the human body and its functional relationship. Given that this course is geared for healthcare providers, the systems approach will be integrated with case history. Classes will be a combination of traditional lecture and in-class case studies using group discussion format.
1.00 credit hours. Laboratory. BIO.351and BIO.351L (Required, Previous); BIO.352 (Required, Previous or Concurrent).

BIO.352R
Advanced Anatomy and Physiology II Recitation
0.00 credit hours. Recitation. BIO.352 (Required, Previous or Concurrent).

BIO.360
Cellular Biochemistry

Students learn the structure, metabolism, and biochemical function of major macromolecules (proteins, carbohydrates, lipids, and nucleic acids). Bioenergetics, enzyme kinetics, cell signaling, and regulation are studied at the molecular level. An emphasis is placed on cellular and physiological applications of biochemistry (in particular, competencies important for study in medical school).
4.00 credit hours. Lecture. CHE.232 (Required, Previous).

BIO.360R
Cellular Biochemistry Recitation
Students learn the structure, metabolism, and biochemical function of major macromolecules (proteins, carbohydrates, lipids, and nucleic acids). Bioenergetics, enzyme kinetics, cell signaling, and regulation are studied at the molecular level. An emphasis is placed on cellular and physiological applications of biochemistry (in particular, competencies important for study in medical school).
0.00 credit hours. Recitation. BIO.360 (Required, Previous or Concurrent).

BIO.405
Plagues & Pandemics
By focusing on the biology and public health issues related to infectious diseases, students analyze and apply knowledge regarding the etiology, symptoms, diagnosis, transmission, treatment and prevention of illnesses that are either newly emerging or resurfacing as global threats. Genetic diseases with high morbidity and/or mortality burden are also investigated. Concepts are studied through problem-based learning and case investigations.
3.00 credit hours. Lecture. BIO.151, BIO.255 (Required, Previous).

BIO.410
Your Inner Fish
Students will learn how 3.5 billion years of evolutionary history came to shape the human body in its current form. Students will read the bestselling book *Your Inner Fish* as a jumping off point, as well as readings from current scientific literature to help develop deeper understanding of the links between evolution, human anatomy and physiology, and human health.
3.00 credit hours. Lecture. BIO.152 or BIO.210 (Required, Previous).

BIO.420
Communication in the Biological Sciences
This course covers the many facets of communication in the biological sciences. Students will be expected to produce written summaries of primary scientific literature and a special project involving either a professional poster or a grant proposal. Students also will learn to gear oral presentations to different audiences and use communication-oriented technologies, including the creation of original podcasts and blogs.
3.00 credit hours. Lecture. BIO.360 or PSB.331 (Required, Previous).

BIO.430
Molecular Biology of Cancer
Understanding the causes of and potential treatments for human cancers requires a detailed analysis of the molecular and cellular mechanisms that are disrupted in cancer cells. Students will learn the current understanding of biomedical research on such topics as oncogenes, tumor suppressor genes, signal transduction pathways, cell cycle regulation, apoptosis, angiogenesis, and metastasis.
3.00 credit hours. Lecture. BIO.360 (Required, Previous).

BIO.434
Immunology
This course provides an introduction to the biochemical, cellular and clinical aspects of immunology. Topics include innate immunity, humoral (antibody-mediated) immunity, T cell-mediated immunity, the complement system, cytokines, inflammation, hypersensitivity/allergic reactions, autoimmune disorders, vaccinations, immunodeficiencies, and transplantation immunology.
3.00 credit hours. Lecture. BIO.152, BIO.360, PSB.331 or PSB.337 (Required, Previous).

BIO.440
Cell Biology
An in-depth study of the molecular structure and function of the most fundamental unit of life, with an emphasis on analysis of scientific literature in the field of cell biology. The unique biological properties of stem cells will be a recurring theme throughout the course, along with the impact of stem cell research on medicine and human health.
3.00 credit hours. Lecture. BIO.260 or BIO.360 (Required, Previous).

BIO.445

Applied Human Physiology
This course will provide students with the study of physiological processes of the human body, covering major organ systems (nervous, endocrine, reproductive, cardiovascular, respiratory, urinary, digestive, and skeletal). Topics will also include diseases associated with organ systems, the effects of aging on organ systems, and genetic and environmental factors that influence physiological processes.
4.00 credit hours. Lecture. BIO.152 or BIO.210 (Required, Previous).

BIO.450N
ST: Your Inner Fish
Special Topics course. Students will learn how 3.5 billion years of evolutionary history came to shape the human body in its current form. Students will read the bestselling book Your Inner Fish as a jumping off point, as well as readings from current scientific literature to help develop deeper understanding of the links between evolution, human anatomy and physiology, and human health.
3.00 credit hours. Lecture. BIO.152 (Required, Previous).

BIO.450P
ST: Applied Human Anatomy
Special Topics course. This course provides students with a study of the structure of the human body, covering the integumentary, skeletal, muscular, nervous, cardiovascular, endocrine, lymphatic, respiratory, digestive, urinary, and reproductive systems. Topics will include anatomical structures (chemicals, cells, tissues, and organs) and how they apply to the body's function as well as anatomical changes due to disease, aging, and other factors.
3.00 credit hours. Lecture. BIO.450PL (Required, Concurrent).

BIO.450PL
ST: Applied Human Anatomy Lab
Special Topics course. This course provides students with a study of the structure of the human body, covering the integumentary, skeletal, muscular, nervous, cardiovascular, endocrine, lymphatic, respiratory, digestive, urinary, and reproductive systems. Topics will include anatomical structures (chemicals, cells, tissues, and organs) and how they apply to the body's function as well as anatomical changes due to disease, aging, and other factors.
1.00 credit hours. Lecture. BIO.450P (Required, Concurrent).

BIO.455
Advanced Microbiology
This lecture and laboratory course in microbiology covers advanced material in microbial physiology, genetics, diversity, ecology, and biotechnology. The laboratory will include exercises coordinated with the lecture topics and will feature specialized laboratory techniques and instrumentation, and an independent study component.
3.00 credit hours. Lecture. BIO.255 (Required, Previous); BIO.455L (Required, Previous or Concurrent).

BIO.455L
Advanced Microbiology Lab
This lecture and laboratory course in microbiology covers advanced material in microbial physiology, genetics, diversity, ecology, and biotechnology. The laboratory will include exercises coordinated with the lecture topics and will feature specialized laboratory techniques and instrumentation, and an independent study component.
1.00 credit hours. Laboratory. BIO.255 (Required, Previous); BIO.455 (Required, Previous or Concurrent).

BIO.465
Medical Parasitology
Students will explore the various aspects of parasite biology, host interactions, and the pathogenesis of parasitic diseases. Emphasis will be placed on major parasitic organisms that impact human populations. Students will learn the fundamentals pertaining to diagnosis, treatment, transmission, and control of human parasites as an introduction for those pursuing careers in the medical industry.
3.00 credit hours. Lecture. BIO.152 and BIO.255 (Required, Previous).

BIO.470
The Biology of Obesity
This course will examine neurological, endocrine, and environmental factors, including diet, that influence body weight and energy balance in humans. We will also discuss the detailed mechanisms by which obesity is linked to type II diabetes, cardiovascular disease, and other pathologies. Finally, we will discuss treatments for obesity including dietary changes, exercise, surgical intervention, and medications.
3.00 credit hours. Lecture. BIO.152 or BIO.210 (Required, Previous).

BIO.530

Undergraduate Research Project
Research participation at the undergraduate level is offered to superior students in biology and microbiology. Emphasis is placed on teaching the methods and techniques used in solving research problems.
1.00 - 3.00 credit hours. Lecture.

BIO.532
Directed Study
Supervised study in biology and microbiology involves a survey of existing knowledge, self-instructed and/or faculty assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Research. BIO.152 (Required, Previous).

BIO.734
Immunology
This course provides an introduction to the cellular and clinical aspects of immunology. Topics include clonal selection theory, immunoglobulin function, B cell and T cell development and functioning, cytokines, histocompatibility complex restriction mechanisms, tolerance, and autoimmunity, hypersensitivity, and immunodeficiency states and transplantation immunology.
3.00 credit hours. Lecture.

Biopharmaceuticals and Life Science (BLS)

BLS.120
Data Analysis I with Lab
Students will gain knowledge and apply experimental design, hypothesis formulation, and data analysis skills to interpret data and communicate their findings. Students will analyze data from methods used in the biopharmaceutical industry using real-world cases to apply concepts and structure communications in reports and presentations. Designed for students interested in developing foundational quantitative, communication, and research skills.
4.00 credit hours. Lecture.

Biomedical Informatics (BMI)

BMI.101
Introduction to Informatics
This survey course provides students with an overview of the discipline of biomedical informatics, and is intended for first-year students majoring in Biomedical Informatics. Students will learn and apply principles of biomedical informatics and research data management to case-based examples.
3.00 credit hours. Lecture.

BMI.410
Data Visualization
The course provides students with an understanding of the important of data visualization in healthcare and trains them to communicate clear and compelling insights in health and health care data using the Tableau software tool.
3.00 credit hours. Lecture.

Biotechnology (BTC)

BTC.101
Biotechnology Career Seminar I
This course will help students explore the breadth of career opportunities and pathways in biotechnology and life sciences, learn how an undergraduate degree in biotechnology can lead to diverse careers in research, industry, healthcare, and regulatory affairs, and compare and contrast different career paths. Students will connect with professionals in the field and develop a personalized career exploration plan.
1.00 credit hours. Lecture.

BTC.201
Biotechnology Career Seminar II
This is the second course in the seminar series designed to support students in preparing for employment and graduate studies in biotechnology and life sciences. Students will refine their job search strategies, explore employer expectations, and develop application materials such as resumes, cover letters, and personal statements. Students will refine networking and interview skills and formulate a professional development plan.
1.00 credit hours. Lecture. BTC.101 (Required, Previous).

BTC.320

Techniques in Biotechnology I
This course provides hands-on training in biotechnology laboratory skills, including laboratory record-keeping, solution preparation, and mammalian cell culture. Students delve into cell culture techniques, learn data visualization, explore mammalian gene expression, and apply skills in a research project over the course of the semester. Safety protocols, electronic lab notebooks, and advanced methods like CRISPR are also covered.
3.00 credit hours. Lecture. BIO.260, BIO.440 (Required, Previous).

BTC.321
Techniques in Biotechnology II
Students continue to develop fundamental biotechnology lab skills, building upon skills learned in Biotechnology Lab I. Students investigate protein function and expression using a variety of experiments and techniques. Topics include protein purification and quantification, gel electrophoresis, immunoblotting, phosphorylation analysis, and biophysical assays. A research project that examines effect of drugs and inhibitors on proteins will culminate the course.
3.00 credit hours. Lecture. BTC.320 (Required, Previous).

Chemistry (CHE)

CHE.110
Basic Chemistry I
This course introduces the basic principles of chemistry, including gas laws, acid-base chemistry, stoichiometry, energy, structure and bonding, nuclear chemistry, and solutions. Laboratory exercises are designed to complement the didactic material.
3.00 credit hours. Lecture. CHE.110R (Required, Concurrent); CHE.110L (Required, Previous or Concurrent).

CHE.110L
Basic Chemistry I Lab
This course introduces the basic principles of chemistry, including gas laws, acid-base chemistry, stoichiometry, energy, structure and bonding, nuclear chemistry, and solutions. Laboratory exercises are designed to complement the didactic material.
1.00 credit hours. Laboratory. CHE.110 (Required, Previous or Concurrent).

CHE.110O
Basic Chemistry I
This course introduces the basic principles of chemistry, including gas laws, acid-base chemistry, stoichiometry, energy, structure and bonding, nuclear chemistry, and solutions. Laboratory exercises are designed to complement the didactic material.
3.00 credit hours. Lecture.

CHE.110R
Basic Chemistry I Recitation
0.00 credit hours. Recitation. CHE.110 (Required, Concurrent).

CHE.113
Chemistry and Society
This course provides an overview of basic principles of chemistry that apply to everyday life. The course is designed to generate an appreciation of chemistry. Topics covered will include unit conversion, periodic table trends, acid/base chemistry, solubility and chemical reactions.
3.00 credit hours. Lecture.

CHE.113L
Chemistry and Society Lab
This course provides an overview of basic principles of chemistry, which apply to everyday life. The labs are designed to generate an appreciation of chemistry. Labs covered will include the physical properties, identification of artificial coloring in food, economics of a chemical substance, energy, recycling, ideal gas law, acids and bases, determination of unknowns.
1.00 credit hours. Laboratory. CHE.113 (Required, Previous or Concurrent).

CHE.131
Chemical Principles I
This course emphasizes the construction of scientific concepts based on observation and the development of reasoning skills based on active learning. Topics include mass, force, energy, interpreting phenomena in terms of atomic theory, gases, stoichiometry, periodic properties of the elements, and solutions.
3.00 credit hours. Lecture. CHE.131R (Required, Concurrent); CHE.131L (Required, Previous or Concurrent).

CHE.131L
Chemical Principles I Lab
This course emphasizes the construction of scientific concepts based on observation and the development of reasoning skills based on active learning. Topics include mass, force, energy, interpreting phenomena in terms of atomic theory, gases, stoichiometry, periodic properties of the elements, and solutions.
1.00 credit hours. Laboratory. CHE.131 (Required, Previous or Concurrent).

CHE.131R
Chemical Principles I Recitation
This course emphasizes the construction of compounds are introduced, and the mechanisms of reactions are emphasized. Laboratory experiments develop manipulative skills in the classical methods of purification and separation of organic compounds.
0.00 credit hours. Recitation. CHE.131 (Required, Previous or Concurrent).

CHE.132
Chemical Principles II
This course emphasizes the construction of scientific concepts based on observation and the development of reasoning skills based on active learning. Topics include atomic structure, bonding, molecular geometry, reaction energetics and rates, equilibrium, redox, and acid-base chemistry.
3.00 credit hours. Lecture. CHE.131 (Required, Previous); CHE.132R (Required, Concurrent).

CHE.132L
Chemistry II Lab
This course emphasizes the construction of scientific concepts based on observation and the development of reasoning skills based on active learning. Topics include atomic structure, bonding, molecular geometry, reaction energetics and rates, equilibrium, redox, and acid-base chemistry.
1.00 credit hours. Laboratory. CHE.131, CHE.132 (Required, Previous or Concurrent).

CHE.132R
Chemistry II Recitation
This course emphasizes the construction of scientific concepts based on observation and the development of reasoning skills based on active learning. Topics include atomic structure, bonding, molecular geometry, reaction energetics and rates, equilibrium, redox, and acid-base chemistry.
0.00 credit hours. Recitation. CHE.132 (Required, Concurrent); CHE.131 (Required, Previous or Concurrent).

CHE.210
Basic Chemistry II
This course is a continuation of CHE 110 and covers the basic principles of organic chemistry and biochemistry and their application to the life sciences. Laboratory exercises are designed to complement the didactic material.
3.00 credit hours. Lecture. CHE 110 (Required, Previous); CHE.210L (Required, Previous or Concurrent).

CHE.210L
Basic Chemistry II Lab
This course is a continuation of CHE 110 and covers the basic principles of organic chemistry and biochemistry and their application to the life sciences. Laboratory exercises are designed to complement the didactic material.
1.00 credit hours. Laboratory. CHE.110 (Required, Previous); CHE.210 (Required, Previous or Concurrent).

CHE.210R
Basic Chemistry II Recitation
0.00 credit hours. Recitation. CHE.210 (Required, Previous or Concurrent).

CHE.230
Organic Chemistry for Health Professionals (without Lab)
The structure, nomenclatures, stereochemistry, properties and reactions of carbon-containing compounds are introduced. The mechanisms of reactions are emphasized.
3.00 credit hours. Lecture. CHE.132 (Required, Previous).

CHE.231
Organic Chemistry I

The structure, nomenclature, stereochemistry, properties, and reactions of carbon-containing compounds are introduced, and the mechanisms of reactions are emphasized. Laboratory experiments develop manipulative skills in the classical methods of purification and separation of organic compounds.
3.00 credit hours. Lecture. CHE.132 (Required, Previous); CHE.231R (Required, Concurrent); CHE.231L (Required, Previous or Concurrent).

CHE.231L
Organic Chemistry I Lab
The structure, nomenclature, stereochemistry, properties, and reactions of carbon-containing compounds are introduced, and the mechanisms of reactions are emphasized. Laboratory experiments develop manipulative skills in the classical methods of purification and separation of organic compounds.
1.00 credit hours. Laboratory. CHE.132 (Required, Previous); CHE.231 (Required, Previous or Concurrent).

CHE.231R
Organic Chemistry I Recitation
The structure, nomenclature, stereochemistry, properties, and reactions of carbon-containing compounds are introduced, and the mechanisms of reactions are emphasized. Laboratory experiments develop manipulative skills in the classical methods of purification and separation of organic compounds.
0.00 credit hours. Recitation. CHE.231 (Required, Concurrent).

CHE.232
Organic Chemistry II
The chemical reactions of alkenes, aldehydes, ketones, carboxylic acids, and their derivatives and amines are surveyed, and a mechanistic understanding of reactions is further developed. The structure and properties of multifunctional compounds, including amino acids, carbohydrates, and steroids, are presented.
3.00 credit hours. Lecture. CHE.231 (Required, Previous); CHE.232R (Required, Concurrent).

CHE.232R
Organic Chemistry II Recitation
0.00 credit hours. Recitation. CHE.232 (Required, Previous or Concurrent).

CHE.234L
Organic Chemistry II Lab
More chemical reactions of organic compounds are carried out. A multistep sequence of reactions results in the preparation of a known pharmaceutical agent. Infrared and nuclear magnetic resonance spectra are discussed and applied to the identification of reaction products.
1.00 credit hours. Laboratory. CHE.231, CHE.231L (Required, Previous); CHE.232 (Required, Previous or Concurrent).

CHE.314
Analytical Chemistry
This course introduces students to the theory and practice of quantitative analysis. Laboratory experiments are designed to be a practical realization of the topics discussed in class.
3.00 credit hours. Lecture. CHE.132 (Required, Previous); CHE.314L (Required, Previous or Concurrent).

CHE.314L
Analytical Chemistry Lab
This course introduces students to the theory and practice of quantitative analysis. Laboratory experiments are designed to be a practical realization of the topics discussed in class.
1.00 credit hours. Laboratory. CHE.132 (Required, Previous); CHE.314 (Required, Previous or Concurrent).

CHE.317
Instrumental Analysis
This course covers the fundamentals of instrumental methods of analysis, emphasizing spectroscopic, chromatographic, and surface techniques. Laboratory projects make use of techniques discussed in lecture.
4.00 credit hours. Lecture. MAT.152, MAT.172 or MAT.251, CHE.232, CHE.314, PHY.270 (Required, Previous); CHE.317L (Required, Previous or Concurrent).

CHE.317L
Instrumental Analysis Lab
This course covers the fundamentals of instrumental methods of analysis, emphasizing spectroscopic, chromatographic, and surface techniques. Laboratory projects make use of techniques discussed in lecture.
0.00 credit hours. Laboratory. CHE.317 (Required, Previous or Concurrent).

CHE.333L
Introductory Biochemistry Lab
Introduces the physical methods used to isolate, identify, and characterize proteins and nucleic acids.
1.00 credit hours. Laboratory. PSB.331 or BIO.360 (Required, Previous).

CHE.340
Inorganic Chemistry
The occurrence and physical and chemical properties of elements and their compounds are examined with emphasis on periodic relationships. Topics include solubility, acid-base, redox reactions, coordination compounds, and elemental properties. Laboratory exercises illustrate lecture concepts and provide background for discussion.
3.00 credit hours. Lecture. CHE.132 (Required, Previous); CHE.340L (Required, Previous or Concurrent).

CHE.340L
Inorganic Chemistry Lab
The occurrence and physical and chemical properties of elements and their compounds are examined with emphasis on periodic relationships. Topics include solubility, acid-base, redox reactions, coordination compounds, and elemental properties. Laboratory exercises illustrate lecture concepts and provide background for discussion.
1.00 credit hours. Laboratory. CHE.132 (Required, Previous); CHE.340 (Required, Previous or Concurrent).

CHE.365
Thermodynamics and Kinetics
Physical chemistry uses concepts and techniques from physics to understand chemistry. In this first semester of a two semester series, students study states of matter, phase changes, laws of thermodynamics, principles of equilibrium, and reaction kinetics and mechanisms. The laboratory portion of the course provides an experimental basis for the topics covered in the lectures.
3.00 credit hours. Lecture. PHY.274 or PHY.284, CHE.132 (Required, Previous); CHE.365L (Required, Previous or Concurrent).

CHE.365L
Thermodynamics and Kinetics Lab
Physical chemistry uses concepts and techniques from physics to understand chemistry. In this first semester of a two semester series, students study states of matter, phase changes, laws of thermodynamics, principles of equilibrium, and reaction kinetics and mechanisms. The laboratory portion of the course provides an experimental basis for the topics covered in the lectures.
1.00 credit hours. Laboratory. CHE.365 (Required, Previous or Concurrent).

CHE.367
Quantum Mechanics and Molecular Structure
This course explores the basic tenets of quantum chemistry and their application to model systems (e.g., particle in a box) and to atomic and molecular systems. Rotational and vibrational spectra and the use of symmetry in quantum chemistry will be covered. The laboratory portion of the course provides an experimental basis for the topics covered in the lectures.
3.00 credit hours. Lecture. CHE.132, PHY.274 or PHY.284 (Required, Previous); CHE.367L (Required, Previous or Concurrent).

CHE.367L
Quantum Mechanics and Molecular Structure Lab
This course explores the basic tenets of quantum chemistry and their application to model systems (e.g., particle in a box) and to atomic and molecular systems. Rotational and vibrational spectra and the use of symmetry in quantum chemistry will be covered. The laboratory portion of the course provides an experimental basis for the topics covered in the lectures.
1.00 credit hours. Laboratory. CHE.132, PHY.274 or PHY.284 (Required, Previous); CHE.367 (Required, Previous or Concurrent).

CHE.410
Undergraduate Chemistry Seminar
Advanced level talks presented by students, faculty members, and guest speakers from other universities and pharmaceutical / biotechnology companies. Students search, read, and present journal articles that are relevant to research topics.
1.00 credit hours. Lecture.

CHE.435
Green Chemistry Sciences
Students will learn various chemistry and chemical engineering skills and apply these skills to the principles and practices of green chemical processing and environmental sustainability. Topics include tools and principles of green chemistry, alternative solvents, green organic chemistry, polymers and catalysts, biotransformation, and sustainable energy.
3.00 credit hours. Lecture. CHE.234L (Required, Previous).

CHE.437
Computational Methods in Chemistry
This course covers the essentials in modern computational chemistry, including methods, concepts, ideas, and computational programs. Students will learn to use simulation package Gaussian09 to carry out theoretical predictions on properties of molecular systems and chemical reactions, and develop a sense about the accuracy and limitations of these calculations. Exercises on literature search and project presentation will also be included.
3.00 credit hours. Lecture. CHE.367 (Required, Previous).

CHE.445L
Experimental Methods in Chemistry
Introduces advanced techniques in chemical synthesis and characterization applicable to organic, inorganic, and organometallic compounds. Students will perform synthetic techniques including working under inert atmosphere and handling moisture-sensitive reagents. Students will perform characterization of compounds using NMR, IR, and UV-VIS spectroscopy.
3.00 credit hours. Laboratory. CHE.234L, CHE.232 (Required, Previous).

CHE.450
Pharmaceutical Chemistry
This course covers drug discovery, design, and development; physiochemical properties of drug molecules; stereochemistry in drug molecules; reactions and mechanisms in drug synthesis; characterization of drug molecules; and drug stability and metabolism. The focus will be on the synthesis of selected marketed small-molecule drugs.
3.00 credit hours. Lecture. CHE.234L (Required, Previous).

CHE.450L
Pharmaceutical Chemistry Lab
Laboratory for Pharmaceutical Chemistry CHE.450.
1.00 credit hours. Laboratory. CHE.450 (Required, Previous or Concurrent).

CHE.470
ST: Characterization of Solids
Special Topics course. In this course, the structure and characterization of solid-state materials will be explored
3.00 credit hours. Lecture. CHE.317 or CHE.717 (Required, Previous)
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CHE.470B
ST: Advanced Laboratory Techniques
Special Topics course. This will be the first in a two-course sequence that introduces advanced techniques in chemical synthesis and characterization applicable to organic, inorganic and organometallic compounds. Students will perform synthetic techniques including working under inert atmosphere and handling moisture-sensitive reagents. Developing methods that could be used for analysis of compounds on the HPLC and GC/MS will be taught. Students will perform characterization of compounds using NMR, IR, MS, HPLC, GC/MS and UV-VIS spectroscopy.
3.00 credit hours. Laboratory. CHE.232, CHE.234L (Required, Previous).

CHE.530
Undergraduate Research Project
Through this course, students become involved in the ongoing faculty research in chemistry. Students learn advanced laboratory techniques in natural products isolation, chemical synthesis, and spectroscopic analysis.
1.00 - 3.00 credit hours. Lecture.

CHE.532
Directed Study
Supervised study in chemistry involving a survey of existing knowledge, self-instructed and/or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Lecture.

CHE.710
Chemistry Seminar
Advanced-level presentations by students, faculty members, and guest speakers from other universities and pharmaceutical and biotechnology companies. Students search, read, and present journal articles that are relevant to research topics. Master's-level students are required to take two consecutive semesters of this seminar for a total of 2 credit hours. During the second semester, students will present the master's thesis.
1.00 credit hours. Lecture. CHE.445L, CHE.880 (Required, Previous or Concurrent).

CHE.711
Chemistry Seminar
Advanced-level presentations by students, faculty members, and guest speakers from other universities and pharmaceutical and biotechnology companies. Students search, read, and present journal articles that are relevant to research topics. Master's-level students are required to take two consecutive semesters of this seminar for a total of 2 credit hours. During the second semester, students will present the master's thesis.
1.00 credit hours. Lecture. CHE.445 (Required, Previous); CHE.880 (Required, Previous or Concurrent).

CHE.714
Spectroscopic Analysis
The acquisition and interpretation of infrared, nuclear magnetic resonance (NMR), and ultraviolet spectra are taught. Students interpret sets of spectral data, including carbon-13 NMR and mass spectra, from unknown compounds to identify the structures of the compounds.
3.00 credit hours. Lecture. CHE.232 (Required, Previous); CHE.714L (Required, Previous or Concurrent).

CHE.714L
Spectroscopic Analysis Lab
The acquisition and interpretation of infrared, nuclear magnetic resonance (NMR), and ultraviolet spectra are taught. Students interpret sets of spectral data, including carbon-13 NMR and mass spectra, from unknown compounds to identify the structures of the compounds.
0.00 credit hours. Laboratory. CHE.232 (Required, Previous); CHE.714 (Required, Previous or Concurrent).

CHE.717
Instrumental Analysis
Covers the fundamentals of instrumental methods of analysis, emphasizing spectroscopic, chromatographic, and surface techniques. Laboratory projects make use of the techniques discussed in lectures.
4.00 credit hours. Lecture. MAT.152, CHE.232, CHE.314, PHY.270 (Required, Previous); CHE.717L (Required, Previous or Concurrent).

CHE.717L
Instrumental Analysis Lab
Covers the fundamentals of instrumental methods of analysis, emphasizing spectroscopic, chromatographic, and surface techniques. Laboratory projects make use of the techniques discussed in lectures.
0.00 credit hours. Laboratory. CHE.717 (Required, Previous or Concurrent).

CHE.731
Advanced Organic Chemistry
This course covers the principles of physical organic chemistry and the application of reaction mechanisms to the design and synthesis of organic structures. The mechanisms of organic reactions and the relationships between reactivity and structure are stressed.
4.00 credit hours. Lecture. CHE.232 (Required, Previous).

CHE.751
Pharmaceutical Chemistry II
In this course, students will explore the methodology used by medicinal chemists in the organic synthesis, purification, and characterization of drugs. Topics include asymmetric synthesis, organometallic chemistry, carbon-carbon bond formation, formation of ring systems, the manipulation of functional groups, and methods of purification and characterization. Process chemistry used for the large-scale synthesis of drugs entering clinical trials will be discussed.
4.00 credit hours. Lecture. CHE.450, CHE.450L (Required, Previous).

CHE.751L
Pharmaceutical Chemistry II Lab
In this course, students will explore the methodology used by medicinal chemists in the organic synthesis, purification, and characterization of drugs. Topics include asymmetric synthesis, organometallic chemistry, carbon-carbon bond

formation, formation of ring systems, the manipulation of functional groups, and methods of purification and characterization. Process chemistry used for the large-scale synthesis of drugs entering clinical trials will be discussed.
0.00 credit hours. Laboratory. CHE.751 (Required, Previous or Concurrent).

CHE.755
Stereochemistry
The concept of stereoisomerism in organic chemistry is systematically studied in simple and complex molecules, with an emphasis on the effects of molecular configuration and conformation on organic reactions.
3.00 credit hours. Lecture. CHE.232 (Required, Previous).

CHE.810
Heterocyclic Chemistry
An introduction to heterocyclic chemistry is presented along rational lines. Nomenclature, methods of synthesis, and chemical properties of various heterocyclic ring systems are discussed.
2.00 credit hours. Lecture. CHE.232 (Required, Previous).

CHE.825
Internship
This course provides students an advanced experience in chemical and/or pharmaceutical research either in an institutional or industrial environment. Students will apply information and techniques acquired in the program to current problems of applied and/or basic research.
9.00 - 12.00 credit hours. Lecture.

CHE.880
Research
Students conduct a research investigation through both literature and bench work in the area of pharmaceutical chemistry. Twelve semester hours are required, which are split over four semesters of the two graduate years. Within this course, students will complete the masters' thesis required for the MS in Pharmaceutical Chemistry degree.
3.00 credit hours. Lecture. CHE.445L (Required, Previous).

CHE.885
Literature-Based Research
This course is for the students in the MS in Pharmaceutical Chemistry program who choose the Literature-based research option. Students will complete a case study thesis, consisting of scholarly non-laboratory research culminating in a written report and presentation on a topic of the student's choosing, all subject to the approval of the student's Graduate Advisory Committee.
3.00 credit hours. Lecture. CHE.710 (Required, Previous or Concurrent).

CHE.895
Graduate Study Extension
Students are expected to remain continuously enrolled each semester, excluding summer semesters, until all requirements for the degree have been completed. Students maintain continuing registration by indicating CHE 895 Graduation Study Extension on the registration form and paying a fee.
0.00 credit hours. Lecture.

Dental Hygiene (DHY)

DHY.201
Introduction to the Dental Hygiene Profession
Students will connect with the Forsyth School of Dental Hygiene as well as the Center for Academic Success and Enrichment to identify and apply strategies to promote academic success as a Dental Hygiene student. They will also be expected to meet with the course coordinators to review the results of LASSI and discuss opportunities for mastering Dental Hygiene education at the professional undergraduate level.
0.00 credit hours. Lecture.

DHY.202
Dental Anatomy, Embryology and Histology
Students study oral histology and embryology, dental anatomy, and tooth development and function. Material covered provides the basic anatomical knowledge required for the clinical component of the dental hygiene program.
2.00 credit hours. Lecture. BIO.110, BIO.210 (Required, Previous).

DHY.204
Anatomical Sciences of the Head and Neck

Students study the anatomy of the head and neck. Material covered provides the basic anatomical knowledge required for the clinical component of the dental hygiene program.
2.00 credit hours. Lecture. BIO.110, BIO.210 (Required, Previous).

DHY.209
Dental Hygiene Process of Care I
This course is the first in a four course series that builds upon basic principles of the dental hygiene process of care and introduces concepts regarding health promotion and disease prevention emphasizing assessment, diagnosis, and treatment planning for patients. The pre-clinic lab portion focuses on development of instrumentation skills using typodonts and student partners.
6.00 credit hours. Lecture.

DHY.209L
Dental Hygiene Pre-Clinical Lab
Introduction to the dental hygiene process of care emphasizing assessment, diagnosis, treatment planning, implementation and evaluation in preparation for direct patient care in a supervised lab setting. Skill development in this lab is introduced in coordination with concepts presented in DHY 209 Dental Hygiene Process of Care I. Instrumentation skills are also learned and developed using typodonts and student partners.
0.00 credit hours. Laboratory. DHY.209 (Required, Previous or Concurrent).

DHY.211
Dental Hygiene Process of Care II
This course is the second in a four course series that builds upon the basic principles of the dental hygiene process of care, introduced in DHY.209 and 209L, and designed to expand student's knowledge of comprehensive oral hygiene care. Patient care considerations pertaining to human growth and development, supplemental care, special needs population and other disorders are emphasized.
3.00 credit hours. Lecture. DHY.202, DHY.204, DHY.209, DHY.230, DHY.231 (Required, Previous).

DHY.223
Clinical Dental Hygiene I
This course is the first in a series of clinical experiences in which students apply integrated multidisciplinary learning in clinical practice. Students will begin to incorporate laboratory skills into a clinical environment. The course will focus on developing clinical competencies to the beginner clinician level.
3.00 credit hours. Lecture. DHY.202, DHY.204, DHY.209, DHY.230, DHY.231 (Required, Previous).

DHY.230
Dental Radiology
Students gain a basic understanding of the fundamentals of dental radiography, including radiation physics, hygiene, and safety. Emphasis is placed on the fundamentals of radiographic technique, the interpretation of radiographs for diagnostic acceptability, and quality assurance. Concurrent lab sessions include exposure of traditional and digital intraoral images on manikins and patients to achieve lab and clinical competence.
3.00 credit hours. Lecture. DHY.230L (Required, Previous or Concurrent).

DHY.230L
Dental Radiology Lab
Students gain a basic understanding of the fundamentals of dental radiography, including radiation physics, hygiene, and safety. Emphasis is placed on the fundamentals of radiographic technique, the interpretation of radiographs for diagnostic acceptability, and quality assurance. Concurrent lab sessions include exposure of traditional and digital intraoral images on manikins and patients to achieve lab and clinical competence.
0.00 credit hours. Laboratory. DHY.230 (Required, Previous or Concurrent).

DHY.231
Dental Materials
This course is a study of the basic properties, selection, manipulation, and clinical management of dental materials. Laboratory/clinic sessions provide students with the opportunity to practice techniques such as pit/fissure sealants, fabricating athletic mouth guards and whitening trays, impression taking, study models, and suture removal.
3.00 credit hours. Lecture. DHY.231L (Required, Previous or Concurrent).

DHY.231L
Dental Materials Lab

This course is a study of the basic properties, selection, manipulation, and clinical management of dental materials. Laboratory/clinic sessions provide students with the opportunity to practice techniques such as pit/fissure sealants, fabricating athletic mouth guards and whitening trays, impression taking, study models, and suture removal.
0.00 credit hours. Laboratory. DHY.231 (Required, Previous or Concurrent).

DHY.232
Nutrition
Based upon the principles of biochemistry, students review the nature and function of micronutrients and macronutrients essential for health. The role of diet/nutrition and its form and frequency, related to general and oral disease prevention and health promotion are studied
2.00 credit hours. Lecture.

DHY.233
Periodontology
This course focuses on the etiology, histopathology, and clinical manifestations of diseases and conditions of the periodontium. Emphasis is placed on the assessment, diagnosis, and clinical management of periodontal diseases, as well as the relationship between systemic health/disease and periodontal health/disease.
3.00 credit hours. Lecture. DHY.202, DHY.204, DHY.209, DHY.209L, DHY.230, DHY.230L (Required, Previous).

DHY.300
Ongoing Clinic Proficiency
Building on skills developed in Preclinic and Clinic I, this course reinforces core clinical and radiographic techniques, maintains instrumentation and assessment proficiency, and promotes evidence-based treatment care planning.
0.00 credit hours. Lecture. DHY.209, DHY.223 (Required, Previous).

DHY.310
Dental Hygiene Process of Care III
Students will examine etiology; systemic and oral manifestations related to medical conditions and illnesses that may require specialized considerations and management related to the process of care. Students apply knowledge from previous courses and explore scientific literature for relevant information to assess risk, management of risk, and linkages between systemic health and oral disease to plan patient-centered treatment.
3.00 credit hours. Lecture. DHY.211, DHY.223 (Required, Previous); DHY.323 (Required, Previous or Concurrent).

DHY.311
Dental Hygiene Process of Care IV
Students apply knowledge of the dental hygiene process of care to explore scientific literature to support evidence-based patient care. Students research medical and psychosocial conditions as they relate to periodontal health and connect them to clinical practice.
2.00 credit hours. Lecture. DHY.310, DHY.323 (Required, Previous).

DHY.323
Clinical Dental Hygiene II
The second in a series of clinical experiences in which students apply integrated multidisciplinary learning in clinical practice. Students will use critical thinking skills to develop and implement dental hygiene care plans based on evidencebased standards of care. Principles of time management, quality assessment and assurance are applied to clinic management and patient care. The course will focus on developing clinical competence to the novice clinician level.
4.00 credit hours. Lecture. DHY.209, DHY.211, DHY.223 (Required, Previous).

DHY.324
Clinical Dental Hygiene III
The last in a series of clinical experiences in which students apply integrated multidisciplinary learning in clinical practice. Students will use critical thinking skills to develop and implement dental hygiene care plans based on evidence-based standards of care. Principles of time management, quality assessment and assurance are applied to clinic management and patient care. The course will focus on developing clinical competence to the entry clinician level.
4.00 credit hours. Lecture. DHY.310, DHY.323 (Required, Previous).

DHY.330
Pathology
This course is a study of basic pathology with emphasis on oral pathology and systemic disease. Diseases of the oral tissues and oral environment are presented with clinical features, histopathology, and treatment modalities.

3.00 credit hours. Lecture. DHY.202, DHY.204, DHY.209 (Required, Previous); DHY.211, DHY.223, DHY.233 (Required, Previous or Concurrent).

DHY.342
Pharmacology
An introductory pharmacology course focusing on commonly used drugs, mechanisms of action, pharmacokinetics, indications and major adverse effects. Pharmacotherapy of cardiovascular, nervous system, gastrointestinal, respiratory, endocrine, infections and malignant conditions, along with the principles of drug administration and dental implications are discussed.
3.00 credit hours. Lecture. DHY.211, DHY.223 (Required, Previous).

DHY.343
Pain Management
Lectures discuss the recognition and management of pain, fear, and anxiety associated with dental treatment. Neurophysiology, pharmacology and local and systemic complications related to the administration of local anesthesia are covered including nitrous oxide sedation. The laboratory covers the clinical application and practice of local anesthesia techniques on student partners. Additional coursework may be required for individual state licensure.
3.00 credit hours. Lecture. DHY.202, DHY.204, DHY.209 (Required, Previous); DHY.343L (Required, Previous or Concurrent).

DHY.343L
Pain Management Lab
A laboratory course that addresses the recognition and management of pain, fear, and anxiety associated with dental treatment. Students learn and practice local anesthesia techniques including field and nerve block anesthesia on student partners applying knowledge and skills obtained from DHY 343. Additional coursework may be required to fulfill specific state licensing and certification requirements.
0.00 credit hours. Laboratory. DHY.202, DHY.204, DHY.209 (Required, Previous); DHY.343 (Required, Previous or Concurrent).

DHY.345
Practice and Career Management
This course focuses on ethical decision making, including principles of professionalism, ethics, jurisprudence, and social responsibility; dental practice management with emphasis on productivity, remuneration, risk management, quality assurance, and team-building skills; and preparation for employment, including licensure requirements, professional résumés, and interviewing techniques.
2.00 credit hours. Lecture. DHY.310, DHY.323, DHY.350 (Required, Previous); DHY.311 (Required, Previous or Concurrent).

DHY.350
Community Oral Health
Course examines topics related to public health, including basic principles of epidemiology, biostatistics, healthcare delivery systems, and methods of financing and quality assessment. Students learn to develop programs in community-based settings, focusing on assessment, planning, implementing, and evaluating community-based oral health programs, along with policy development. Course integrates leadership principles, preparing students to lead and manage community oral health initiatives.
3.00 credit hours. Lecture. DHY.211, DHY.223, DHY.233, DHY.330, DHY.343 (Required, Previous); DHY.310, DHY.323 (Required, Previous or Concurrent).

DHY.420
Oral Health Research
This course introduces dental hygiene students to research fundamentals and evidence-based decision making (EBDM). Students learn to develop research questions, evaluate evidence, and apply findings to clinical decisions. Topics include research design, data analysis, and critical appraisal. Students also outline a research project and choose mentors.
3.00 credit hours. Lecture. DHY.211, DHY.223 (Required, Previous).

DHY.425O
Educational Theories and Methods
Students will explore educational theories as well as didactic and clinical teaching and learning models appropriate for health sciences educational programs. Emphasis will be placed upon learner-centered, active teaching models. The development and use of competency-based student learning outcomes as a guide to instruction will be discussed.
3.00 credit hours. Lecture.

DHY.432
Directed Study
This course gives students an opportunity to explore in depth a subject relevant to their interests.
0.00 - 3.00 credit hours. Lecture.

DHY.442
Evidence Based Dental Hygiene Practice
Critical analysis and application of evidence-based practice to the dental hygiene process of care as it relates to a diverse patient population.
3.00 credit hours. Lecture.

DHY.446O
Oral Health in Special Care Populations
Concepts related to providing oral healthcare for special care populations. Emphasis on the assessment, planning, implementation, and evaluation of care for individuals with transient or lifelong physical, mental health, medical, or social healthcare needs.
3.00 credit hours. Lecture.

DHY.450
Dental Hygiene Board Review
This course provides students with an overview of content areas included in the National Board Dental Hygiene Exam. Students will review theory to patient care in preparation for licensing exams.
0.00 credit hours. Lecture.

DHY.460
Dental Hygiene Capstone
The Dental Hygiene Capstone Course allows students to apply research skills through a project begun in their Oral Health Research course. They conduct in-depth research, complete a literature review, and create a professional poster to present at a capstone event. The course emphasizes critical thinking, problem-solving, and professional communication and presentation skills.
2.00 credit hours. Lecture. DHY.310, DHY.323, DHY.350 (Required, Previous or Concurrent).

DHY.461
Capstone: Leadership in Dental Hygiene II I
In the final professional year, students complete Capstone project that integrates clinical concepts and expertise with principles of leadership acquired throughout the curriculum, to produce a reflection paper and develop a project related to oral health. In part 2 of the Capstone, students finalize their culminating project plan, implement the project, and present their project.
2.00 credit hours. Lecture. DHY.350, DHY.460 (Required, Previous); DHY.311, DHY.324 (Required, Previous or Concurrent).

DHY.475A
Introduction to Dental Hygiene Professsion
This course is designed to prepare Dental Hygiene students for the professional phase of their program and ensure optimal success in the Bachelor's in Dental Hygiene. The course will cover essential Dental Hygiene terminology and concepts, equipping students with the foundational knowledge required for the professional phase of their studies. The course will also evaluate students' awareness and use of learning and study strategies, helping to identify areas for improvement to enhance their academic performance.
0.00 credit hours. Lecture.

DHY.490O
Internship I
This one (1) credit online course introduces students to the concepts, practices, roles and responsibilities associated with an oral health internship (field assignment). Students work with a faculty mentor to select and prepare for an internship from a variety of community field placement sites. Placement opportunities are available in business, public health, research, government and education.
1.00 credit hours. Lecture. DHY.350 (Required, Previous).

DHY.685
Directed Study for Dental Hygiene

This course is organized as an individual study and directed by a faculty member from the School of Dental Hygiene. Student learning involves self-instruction and/or faculty-assisted instruction using existing or previously known knowledge. Prerequisite: Approval of DHY faculty member and School Dean, variable credit of 1-3 credits.
1.00 - 3.00 credit hours. Lecture.

DHY.701
Essentials of Public Health
Overview of the history, philosophy, and scope of public health and an orientation to core public health functions. Incorporates the foundation for understanding population health, including the organization, financing, and delivery of healthcare services; health policy; and public health ethics. Emphasizes the scientific method as a basis for community health practice, program planning and evaluation, health policy, and research.
3.00 credit hours. Lecture.

DHY.703
Program Planning and Evaluation
Develops the comprehension of and ability to conduct a community assessment and to design, develop, implement, and evaluate strategies to improve individual and community health. Employs problem-based learning to create project work plans, logic models, logical frameworks, and budgets.
3.00 credit hours. Lecture. DHY.701 (Recommended, Previous).

DHY.706
Health Education and Health Behavior
Surveys the theoretical basis for social, behavioral, psychological, and environmental determinants of individual and population health. Addresses health disparities; social inequalities; and cultural, gender, and economic issues in oral healthcare.
3.00 credit hours. Lecture.

DHY.714
Research Methodology and Statistics
Students will learn fundamental biostatistical and study design concepts routinely used in epidemiologic and clinical research, with a special emphasis on oral health research. Concepts will be reinforced through critical evaluation of peer-reviewed oral health research. Furthermore, basic data management and statistical software tools will be discussed.
3.00 credit hours. Lecture.

DHY.715
Epidemiology
Study of patterns of disease and injury in the population. Acquaints student with epidemiologic methods, including measures of disease frequency and association, data collection systems, surveillance and monitoring, study designs, sampling, control of bias and confounding, and principles of disease screening.
3.00 credit hours. Lecture. DHY.714 (Required, Previous).

DHY.722
Health Policy and Finance
Covers key concepts in the formulation and implementation of health policy with emphasis on delivery, quality, and finance of healthcare for individuals and populations. Explores current health policy issues to develop policy analysis and advocacy skills.
3.00 credit hours. Lecture. DHY.701 (Required, Previous).

DHY.751
Adult Learning Theory and Clinical Teaching for Oral Health Professions Education
Overview of adult learning theory with emphasis on linking theory to practice in dental hygiene educational settings. Addresses the transition from clinician to educator and the role of the clinical educator in the development and facilitation of learning activities to meet the needs of a diverse student population.
3.00 credit hours. Lecture.

DHY.753
Curriculum and Course Design for Health Professions Education
Emphasizes application of adult learning theory and best practices in student-centered learning as they apply to development of curricular frameworks, outcomes, and competencies along with course design.
3.00 credit hours. Lecture.

DHY.755
Health Professions Education Practicum
Individualized experience to apply principles and theories in oral health professions education to practice. Advance approval and arrangements are required.
3.00 credit hours. Lecture. DHY.751, DHY.753 (Required, Previous).

DHY.827
Administration and Management
Provides essential knowledge, skills, and values needed to manage an organization, including strategic planning, financial administration, personnel management, marketing, legislative and regulatory priorities, and communications. Overview of management, leadership, and organizational theories.
3.00 credit hours. Lecture.

DHY.830
Evidence-Based Literature Review
This course will guide the student through identification of a problem and development of a research question to focus a literature search. Students will conduct a literature search with critical review of the literature followed by writing a concise synthesis of their topic. Upon completion of the course, students will have a completed draft of a literature review.
3.00 credit hours. Lecture. DHY.714 (Required, Previous).

DHY.831
Research Design and Proposal Development
This course will introduce qualitative, quantitative, and mixed methods research design and analysis. In addition, students will apply concepts of human subjects' protection in the development of a research proposal. Upon completion of the course, students will have a completed a research proposal.
3.00 credit hours. Lecture. DHY.714, DHY.830 (Required, Previous).

DHY.832
Data Analysis and Manuscript Preparation
The student will implement an oral health, dental hygiene science, or education project developed in DHY831 and conduct qualitative and/or quantitative analysis of the data collected. Upon completion of the course, students will have a publishable manuscript and conduct an oral presentation of a scholarly project.
3.00 credit hours. Lecture. DHY.714, DHY.830, DHY.831 (Required, Previous).

DHY.835
Public Health Practicum
Individualized public health experience designed to apply curriculum content to practice. Advance approval and arrangements are required.
3.00 credit hours. Lecture. DHY.701, DHY.703, DHY.706, DHY.714, DHY.722 (Required, Previous).

DHY.840
Advanced Dental Hygiene Practice
The course will focus on a broad view of alternative practice settings for dental hygienists with attention to scope of practice for oral health professionals with expanded functions. An introduction to alternative practice models including program development, business planning, risk management, and legislative advocacy.
3.00 credit hours. Lecture.

DHY.895
Graduate Extension of Thesis
All degree students are expected to remain continuously enrolled each semester, until thesis requirement for the degree has been completed.
0.00 credit hours. Lecture.

Diagnostic Medical Sonography (DMS)

DMS.200
Introduction to Diagnostic Medical Sonography
An introduction to the profession of diagnostic medical sonography and the role of the sonographer. Students will learn sonographic terminology, communication, and professionalism in the clinical setting, and will examine the history of ultrasound, accreditation, professional organizations, and registry significance.
2.00 credit hours. Lecture. LIB.220 (Required, Previous).

DMS.202
OB/GYN Sonography I
The first in a two course series covering normal obstetric and gynecologic sonographic imaging. Students will learn embryology, anatomy, and physiology of the reproductive system. Students will learn the normal growth and development of the fetus, associated obstetric structures and maternal anatomy.
3.00 credit hours. Lecture. BIO.210, BIO.210L (Required, Previous).

DMS.203
Abdominal Sonography
This course will cover didactic information regarding normal anatomy and physiology, lab values as well as pathology of abdominal, organs, abdominal vasculature and superficial organs. Students will correlate both normal anatomy and pathology of these organs/organ systems, to their ultrasound appearance. Critical thinking exercises will be included in the course, which will encompass patient presentation, sonographic findings and differential diagnoses.
6.00 credit hours. Lecture. BIO.210, BIO.210L (Required, Previous); DMS.204L or DMS.213 (Required, Previous or Concurrent).

DMS.204L
Sonography Laboratory Procedures I
This lab course offers beginning hands-on and experiential learning in the basics of selected sonography protocols: abdomen, pelvis, and individual organs / blood vessels. Under supervision of faculty / clinical coordinator, students will apply the didactic information and integration to practical lab techniques. Cross-sectional anatomy of these structures and their appearance on the sonogram also will be emphasized.
4.00 credit hours. Laboratory. BIO.210, BIO.210L (Required, Previous).

DMS.205
Breast Sonography
Students learn the principles and fundamentals of breast sonography. Exploration of the physics of sonography as it relates to normal and abnormal breast tissue and anatomy. Correlation with other imaging modalities and surgical techniques in breast pathology is stressed and correlated with sonomammography and breast implants.
3.00 credit hours. Lecture. DMS.204L (Required, Previous).

DMS.206
Abdominal Sonography I
The first course in a two-course series covering sonographic imaging of the abdomen. Students will learn embryology, anatomy, and physiology related to the abdominal organs, abdominal vasculature, and superficial organs. Students will correlate normal sonographic characteristics of the various organs.
3.00 credit hours. Lecture. BIO 210, BIO.210L (Required, Previous).

DMS.208
Sonographic Physics and Instruments I
Students will apply the principles of sound, sound propagation, pulse echo instrumentation, image formation, transducers, and system operation for accurate interpretation of sonographic information and image methodology. The integration of these theories and abstract principles with their practice in clinical applications will be emphasized.
3.00 credit hours. Lecture. MAT.141, MAT.261 (Required, Previous).

DMS.212
OB/GYN Sonography II
The second course in a two-course series covering obstetric sonographic imaging. Students will learn the normal and abnormal development and growth of the fetus and maternal obstetric structures in the second and third trimesters. This course will also cover the pathophysiology of fetal abnormalities, anomalies, and chromosomal syndromes detected in utero. Post-partum sonography and sonographic assisted procedures will be included.
3.00 credit hours. Lecture. DMS.202 (Required, Previous).

DMS.213
Scanning Techniques Sonography
Students will receive hands-on, experiential learning. The students learn to use the imaging equipment controls, transducer position relative to the anatomy to be scanned and scanning techniques for selected protocols. Under supervision of faculty/clinical coordinator, students will apply the didactic information they have learned into practical lab techniques to complete general sonography protocols.
4.00 credit hours. Lecture.

DMS.214L

Sonography Laboratory Procedures II
This course provides a comprehensive overview of the normal and pathological processes of the abdomen, thyroid, and transabdominal uterus and ovaries and allows students to examine their appearance on ultrasound. Requires mastering the sonography protocols.
4.00 credit hours. Laboratory. DMS.204L (Required, Previous).

DMS.216
Abdominal Sonography II
The second course in a two-course series covering sonographic imaging of the abdomen. Students will learn pathophysiology of the abdominal organs, abdominal vasculature, and superficial organs. Students will correlate clinical findings with sonographic presentations to identify pathology of the abdomen and superficial organs.
3.00 credit hours. Lecture. DMS.206 (Required, Previous).

DMS.218
Sonographic Physics and Instruments II
This course continues exploring the theoretical and abstract principles that form the technological basis of diagnostic medical sonography. Topics will include Doppler physics and instrumentation, artifacts, quality assurance, and hemodynamics. Physics applications and collaborative learning will be highly emphasized.
3.00 credit hours. Lecture. DMS.208 (Required, Previous).

DMS.223
Obstetric and Gynecologic Sonography
Students will learn about the normal and abnormal female pelvis, including tumors, pelvic inflammatory diseases, and congenital pelvic pathology. Applications and scanning methods of obstetrical sonography as it pertains to the fetus and the mother will be discussed. Pathology associated with pregnancy will be explored in addition to the application of sonography in the diagnosis and treatment of infertility.
6.00 credit hours. Lecture. DMS.203 (Required, Previous); DMS.214L or DMS.233L (Required, Concurrent).

DMS.224L
Sonography Laboratory Procedures III
This course will offer multiple simulation exercises that will allow students to apply their knowledge and practical skills gained in previous coursework. Emphasis will be on correlation between clinical signs/symptoms and ultrasound findings, as well as patient interaction. Advanced scanning protocols and new technologies will also be discussed.
1.00 credit hours. Laboratory. DMS.214 (Required, Previous).

DMS.225
Echocardiography I
This course introduces the student to the cardiovascular system, anatomical structure, electrocardiography, and hemodynamics. In addition, an introduction to 2-dimensional imaging, including heart structure, measurements, and physiology as seen by echocardiography, will be discussed.
5.00 credit hours. Lecture.

DMS.225L
Echocardiography Lab I
This lab course provides hands-on learning. The student becomes familiar with imaging equipment controls, transducer positions relative to anatomy, scanning techniques for a complete transthoracic protocol and the utilization of the nonimaging CW transducer. Under supervision, students will apply didactic information to practical lab techniques in echocardiography. The sonographic appearance of cardiac anatomy and function will be emphasized with hemodynamics.
4.00 credit hours. Laboratory.

DMS.230L
Cardiovascular Laboratory Procedures III
This course will offer multiple simulation exercises that will allow students to apply their knowledge and improve practical skills gained in previous coursework. Emphasis will be on correlation between clinical signs/symptoms and ultrasound findings, as well as patient interaction. Advanced scanning techniques and stress echocardiography will also be discussed.
1.00 credit hours. Laboratory. DMS.217, DMS.219, DMS.220L (Required, Previous).

DMS.232
Introduction to Clinical Sonography

This is an introductory course designed to acclimate students to the clinical setting. Throughout the semester, students will be observing and interacting with patients and members of the healthcare team in a clinical setting. experiential 8 hr/wk ; 1 credit
1.00 credit hours. Clinical. DMS.200, DMS.208, DMS.213 (Required, Previous); DMS.233L (Required, Concurrent).

DMS.233L
Advanced Scanning Techniques Sonography
Students will receive hands-on, experimental learning. Students will build upon skills learned in DMS 213 strengthen their skills, accuracy, and image optimization in preparation for clinical rotations. Under supervision of faculty/clinical coordinator, students will apply the didactic information they have learned into practical lab techniques in the general sonography protocols: abdomen complete, renal, aorta, pelvic, and thyroid.
3.00 credit hours. Laboratory. DMS.213 (Required, Previous).

DMS.235
Cardiac Ultrasound I: Cardiovascular Principles
This course includes the basic principles of cardiovascular anatomy and physiology, embryology, electrophysiology, O2 saturation, pharmacology and hemodynamics. The student will learn the complexities of the cardiac cycle including, heart rhythms, cardiac mechanics, event timing, along with intracardiac pressures. In addition, an introduction to normal heart structure and measurements as seen by echocardiography will be discussed.
3.00 credit hours. Lecture. BIO.210, BIO.210L (Required, Previous); DMS.208, DMS.236L (Required, Previous or Concurrent).

DMS.236L
Cardiac Ultrasound Imaging Lab I
This course is an introduction to the adult transthoracic protocol, measurements and imaging as seen by two-dimensional (2D) echocardiography. The student will become familiar with ultrasound imaging planes used in the diagnosis of disease. In addition, the student will learn how to optimize 2D imaging, equipment controls, and transducer positioning. Psychomotor skills will be applied in the cardiac imaging laboratory.
4.00 credit hours. Laboratory. DMS.235 (Required, Previous or Concurrent).

DMS.245
Cardiac Ultrasound II: Introduction to Heart Disease
This course is the continuation of Cardiac Ultrasound I with focus on an introduction of various diseases encountered during echocardiography. Topics include 2D, Doppler and hemodynamic measurements of cardiomyopathies, heart function, coronary artery disease, valve stenosis, and arterial hypertension. Theory, techniques and concepts used to assess heart disease will be implemented in the cardiac imaging laboratory.
4.00 credit hours. Lecture. DMS.208, DMS.235 (Required, Previous); DMS.246L (Required, Previous or Concurrent).

DMS.246L
Cardiac Ultrasound Imaging Lab II
This course is a continuation of Cardiac Ultrasound Imaging Lab I with emphasis on optimization of the adult transthoracic protocol and imaging seen by 2D echocardiography. In addition, the student will be introduced to the application of various Doppler imaging techniques used for the assessment of valvular disease and hemodynamics. Psychomotor skills will be applied in the cardiac imaging laboratory.
5.00 credit hours. Laboratory. DMS.236L (Required, Previous); DMS.245 (Required, Previous or Concurrent).

DMS.250
Selected Topics Sonography
Students will learn the normal anatomy and physiology, pathophysiology, vasculature, and the sonographic appearance of selected organs and organ systems. These topics will be determined by the faculty and will include vascular, pediatrics, breast and MSK sonography.
3.00 credit hours. Lecture.

DMS.260
Echocardiography and Congenital Heart Disease
This course covers pathophysiology and ultrasound appearances of complex congenital heart defects as presented in adult populations. Students will learn how to evaluate patients with arterial and/or ventricular septal defects as well as transposition of the great arteries. Students will then progress to assessment of other congenital anomalies such as Tetralogy of Fallot, Eisenmenger's Syndrome, Cor Triatriatum, and Ebstein's Anomaly.
3.00 credit hours. Lecture. DMS.225 (Required, Previous).

DMS.265

Echocardiography II Sonography
This course covers pathophysiology of heart disease and the role of ultrasound, including stress echocardiograms and fast scans performed in the emergency room. Topics will include calculation of valve area with degree of regurgitation and evaluation of systolic function. Ultrasound findings associated with multiple cardiac abnormalities, including cardiac tumors will be discussed.
3.00 credit hours. Lecture. DMS.225 (Required, Previous).

DMS.266L
Echocardiography II Lab Sonography
This course is a hands-on laboratory procedure course designed to promote mastery of the basics learned in DMS 225L and introduction to the more advanced concepts in transthoracic echocardiography. This course will prepare the student for their clinical education rotation. Students will work on mastering image quality, the speed of their exams and accuracy of measurements.
4.00 credit hours. Laboratory. DMS.225L (Required, Previous).

DMS.302C
General Clinical Sonography I
Consecutive clinical sonography courses are an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to general, vascular, gynecological, and/or obstetrical sonography specialties. Students must achieve specific levels of clinical competence before advancing to the next clinical course. Emphasis will also be on professional interaction and patient care.
8.00 credit hours. Clinical. DMS.224L (Required, Previous); DMS.310 (Required, Previous or Concurrent).

DMS.304
Problem Solving in Physics and Instruments
This course is the cumulative physics preparation for the ARDMS credentialing board examination. This course involves interactive applications of physics and instrumentation of the ultrasound equipment. Theory and application of ultrasound physics principles and Doppler are included. Students will review through directed group activities. Students will participate in interactive mock examinations as preparation for the ARDMS examination.
3.00 credit hours. Lecture.

DMS.305
Adult Congenital Heart Disease Cardiac Ultrasound III: Pediatric and
This course is the continuation of Cardiac Ultrasound II with emphasis on the assessment and measurement of patients with congenital heart disease (CHD). Topics include a review of cardiac embryologic formation of the heart, cyanotic heart disease and other cardiac defects. A wide variety of complex lesions including palliative procedures related to the repair of CHD will also be discussed.
3.00 credit hours. Lecture. DMS.218, DMS.245, DMS.246L (Required, Previous); DMS.307L (Required, Previous or Concurrent).

DMS.306C
Cardiovascular Clinical Sonography I
The first of three consecutive clinical courses providing an internship of supervised practicum hours. The student utilizes knowledge and skills relevant to adult and pediatric echocardiography, as well as vascular sonography, learned in classes and labs and builds upon that knowledge and skillset in the clinical setting. Specific levels of clinical proficiency before advancing to the next clinical course.
8.00 credit hours. Lecture. DMS.217, DMS.219, DMS.220L (Required, Previous).

DMS.307L
Cardiac Ultrasound Imaging Lab III
This course is a continuation of Cardiac Ultrasound Imaging Lab II with an introduction to the transthoracic protocol, measurements and imaging in pediatric echocardiography. The student will become familiar with ultrasound imaging planes, measurements and Doppler techniques used in the diagnosis of patients with suspected CHD. Both pediatric and adult transthoracic scanning protocols will be reinforced throughout this course.
2.00 credit hours. Laboratory. DMS.246L (Required, Previous); DMS.305 (Required, Previous or Concurrent).

DMS.310
Critical Thinking in Sonography I
Based on a critical thinking model developed for student sonographers, this the first of two courses that offers the opportunity to integrate the academic and technical concepts of diagnostic medical sonography, through interpretation and critique of normal and abnormal anatomy with correlation of didactic, clinical and image information. Emphasis is

on communication skills via written and oral case presentations and critiques on general sonography applications. Prerequisites: DMS 203; DMS 223
2.00 credit hours. Lecture. DMS.302C (Required, Previous or Concurrent).

DMS.312C
General Clinical Sonography II
This is the second of three consecutive clinical sonography courses providing an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to general, vascular, gynecological, and/or obstetrical sonography specialties. Students must demonstrate increasing proficiency of required ultrasound procedures that will allow them to achieve competency levels in the subsequent clinical course.
8.00 credit hours. Clinical. DMS.302C (Required, Previous).

DMS.315
Pediatric Sonography
Pediatric Sonography provides sonography students with specialized imaging procedures for the pediatric patient. Topics in pediatric sonography include embryology, anatomy and normal variants, function and physiology, indications for examination, sonographic imaging (including techniques and protocols), pathology and pathophysiology. Prerequisites DMS 203, 223.
3.00 credit hours. Lecture.

DMS.320
Introduction to Vascular Sonography
This course studies the uses of sonography in the diagnosis of vascular disease. Students will learn vascular anatomy and pathophysiology to include cerebrovascular, upper and lower extremity venous and arterial. Routine vascular protocols will be introduced. Indications, patient history, physical examinations, imaging techniques, and vascular pathology will be covered in depth. Prerequisites: DMS 218 , DMS 214L or DMS 246L.
5.00 credit hours. Lecture. DMS.218, DMS.214L or DMS.246L (Required, Previous).

DMS.320L
Introduction to Vascular Sonography Lab
This course studies the uses of sonography in the diagnosis of vascular disease. Students will learn vascular anatomy and pathophysiology to include cerebrovascular, upper and lower extremity venous and arterial. Routine vascular protocols will be introduced. Indications, patient history, physical examinations, imaging techniques, and vascular pathology will be covered in depth.
0.00 credit hours. Laboratory. DMS.218 or DMS 214L or DMS.246L (Required, Previous).

DMS.325
Cardiac Ultrasound IV: Advanced Echocardiography
This course is the continuation of Cardiac Ultrasound III with emphasis on advanced echocardiography techniques and procedures used in the treatment of various cardiac diseases. Topics include quantitative assessment of cardiomyopathies, strain imaging, 3D imaging, transesophageal imaging, pericardial disease, valve replacement, and heart tumors. In addition, assessment of advanced procedures encountered in catheterization and electrophysiology lab will be discussed.
3.00 credit hours. Lecture. DMS.304, DMS.305 (Required, Previous); DMS.330C (Required, Previous or Concurrent).

DMS.330C
Cardiac Ultrasound Practicum I
This is the first of three clinical rotations allowing the student to apply the cognitive, affective and psychomotor skills learned in the program. The student will begin to perform echocardiography under supervision, assisting in the diagnosis of heart disease. The student must achieve specific levels of exam proficiency before advancing to the next practicum.
8.00 credit hours. Lecture. DMS.307L, DMS.320 (Required, Previous); DMS.325 (Required, Previous or Concurrent).

DMS.340
Sonography Internship I
This is the first course of two clinical sonography courses providing an internship of supervised clinical practicum hours. Students acquire the knowledge and skills relevant to abdominal/small parts, obstetrical and gynecological sonography. Student must achieve specific levels of clinical proficiency before advancing to the next semester. Students are required to complete 32 hours/week of clinical practicum hours, requiring fulltime status.
8.00 credit hours. Clinical. DMS.232 (Required, Previous).

DMS.350

Echocardiography Internship I
This is the first course of two consecutive clinical sonography courses providing an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to adult echo sonography specialties. Students must achieve specific levels of clinical proficiency before advancing to the next clinical course.
8.00 credit hours. Lecture. DMS.265, DMS.266L (Required, Previous).

DMS.355
Advanced Echocardiography
This course is a continuation of the topics covered in Echocardiography II that includes complex cardiovascular pathophysiology. In addition, advanced imaging techniques, as well as 2-dimensional myocardial strain, exercise echocardiography, 3-dimensional imaging, and transesophageal echocardiography, will be discussed.
3.00 credit hours. Lecture. DMS.265 (Required, Previous).

DMS.401
Cardiac Ultrasound V: Critical Thinking In Echocardiography
Critical thinking in echocardiography is required by the cardiac sonographer to assist the physician in the diagnosis of heart disease. This course is the continuation of Cardiac Ultrasound IV with emphasis on applying the cognitive skills necessary for the diagnosis of various cardiac diseases. Basic and advanced echocardiography cases will be reviewed along with comprehensive interpretation.
4.00 credit hours. Lecture. DMS.325 (Required, Previous); DMS.415C (Required, Previous or Concurrent).

DMS.408
Advanced Doppler
Students learn advanced Doppler color flow; power angio; spectral analysis; and basic protocols for carotid artery, duplex evaluation of the upper and lower extremities, upper and lower extremity venous Doppler protocols, and vein mapping.
1.00 credit hours. Lecture.

DMS.410
Critical Thinking in Sonography II
This course will include interpretation and critique of normal and abnormal anatomy with correlation of didactic, clinical and image information using written and oral case presentations There will be an emphasis on abdominal, OB/GYN, pediatric, vascular, musculoskeletal and general sonography applications. Discussion and summarization of pertinent journal articles are included. The student will complete a capstone project.
2.00 credit hours. Lecture. DMS.310 (Required, Previous); Corequisite: DMS.312C (Required, Previous or Concurrent).

DMS.412C
General Clinical Sonography III
This is the final clinical course of three consecutive clinical sonography courses providing an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to general, vascular, gynecological, and/or obstetrical sonography specialties. Students must demonstrate entry-level competency in mandatory ultrasound specialties.
8.00 credit hours. Clinical. DMS.312C (Required, Previous).

DMS.415C
Cardiac Ultrasound Practicum II
This is the second of three consecutive clinical rotations allowing the students to advance their skills in the application of echocardiography. The student will continue to perform echocardiography under supervision. The student must achieve specific levels of exam proficiency before advancing to the next practicum.
8.00 credit hours. Clinical. DMS.330C (Required, Previous); DMS.401 (Required, Previous or Concurrent).

DMS.420
Musculoskeletal Sonography
This course will explore the use of ultrasound to evaluate the musculoskeletal system. Students will examine relevant anatomy and pathology, sonographic appearance, scanning techniques and protocols for ultrasound diagnoses associated with the shoulder, elbow, hand/wrist, knee, and foot/ankle conditions.
3.00 credit hours. Lecture. DMS.224L, DMS.304 (Required, Previous).

DMS.425C
Cardiac Ultrasound Practicum III

This is the last of three consecutive clinical rotations, that focuses on final preparation of the student to perform echocardiography under minimal supervision or independently. Ongoing competencies will be performed to demonstrate the minimum skills needed to become an entry-level cardiac sonographer. As a requirement for graduation, students must achieve clinical competency in all modalities utilized in adult echocardiography.
8.00 credit hours. Clinical. DMS.401, DMS.415C (Required, Previous); DMS.431 (Required, Previous or Concurrent).

DMS.426C
Cardiovascular Clinical Sonography III
Consecutive clinical sonography courses are an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to adult, fetal, and pediatric echocardiology and vascular sonography. Students must achieve specific levels of clinical competence before advancing to the next clinical course. With emphasis on performing proficiency and competency with minimal supervision.
8.00 credit hours. Clinical.

DMS.430C
Sonography Internship II Medical Sonography
This is the final course clinical sonography course providing an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to abdominal, and obstetrical and gynecological sonography specialties. As a requirement for graduation, students must achieve clinical competency on all mandatory ultrasound procedures. Student may include clinical competencies from previous clinical rotation.
10.00 credit hours. Clinical. DMS.340 (Required, Previous).

DMS.431
Cardiac Ultrasound Registry Review Sonography
This course focuses on preparation for the CCI/ARDMS credentialing board examinations in echocardiography. A systematic review of the American Society of Echocardiography's national curriculum model for adult and pediatric ultrasound will be discussed. In addition, student will participate in discussions utilizing critical thinking and problem solving skills, along with performing mock registry examinations.
3.00 credit hours. Lecture. DMS.415C (Recommended, Previous); DMS.425C (Required, Concurrent).

DMS.440
Advanced Problem Solving in Sonography Medical Sonography
This comprehensive course is designed as a review of the principles and practices of diagnostic medical sonography in the abdominal and OB/GYN specialties. The course includes problem-solving and self-assessment techniques to embed knowledge and skills, identify the students' weak areas and provide guidelines for independent study to resolve those weaknesses.
2.00 credit hours. Lecture. DMS.410 (Required, Previous); DMS.412C (Required, Previous or Concurrent).

DMS.441
Advanced Problem Solving in Echocardiography
This comprehensive course will review the basic principles of echocardiography including but not limited to, cardiac anatomy and pathophysiology, valvular heart disease, cardiomyopathies, pericardial disease, cardiac tumors and adult congenital heart disease. The course will include problem solving and self-assessment techniques to embed knowledge, identify the students' weak areas, and provide guidelines for independent study to resolve those weaknesses.
2.00 credit hours. Lecture. DMS.316C, DMS.410 (Required, Previous).

DMS.443
Advanced Problem Solving in Vascular Sonography
This course is designed as a review of the principles and practices of vascular sonography. The course includes problem solving and self-assessment techniques to embed knowledge and skills, identify the students' weak areas, and provide guidelines for independent study to resolve those weaknesses.
1.00 credit hours. Lecture. DMS.320 (Required, Previous).

DMS.446
Cardiac Ultrasound Capstone I Sonography
This course introduces the student to the writing process, techniques, formatting, and research required for the presentation of the final project in the Capstone II course. Additional material to be covered includes review of case studies, abstracts, and peer-reviewed manuscripts.
1.00 credit hours. Lecture. DMS.330C (Required, Previous); DMS.415C (Required, Concurrent).

DMS.447

Sonographic Analysis Medical Sonography
Sonographic Analysis facilitates critical thinking providing the student the skills to integrate technological concepts of diagnostic medical sonography with application in clinical situations. The critique and analysis will include; image identification, orientation, production and quality, critical reasoning skills utilized in interpretation and examination performance, and the overall significance the acquired sonographic information plays in the management of patient care.
3.00 credit hours. Lecture. DMS.340 (Required, Previous or Concurrent).

DMS.452
Echocardiography Analysis Medical Sonography
This course introduces critical thinking techniques to integrate technological concepts of echocardiography with practical application in clinically pertinent situations. Critique and analysis will include: Image identification, orientation, production and quality, critical reasoning skills utilized in interpretation and examination performance and, the significance of the sonographer's role in acquiring information and how it relates to the management of patient care.
3.00 credit hours. Lecture. DMS.350, DMS.355 (Required, Previous).

DMS.455C
Echocardiography Internship II Medical Sonography
This is the final course in clinical echocardiography courses providing an internship of supervised clinical practicum hours in which the student acquires the knowledge and skills relevant to adult echocardiography. As a requirement for graduation, students must achieve clinical competency in all modalities utilized with adult echocardiography. Student may include clinical competencies from previous clinical rotations.
10.00 credit hours. Clinical. DMS.350 (Required, Previous).

DMS.456
Cardiac Ultrasound Capstone II Sonography
This course is a continuum of Cardiac Ultrasound Capstone I, which allows the student to reflect on the experience throughout the program. The student will provide a presentation based on the information accumulated in Capstone I. The student is encouraged to publish the final analysis in peer-reviewed journal related to Echocardiography.
1.00 credit hours. Lecture. DMS.446 (Required, Previous); DMS.425C (Required, Concurrent).

DMS.460
Seminar in Sonography Medical Sonography
This course is the cumulative preparation for the ARDMS credentialing board examinations in abdominal sonography and OB/GYN sonography. Review of anatomy, physiology, patient care, clinical signs and symptoms, correlation with other diagnostic testing and sonographic presentation of normal, abnormal variants and pathologies. Student will participate in discussions utilizing critical thinking and problem solving skills and mock examinations.
2.00 credit hours. Lecture. DMS.340 (Required, Previous); DMS.430C (Required, Previous or Concurrent).

DMS.465
Seminar in Echocardiography Medical Sonography
This course is the cumulative preparation for the ARDMS credentialing board examinations in adult echocardiography. Review of anatomy, physiology, patient care, clinical signs and symptoms, correlation with other diagnostic testing and sonographic presentation of normal, abnormal variants and pathologies. Student will participate in discussions utilizing critical thinking and problem solving skills and mock examinations.
2.00 credit hours. Lecture. DMS.350, DMS.355 (Required, Previous).

DMS.525
Directed Study in General Sonography
This course will offer the student a comprehensive review of topics that were covered in Abdominal Sonography and Obstetrics and Gynecology Sonography as needed for remediation in these topics.
2.00 credit hours. Lecture.

DMS.550
Directed Study in Sonographic Physics and Instrumentation
This is a self-directed study to reinforce concepts and principles of sonographic physics and instrumentation. Students will apply the principles of sound, sound propagation, transducers, and system operation for accurate interpretation of sonographic information and image methodology. The integration of these theories and abstract principles with their practice clinical applications will be emphasized.
1.00 credit hours. Lecture.

DMS.555

Directed Study General Lab Physics and Instrumentation
This self-directed remediation course will allow the student additional hands-on scanning opportunities, as well as one on one professor interaction, in order to develop the skills to allow them to be successful in the program and clinical setting.
1.00 credit hours. Lecture.

Regulatory Affairs and Health Policy (DRA)

DRA.732
Regulatory Affairs Directed Study
Supervised study in regulatory affairs involving a survey of existing knowledge, self-instructed and/or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Lecture.

DRA.802
Law and Health Policy of Drugs and Devices
A study of the legal principles governing the commercial use of drugs and devices, including contract, tort, intellectual property, and regulatory law. Policy decisions and risk allocations from the legal, social, ethical, and economic perspectives are emphasized.
3.00 credit hours. Lecture.

DRA.804
FDA and Regulatory Affairs
Examines the pertinent aspects of the Federal Food, Drug, and Cosmetic Act as it applies to human drug and device development and manufacturing. Special consideration is given to the drug approval process, CGMPs, and corresponding documentation requirements.
3.00 credit hours. Lecture.

DRA.807
Statistics in Clinical Research: Interpretation and Application
Emphasizes the interpretation and application of common statistical procedures found in clinical research. Topics include experimental design, sampling, descriptive statistics, estimation, hypothesis testing, p-values, power, analysis of variance, correlation, regression, nonparametric statistics, and analysis of survey data. The use of statistical software for analyzing clinical patient data also is discussed.
3.00 credit hours. Lecture.

DRA.808
Protection of Human Research Subject
Focuses on the principal ethical and regulatory concepts that formally govern the use of human subjects in biomedical and behavioral research: subjects' informed consent, researcher-physician conflicting interests, confidentiality, the use of deception/placebos in research, vulnerable research subjects, research in emergency settings, the question of the obligation to participate in biomedical research, scientific misconduct, and risks to research.
3.00 credit hours. Lecture.

DRA.809
Health Epidemiology
Introduces students to the basic concepts and principles of epidemiology as they relate to healthcare. Students learn the basic skills needed to critically evaluate epidemiological literature and apply these data to healthcare decision making.
3.00 credit hours. Lecture.

DRA.811
Health Policy Development and Analysis
Examines the roles of the federal government and the private sector in developing healthcare policy and drug regulatory policy in a social, political, and economic context. Focuses on healthcare reform, pharmaceutical research, and systems of financing healthcare.
3.00 credit hours. Lecture.

DRA.812
Advanced Topics in Regulatory Affairs:
Examines advanced, specific areas of regulatory affairs with special emphasis on in-depth analysis of emerging issues in agency developments, interagency agreements, and international conferences. A single course coordinator facilitates discussion among students and invited lecturers to explore the depth and breadth of their respective fields.

3.00 credit hours. Lecture. DRA.804 (Required, Previous).

DRA.814
Data Analysis and Presentation Capabilities in Regulatory Affairs
This course is designed for students to conduct a research capstone project pertinent to professional interests. Students will practice research skills and demonstrate the process of scientific writing of a manuscript suitable for submission to a peer-reviewed journal. By the end of this course, students will present an abstract, paper, and poster. Additionally, students will present findings to MCPHS University faculty, peers, and staff, and community partners.
3.00 credit hours. Lecture.

DRA.815
International Regulatory Affairs
Examines international regulations governing medical product development and commercialization.
3.00 credit hours. Lecture. DRA.804 (Recommended, Previous or Concurrent).

DRA.816
Principles of Quality Assurance and Quality Control
Examines all aspects of quality assurance and quality control, including current good manufacturing practices (CGMPS), as they apply to the development and commercialization of medical products.
3.00 credit hours. Lecture. DRA.804 (Required, Previous).

DRA.817
Development and Production of Medical Devices
Examines all aspects of development and commercialization of medical devices, including the quality system regulations (QSRs).
3.00 credit hours. Lecture. DRA.804 (Required, Previous).

DRA.818
The Law of Healthcare Compliance
Students will learn the foundational principles of the law underlying Healthcare Compliance and be able to recognize potential "red flags" regarding issues that should be brought to the attention of the Legal or Compliance Office. Students will examine the complex and constantly evolving practice of Healthcare Compliance and learn to analyze and apply the law.
3.00 credit hours. Lecture.

DRA.850D
ST: Chemistry, Manufacturing, and Controls (CMC)
Special Topics course. The students will learn to examine advanced, specific areas and practical aspects of CMC with special emphasis on in-depth analysis of emerging issues in manufacturing regulations, strategies for specifications settings, CMC regulatory filing, and GMP. Subjects include ICH Quality guidelines, pharmaceutical development, analytical development and Pharmaceutical Specifications development. Key topics will be presented during each session.
3.00 credit hours. Lecture.

DRA.850F
ST: Generic Drug and Biosimilar Development
Special Topics course. This course examines the basic scientific and regulatory concepts of generic drug and biosimilar product development and approval. Emphasis is placed on FDA-approval of generic drug (small molecule) and biological products (large molecule), including reference, generic and biosimilar products.
3.00 credit hours. Lecture.

Data Science (DSC)

DSC.110
Introduction to Data Science and Programming
Students explore the profession of data science and the data science life cycle. Programming, problem-solving, and pattern recognition are introduced in context with critical thinking and professional applications. The nature and speed of change in data science are discussed. Other topics include data provenance and lineage, basic programming concepts, data formats, data strings, dictionaries, networking, and databases.
3.00 credit hours. Lecture.

DSC.220
Data and Programming I

This course builds upon the programming fundamentals for R and introduces Python in context with R. Students focus on complex data processing techniques and visualization methods. Data handling, missing data, data normalization, and merging multiple data sources are covered for heterogeneous datasets.
3.00 credit hours. Lecture. DSC.110 (Required, Previous).

DSC.436
Artificial Intelligence in Healthcare
Students review and discuss the intersection of AI technology and healthcare, evaluating implications for the future. The essentials of machine learning are introduced, including ethical challenges in healthcare settings. Responsible AI concepts and human-centered AI approaches are explored in context as students actively develop and test prompts for relevant AI tools.
3.00 credit hours. Lecture.

DSC.680
Biostats: Programming With R
This class prepares students for real-world biostatistical applications and data science using the R language and biological data. Students learn basic and advanced R syntax, perform visualizations, generate hypotheses, and test for normality. Data distributions are evaluated, along with the selection and execution of appropriate statistical tests. Students practice code debugging, publishing, reporting, and interpreting results.
3.00 credit hours. Lecture.

DSC.736
Artificial Intelligence in Healthcare
Students review and discuss the intersection of AI technology and healthcare, evaluating implications for the future. The essentials of machine learning are introduced, including ethical challenges in healthcare settings. Responsible AI concepts and human-centered AI approaches are explored in context as students actively develop and test prompts for relevant AI tools.
3.00 credit hours. Lecture.

DSC.738
AI Applications: Transformative Health
This course delves into the transformative power of AI in healthcare, exploring current applications, ethical considerations, regulatory concerns, and disruptive innovations. Students will learn to identify, evaluate, and address the challenges and opportunities presented by AI in healthcare settings.
3.00 credit hours. Lecture.

DSC.742
AI: Developing Solutions for the Future
This course will guide students through the development of AI solutions for healthcare challenges, blending cutting-edge AI technologies with real-world applications. Students focus on exploring the evolving potential of generative AI, building chatbots, and applying Agile frameworks for managing AI projects. Students create responsible, impactful AI systems and tools, manage risks, develop ethical frameworks, and design innovative AI systems.
3.00 credit hours. Lecture. DSC.738 (Required, Previous); DSC.742L (Required, Concurrent).

DSC.742L
Artificial Intelligence Solutions Development Lab
This lab-based course will guide students through the processes and requirements for the development of AI solutions. Students will conduct design and development sprints, test AI applications, review training materials, write documentation and explain the process.
1.00 credit hours. Lecture. DSC.738 (Required, Previous); DSC.742 (Required, Concurrent).

English Language Services (ELA)

ELA.041
Academic Bridge: Biology I
Students strengthen their academic language and study skills using the content of BIO 151, an introductory college biology course in which the student is concurrently enrolled. Among the skills developed are critical reading of academic course materials, note-taking, test-taking, study strategies, and giving oral presentations. Students are introduced to program resources, college policies, the Center for Academic Success and Enrichment resources, professional practices, and co-curricular opportunities.
3.00 credit hours. Lecture. BIO.151 (Required, Previous or Concurrent).

ELA.042

Academic Bridge: Anatomy and Physiology I
Students strengthen their academic language and study skills using the content of BIO 110, an introductory college anatomy and physiology course in which the student is concurrently enrolled. Among the skills developed are critical reading of academic materials, note-taking, test-taking, study strategies, and giving oral presentations. Students are introduced to program resources, college policies, the Center for Academic Success and Enrichment resources, professional practices, and co-curricular opportunities.
3.00 credit hours. Lecture. BIO.110 (Required, Concurrent).

ELA.043
Academic Bridge: Introduction to Psychology
Students strengthen their academic language and study skills using the content of LIB 120, an introductory college psychology course in which the student is concurrently enrolled. Among the skills developed are critical reading of academic course materials, note-taking, test-taking, study strategies, and giving oral presentations. Students are introduced to program resources, college policies, the Center for Academic Success and Enrichment resources, professional practices, and co-curricular opportunities.
3.00 credit hours. Lecture. LIB.120 (Required, Concurrent).

ELA.044
Academic Bridge: Human Development
Students strengthen their academic language and study skills using the content of BEH 352 Human Development Through the Life Span in which the student is concurrently enrolled. Among the skills developed are critical reading of academic course materials, note-taking, test-taking, study strategies, and giving oral presentations. Students are introduced to program resources, college policies, the Center for Academic Success and Enrichment resources, professional practices, and co-curricular opportunities.
3.00 credit hours. Lecture. BEH.352 (Required, Concurrent).

ELA.055
Academic Writing
Students develop critical reading skills through engaging with nonfiction texts from the health sciences disciplines. Students complete basic rhetorical analysis and structure paragraphs and short essays in a variety of modes. Students integrate sources into their writing as well as refine their grammar and writing mechanics. Students develop and use advanced academic vocabulary throughout all readings and writings.
3.00 credit hours. Lecture.

ELA.065
Academic Listening and Speaking
Students acquire listening and speaking strategies and skills for successful academic study. By examining various academic topics including the health sciences, students enhance their listening comprehension, improve the clarity and comprehensibility of their speech, and strengthen their knowledge of academic vocabulary. Students learn strategies for engaging in and leading class discussions, delivering academic presentations, and taking notes.
3.00 credit hours. Lecture.

ELA.070
LIB.111 Language Lab
Students strengthen their academic language and study skills using the content of LIB.111 Expository Writing I in which the students are concurrently enrolled. Students improve their comprehension and analysis of academic course materials and engage in the writing process to improve their idea development, organization, and grammatical accuracy.
0.00 credit hours. Lecture. LIB.111 (Required, Concurrent).

ELA.071
LIB.112 Language Lab
Students strengthen their academic language and study skills using the content of LIB.112 Expository Writing II, in which students are concurrently enrolled. Students develop their ability to critically read academic course materials, to use the writing process to improve written assignments, and to effectively engage in classroom discourse.
0.00 credit hours. Lecture. LIB.112 (Required, Concurrent).

ELA.075
Communication for Pharmaceutical Sciences I
To prepare for participation in academic reading and writing assignments, students work on developing academic reading strategies such as previewing, annotating, outlining, and summarizing through reading juried journal articles in

the field of pharmaceutical sciences. Students write laboratory reports, engage in class discussions, and participate in cooperative group work. Students also acquire basic library skills.
3.00 credit hours. Lecture.

ELA.076
Communication for Pharmaceutical Sciences II
To prepare for graduate-level reading and writing assignments, students read, summarize, and critique juried journal articles in the field of pharmaceutical sciences. Students master the academic writing process of planning, drafting, revising, and editing through the production of a literature review. Students engage in group presentations, acquire advanced library skills, and present a poster based on their research.
3.00 credit hours. Lecture.

Healthcare Management (HCM)

HCM.205
Healthcare Management Career Exploration Management
In this course students will learn about the diversity of careers available for healthcare management graduates. Utilizing assessment tools from the University's Center for Professional Career Development, students will evaluate their skills and competencies and readiness for these careers
1.00 credit hours. Lecture.

HCM.210
Global Healthcare Strategy
This course establishes a strategic framework for students to evaluate the challenges and issues in global healthcare, comprehend variables and thoroughly consider the unique perspective and responsibilities of stakeholders. The course facilitates understanding of globalization and the way in which different "borders", including geographic, political and cultural, impact healthcare and business.
3.00 credit hours. Lecture.

HCM.215
Economics and Financing of Healthcare
This course addresses the mechanisms of finance in the changing economic environment of healthcare. Students are introduced to the application of economic principles and theory in healthcare and health systems financing. Topics covered include health policy, regulation, insurance, market orientations, efficiency, incentives, and supply and demand in healthcare.
3.00 credit hours. Lecture. MAT.144 or higher level MAT (Required, Previous).

HCM.220
Organizational Dynamics in Healthcare
Students will experience and interpret organizational theory from the structural, cultural and organizational learning perspectives. Students will perform in-depth analyzes of organizational attributes and determine organizational capacity for improved organization functioning. Students will be challenged to think systemically in response to specific organizational issues and develop core competencies to better manage organizational behavior.
3.00 credit hours. Lecture.

HCM.225
Principles of Marketing
Factors influencing marketing decisions are explored from organizational and consumer perspectives. Market research, and basic marketing considerations for products and services are reviewed. Students develop a marketing plan taking into account the increasingly global and competitive marketplace combined with their evaluation of the organization and the needs of its customers.
3.00 credit hours. Lecture. LIB.111, LIB.120 (Required, Previous).

HCM.230
Introduction to Finance
The course covers key language and terminology, time-value of money, financial markets and securities, financial statements, financial analysis, risk and return, valuation of stocks and bonds, capital budgeting and valuation, cost of capital and capital structure, working capital management, dividend policy and international finance. Students are required to apply the various financial tools and understand how they impact financial decision-making.
3.00 credit hours. Lecture. LIB.111, LIB.120 (Required, Previous).

HCM.235
Business Information Systems

Students are introduced to the information system and explore the importance in the context of businesses, decision-making, and planning. The course includes important topics related to IS, such as the drivers of IS, database concepts, IS development, and the types of systems used in organizations.
3.00 credit hours. Lecture. LIB.111, LIB.120 (Required, Previous).

HCM.240
Accounting I - Financial Accounting
This course surveys business accounting concepts, including generally accepted accounting principles, financial statement analysis, and general decision-making approaches. Students participate in the application of accounting principles, evaluation of internal controls, and make recommendations based on reported financial data.
3.00 credit hours. Lecture. MAT.141 or higher level MAT (Required, Previous).

HCM.245
Introduction to Healthcare Business
Students survey fundamental business concepts drawing critical distinctions between traditional business and healthcare organizations. Students evaluate case studies throughout the course establishing the context of the current business environment and the challenges and uncertainty surrounding business in healthcare to develop a framework for their comparisons.
3.00 credit hours. Lecture.

HCM.251
Quality in Biomanufacturing
This introductory course provides foundational understanding of quality in biomanufacturing. Students learn basics of regulatory compliance, risk management, and the production of biopharmaceutics, with an emphasis on ensuring safety and efficacy. Course covers key topics such as industry standards, cell and gene therapies, and quality control processes. Course sets the groundwork for more advanced studies in biomanufacturing and related disciplines.
3.00 credit hours. Lecture.

HCM.252
Quality Assurance for Biomanufacturing
This course focuses on quality assurance in the biopharmaceutical industry manufacturing process. Course content includes quality management systems, standard procedures, raw materials, machine operation, and documentation: aseptic technique, contamination prevention, regulations, compliance, data integrity, equipment maintenance, and standards. Students apply problem-solving capabilities in context with vigilance, specifications, and quality verification activities to maintain high-quality production standards.
3.00 credit hours. Lecture.

HCM.253
Quality Control for Biomanufacturing
This course focuses on skills for quality control professionals, including detecting defects at the product level through measurement and monitoring, adherence to industry production standards, and regulatory requirements. Topics include reviewing production data, assessing conformity, calibration and validation, and documentation and record-keeping requirements. Sampling methodologies, corrective and preventative actions, and objective assessments are also discussed.
3.00 credit hours. Lecture.

HCM.254
Quality Assurance and Quality Control: Applied Analysis and Verification
This course emphasizes the cross-functional analytical skills necessary to support quality assurance and quality control functions in biomanufacturing organizations. Key areas of focus include statistical analysis, data integrity, data analysis and interpretation, pattern identification, and differentiating between random variations and systematic quality issues. Leadership and communication skills are stressed along with interprofessional and collaborative practice.
3.00 credit hours. Lecture.

HCM.255
Business & Career Communications
Students actively explore the role of professional communications and networking in identifying, seeking, and developing internship and career opportunities. Developmental assignments focus on establishing professional career materials, conducting informational interviews, identifying opportunities to assess workplace cultures and fit, refining interpersonal and team communications, creating and delivering professional presentations, demonstrating leadership, and addressing issues of work life balance.
3.00 credit hours. Lecture. LIB.111 (Required, Previous).

HCM.265
The Business of Biotech
This course examines the dynamic intersection of biotechnology, business operations, and the crossover to healthcare delivery and patients. A holistic perspective of industry challenges and opportunities is provided in context with the steps required for scientific discovery to reach the marketplace. Topics include analyzing real-world biotech operations, from initial disease target identification to clinical trials, commercial development, and pricing.
3.00 credit hours. Lecture.

HCM.285
Digital Healthcare Concepts
This course develops and tests knowledge of digital healthcare delivery, using a collaborative learning model. Technology, its applications, and possible barriers to its adoption, along with the evolving definitions of digital health and healthcare delivery, are examined. Basic concepts are introduced along with methods for identifying and critically evaluating the utility and the relationship of technology with the engagement of patients.
3.00 credit hours. Lecture. LIB.112, LIB.220 (Required, Previous).

HCM.300
U.S. Healthcare: Organization and Delivery
Students explore the U.S. healthcare system tracing its development through policy, reforms, and evolving reimbursement schemes to gain insight on the intricate relationships amongst payers, providers, and delivery organizations. Students participate in active case analyses to gain perspective on the current state of the healthcare system and evaluate the implications of technology, cost, quality and access.
3.00 credit hours. Lecture. LIB.112, LIB.120 or LIB.133 (Required, Previous).

HCM.310
Global Health Law Strategy
This course introduces students to political, economic and social concepts that define global health law and policy, along with key organizations and stakeholders. It provides insights into governance challenges associated with global law and policy. It also focuses on international standards for health protection; included are health security threats, medical-ethical standards and adequacy of international health law for public health.
3.00 credit hours. Lecture.

HCM.318
Leadership Development for Healthcare Managers
Students identify and develop leadership competencies tailored to individual needs and career aspirations in healthcare. Case studies, exercises, and self-assessments are used to individualize and internalize important concepts and develop an individual leadership action plan. The leadership action plan includes exploration of the personal, team, and interprofessional values and shared goals in leadership and performance.
3.00 credit hours. Lecture. HCM.300 or PSB.320 (Required, Previous).

HCM.320
Managing and Supervising Employees
Students develop an understanding of the supervisory role in contemporary healthcare organizations. The course focuses on the identification of necessary skills and competencies for effective supervision, including goal setting, problem-solving, staffing, conflict management, performance evaluation, and employee development.
3.00 credit hours. Lecture. HCM.245 (Required, Previous).

HCM.325
Completion Healthcare Projects From Conception to Project Leadership: Successfully Leading
This course systematically guides students through the complex task of leading projects within healthcare organizations. Students develop knowledge and behavioral skills to lead teams, manage resources, schedules, and scope of work. Students learn to decompose and simplify their projects, with special attention given to unique challenges of project leadership such as accessing resources they do not control and change resistance.
3.00 credit hours. Lecture. LIB.112, MAT.261 (Required, Previous).

HCM.335
Accounting II: Cost Accounting
This course is a continuation of Accounting I. Topics include corporate accounting and financial statements, long-term liabilities, cash flow and financial statement analysis, managerial accounting, budgeting, and using financial data to make business decisions.
3.00 credit hours. Lecture. HCM.240 (Required, Previous).

HCM.340
Human Resource Management
Students will examine the role of human resource management (HRM) in healthcare organizations and how HRM programs contribute to overall organizational effectiveness. Students learn theories and practices associated with the core HRM functions of recruitment, selection, development, appraisal, and retention. This course also familiarizes students with the complex legal and regulatory environments in which healthcare organizations operate.
3.00 credit hours. Lecture. LIB.112, LIB.120 (Required, Previous).

HCM.352
Quality Improvement
Students will explore continuous quality improvement through case studies in five focus areas: PDSA cycles and applied tools, organizing for continual improvement, educational and social applications of CQI, assessment, and incentives for CQI, and the process of improvement through applied research.
3.00 credit hours. Lecture. HCM.245 or PSB.235 (Required, Previous).

HCM.354
Internship Preparation
Students collaboratively strategize approaches to obtaining internships that are aligned with professional goals and career aspirations. Faculty guidance and support is provided as students actively search, submit applications and participate in internship interviews. Students collaborate to identify interpersonal leadership skills, practice active listening, and develop the "soft skills" employers are seeking.
1.00 credit hours. Lecture. HCM.300 or PSB.320 (Required, Previous).

HCM.355
Internship: Healthcare Management
This course provides experiential education enabling students to apply didactic learning in practical work settings and to reflect upon their experiences. Through direct observation and evaluation, student achievements are monitored in relation to learning and performance goals developed at the beginning of the internship with the course faculty and internship supervisor. Students work domestically or internationally depending on career interest
1.00 - 9.00 credit hours. Lecture. HCM.354 (Required, Previous).

HCM.360
Law and Compliance for Healthcare Business
Students evaluate the impact of law in healthcare delivery by discussing development through time, establishing the foundational concepts and applications in business, and analyzing current challenges from legal and ethical perspectives. Course focuses include the application and interpretation of regulations, establishing and upholding contracts, forms of negligence and liability, privacy and confidentiality, malpractice, employment laws, and risk and reporting.
3.00 credit hours. Lecture. LIB.112, LIB.120 (Required, Previous).

HCM.402
Operations Management
Students will: gain understanding of operations management and importance of operations function in health care organizations, utilize learned operational analysis skills to make business decisions, prepare to become effective operations leaders/managers, lead and participate in project development and management. Project management skills are highly desired for career operations managers, and learn skills necessary for successful careers in healthcare management.
3.00 credit hours. Lecture. LIB.112, LIB.120, HCM.215 (Required, Previous).

HCM.410
Supply Chain Management
Students will: gain overall understanding of supply chain management and the role of all stakeholders in health care organizations; develop supply chain management skills that help solve organizational business challenges; be prepared to become effective leaders, managers, and supply chain decision makers; and learn skills necessary for successful careers in healthcare management.
3.00 credit hours. Lecture. HCM.300 or PSB.320 (Required, Previous).

HCM.430
Health Services Marketing
Students will collaboratively research and develop a comprehensive health services marketing plan based on the use of internal and external assessment tools, and competitive analysis. The course focuses on developing marketing

strategy that delivers a conceptually appropriate marketing mix, identifying and explaining marketing actions, establishing critical communications, and identifying factors of success and appropriate measures.
3.00 credit hours. Lecture.

HCM.432
Global Comparative Healthcare Undergraduate Seminar
Contemporary issues in healthcare delivery, health policy, and business are explored through preliminary research, field experience, and reflection on US-based healthcare system and practice. Specific attention is paid to equity, intercultural issues, finance, customs, and comparative health policy. Students evaluate and translate differences in practice, culture, and outcomes amongst the host country, US, and similar countries and health systems.
3.00 credit hours. Lecture. HCM.255, HCM.300 (Required, Previous).

HCM.450S
ST: Introduction to Healthcare Emergency Management
Special Topics course. Healthcare organizations are critical community lifelines that respond to crises threatening the health and well-being of communities. This course presents frameworks for comprehensive emergency management programs; including hazard and vulnerability analyses, emergency operations planning, integration and coordination, responding to internal and external emergencies, and patient surges. We cover legal and ethical frameworks for effective healthcare emergency preparedness and response.
3.00 credit hours. Lecture.

HCM.450T
ST: Argument & Negotiation Emergency Management
Special Topics course. This class will be an intensive examination of the theories and practices of argumentation. Students will be exposed to a wide range of argumentation theory and vocabulary, and they will be asked to apply these approaches to public argument, advocacy, and negotiation. The class will also cover a variety of contemporary topics, tied particularly to bioethical issues.
3.00 credit hours. Lecture.

HCM.465
Global Health Capstone
Students culminate didactic learning and experiential learning through identification and in-depth research on a complex problem of practice in a global setting. The independent research demonstrates the application of knowledge from previous coursework, as well as information literacy, critical analysis, and dissemination skills.
6.00 credit hours. Lecture. HCM.355 (Required, Previous).

HCM.490
Healthcare Management Capstone
This course is a culminating experience to aid transition from undergraduate studies to a competitive professional workforce/graduate study. Students integrate knowledge and skills gained from prior academic coursework and work in teams to reason through various challenges faced by modern health systems. Using a problem-based approach, student teams will recommend solutions to questions and ambiguities posited by key case studies.
3.00 credit hours. Lecture.

HCM.532
Directed Study
Supervised study in healthcare management involving a survey of existing knowledge, self-instructed and/or faculty assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 9.00 credit hours. Lecture.

HCM.701
Introduction to Business Management
Students are introduced to management theory in the context of healthcare organizations and health systems. Course topics include change management, entrepreneurship and innovation, operational control, strategic planning and evaluation, global perspectives and diversity, and an introduction to the application leadership. Students will discuss the role of management and leadership in a collaborative workplace, focusing on teams, tasks, and motivation.
3.00 credit hours. Lecture.

HCM.710
Health Systems: Policy and Management Perspective

Students study the complexities of the US healthcare system through historical evolution, policy, and various reforms to gain insight on the intricate relationships amongst payers, providers, and delivery organizations. Students participate in active case analyses and apply managerial tools and concepts to gain perspective on the system and evaluate managerial decision-making opportunities and potential outcomes.
3.00 credit hours. Lecture.

HCM.711
Applied Management for Health and Life Sciences
Managerial theory and best practices in health and life sciences organizations are explored, as are organizational culture and opportunities for team success. Cost control, quality improvement, and access to healthcare are discussed in the context of improvement. Global perspectives on policy and regulation, operational control, and strategic planning and evaluation are also discussed.
3.00 credit hours. Lecture.

HCM.715
Healthcare Economics
This course addresses the changing economic environment of healthcare, introducing students to the application of economic theory to healthcare and health systems. Topics covered include health policy, regulation, insurance, market orientations, efficiency, incentives, and supply and demand in healthcare.
3.00 credit hours. Lecture.

HCM.718
Leadership in Healthcare Administration
Students explore theoretical and practical applications of leadership in healthcare, evaluating leadership as a component of management and organizational development. The course focuses include identification of personal strengths and attributes, application of leadership theories to decision-making, and developing leadership skills to meet professional and organizational needs. Students use case studies, applied research, peer-review, and reflection activities to develop leadership skills.
3.00 credit hours. Lecture. HCM.701, HCM.711, or HCM.710 (Required, Previous).

HCM.719
Design Thinking for Healthcare
This course introduces design thinking concepts and processes focusing on new healthcare products and service development. Students will learn the fundamentals of design thinking through case studies and exercises and understand the benefits of design thinking for improving and economizing on the delivery of healthcare services.
3.00 credit hours. Lecture.

HCM.720
Organizational Dynamics
Students experience and interpret organizational theory from the structural, cultural, and organizational learning perspectives. Students perform in-depth analysis of organization attributes and determine organizational capacity. Students will be challenged to think systemically in response to specific organizational issues and develop core competencies for the edification of learning organizations.
3.00 credit hours. Lecture. HCA.710, HCM.711, or PBH.710 (Required, Previous).

HCM.722
Business Statistics Care
The collection, evaluation, and summation business data will be explored. The course focuses on applied statistical analysis, interpretation, and representation using standard statistical methods, including descriptive statistics, probability distributions, and random variables. The testing of hypotheses, estimation, regression and correlation analyses are carried out in the context of managerial and informed decision-making.
3.00 credit hours. Lecture.

HCM.729
Managing and Leading Healthcare Innovation
This course introduces the essential concepts of organizational change, leadership, and project management to build and foster a culture of healthcare innovation. The characteristics of managers who can unlock the value hidden in their existing processes are explored. Students learn about organizations that seek transformation and potential directions and develop skills to direct change within their organizations.
3.00 credit hours. Lecture. HCM.719 or HCM.815 (Required, Previous).

HCM.730

Operations and Supply Chain Management
Students are introduced to operations and supply chain management for manufacturing and service-oriented organizations through a case-based approach requiring the application of analytical tools and approaches focused on systematic and informed decision-making. Students will collaboratively evaluate service designs and organizational capacity, design and implement quality controls, forecast demand and make adjustments to operations planning, and inventory management.
3.00 credit hours. Lecture.

HCM.732
Graduate Directed Study Healthcare Admin
Supervised study in health science involving a survey of existing knowledge, self-instructed or faculty assisted inquiry into previously published data or methodologies or other faculty approved study of a non-research nature. Prerequisite: Approval of HSC Program Director, Faculty and/or School Dean, variable credit of 1-6 credits.
1.00 - 6.00 credit hours. Lecture.

HCM.734
Value-Based Healthcare Capital
Students develop a comprehensive definition of value-based care drawing context from current and historical perspectives, patient populations and risk management. Economic perspectives, cost containment, financial implications, and the charges in organizational structures are discussed. Future considerations analyzed including care coordination, use of technology, quality, and safety.
3.00 credit hours. Lecture. HCM.701 or HCM.710 or PBH.710 (Required, Previous).

HCM.738
Revenue Cycle Management Care
Students explore the revenue cycle beginning with the patient encounter, the translation of that encounter to billable elements, transmission of claims, and the management of claims, including denials. Emphasis is added to the changing landscape of payments with value-based care and other considerations such as technology and the importance of patient experience.
3.00 credit hours. Lecture. HCM.701 or HCM.710 or HCM.711 or PBH.710 or HSC.801 (Required, Previous).

HCM.739
Applied Healthcare Innovation Project
This course focuses on defining and solving a problem in healthcare. Students select their issue to address and generate a carefully designed and well-researched innovative solution. Through independent field research and interviews, students will familiarize themselves with the business context for their solution. A memo arguing for the innovation, accompanied by supporting documentation, culminates the course.
3.00 credit hours. Lecture. HCM.719, HCM.729 (Required, Previous).

HCM.740
Managing Teams, Performance, and Human Capital
Students survey the essential functions of human resources management and establish the relationship between human capital, high performing teams, and the attainment of organizational goals. Students participate in case-based discussions that stress legal and ethical issues, recruiting, hiring and onboarding of talent, and assessing and rewarding performance.
3.00 credit hours. Lecture.

HCM.742
Finance and Accounting for Healthcare Organizations
Case studies provide context for the application of basic accounting and finance in healthcare organizations. Budgeting and revenue management, as well as the identification and categorization of expenses, assets, and liabilities are covered. Analysis of financial statements and ordinary budget tools, ratios and documents are explored with a special focus on healthcare organizations.
3.00 credit hours. Lecture. HCM.701 or HCM.710 (Required, Previous).

HCM.750C
ST: Strategic Planning for Healthcare Organizations
Special Topics course. Students will develop the knowledge and skills to effectively engage the strategic planning process in the rapidly changing environments facing healthcare organizations. Analyzing the environment, setting organizational direction, formulating strategy, and implementation are discussed. Assignments will incorporate students' analysis and evaluation skills by requiring them to apply innovative strategies and best practices to contemporary healthcare case studies.

3.00 credit hours. Lecture.

HCM.750D
ST: Data Collection, Analysis, and Reporting In Healthcare
Special Topics course. This course will examine various aspects of data collection and analysis to address complex healthcare challenges with informed decision-making. Proper data collection techniques, critical evaluation of data sources, and data sufficiency are discussed. Best practices for developing visualizations, the process of cognition and translation of visual displays, as well as ethical standards are explored through assignments.
3.00 credit hours. Lecture.

HCM.750F
ST: Fundamentals of Doctoral Research
Special Topics course. This course will establish the role of the scholar-practitioner in healthcare research; focusing on the research process, scientific methods, and analytical tools required to critically evaluate scientific research and evidence-based practices in healthcare. Additionally, this course will equip students with foundational knowledge to effectively investigate and reflect upon preliminary ideas for the Capstone Evidence-based Healthcare Research project.
3.00 credit hours. Lecture.

HCM.750G
ST: HR Management for Healthcare Executives
Special Topics course. Students acquire practical strategies to manage a healthcare human resources department. Through case studies, engaged dialogue, theoretical and practical applications, and a comprehensive final project, students will gain the knowledge, skills and abilities to collaborate as an organization's strategic partner. Topics include an organization's mission and vision, governance, and support of emergent innovation, compliance, and ethics related to human resources.
3.00 credit hours. Lecture.

HCM.750H
ST: Leadership Healthcare Theory Practice
Special Topics course. Students approach healthcare leadership from a theoretical and practical standpoint, exploring current issues and challenges in healthcare. Leadership theory, from early development through contemporary theories, will be applied to evaluate current healthcare issues. The culminating project is designed to foster self-reflection skills and students' abilities to plan leadership skills development to meet future challenges of the healthcare workforce.
3.00 credit hours. Lecture.

HCM.750I
ST: Ethics for Healthcare Leaders Practice
Special Topics course. This course provides an overview of the principles of bioethics and evaluates how moral character, moral norms, and personal values come together to inform ethical decision-making in healthcare. Leadership styles and communication strategies are explored to enable effective conflict resolution. Finally, the course provides an overview of contemporary ethical issues in healthcare, from both the administrative and clinical perspectives.
3.00 credit hours. Lecture.

HCM.750J
ST: Health Policy, Law, and Social Justice
Special Topics course. This course introduces U.S. health policy across the three branches of government and explores the interplay between federal and state policy. Students discover and analyze fundamental issues in health policy, including barriers to access and health inequities. Students will gain an understanding of the healthcare advocacy ecosystem, including methods to engage policymakers and partnering with external stakeholders.
3.00 credit hours. Lecture.

HCM.750K
ST: Epidemiology and Population Health
Special Topics course. Increasingly, healthcare managers, as part of an interdisciplinary team, are required to address infections and newly emerging diseases that adversely impact the healthcare system. In this course, through case-based learning, students will examine epidemiological data, identify determinants of health, and apply policies and practices that promote health equity and improvement in population health outcomes.
3.00 credit hours. Lecture.

HCM.750L
ST: Patient Safety Risk Management
Special Topics course. Students will approach course material from a risk manager's perspective to understand healthcare as a complex system to identify and mitigate potential harms. By analyzing case study scenarios, evaluating system-level risks, and exploring real-life safety failures, students will apply risk mitigation and management approaches to solve complex issues facing today's healthcare leaders.
3.00 credit hours. Lecture.

HCM.750N
ST: Quality Improvement in Healthcare Organizations
Special Topics course. Healthcare leaders must address organizational failures resulting in poor value, poor outcomes, medical errors and patient injury, high costs, and resource waste. Students will use scientific methods to analyze challenges and discuss methods addressing them. By analytically evaluating traditional and innovative quality improvement approaches, healthcare's complex systems provide the context for students to identify factors leading to success and failure.
3.00 credit hours. Lecture.

HCM.752
Quality Improvement in Healthcare
Students explore continuous quality improvement through case studies in five focus areas, PDSA cycles and applied tools, organizing for continual improvement, educational and social applications of CQI, assessment and incentives for CQI, and the process of improvement through applied research. Students will complete weekly case analyses directly related to the weekly topic and present a scholarly project.
3.00 credit hours. Lecture. HCA.710 or HCM.710 or PBH.710 (Required, Previous).

HCM.760
Applied Business Law and Ethical Practice
The legal system, development and evolution of law, application and interpretation of statutes, and regulatory process are discussed. The influence of federal and state government, corporate structures, and requirements for compliance are evaluated. Liability, negligence, and risk are discussed along with consent, contracts, compliance, and major healthcare legislation. Patient rights and ethical responsibilities are debated.
3.00 credit hours. Lecture. HCM.701, HCM.710, or HCM.711 (Required, Previous).

HCM.763
Conflict, Crisis, and Communication In Healthcare
Conflict in interpersonal and organizational contexts is explored from the position of paradox and consideration for opposing views. Crises and conflicts are also viewed and evaluated in the framework of a learning organization considering genuine learning opportunities. Students will work in interdisciplinary teams to assess and present crisis and/or conflict relevant communication plans.
3.00 credit hours. Lecture.

HCM.770
Population Health and Risk Management
Students work in teams to effectively collaborate and coordinate activities in population health and risk management. Particular emphasis will be placed on identification of at-risk populations, evidence-based practice, community engagement, and methods to share outcomes. The course will also address cost containment, provision of effective and equitable interventions to reduce risk in diverse populations.
3.00 credit hours. Lecture. HCM.701, HSC.701, PBH.710 or HCM.710 (Required, Previous or Concurrent).

HCM.788
Budgeting and Planning in Healthcare
Students will learn about budgeting in healthcare organizations from the operational level through strategic budget planning. Key concepts in financial planning, accounting, and budgeting will provide students with the knowledge needed to create and analyze organizational budgets. Students will apply their knowledge and skills to assignments including budget development, justification, and presentation; along with interactive weekly discussions.
3.00 credit hours. Lecture.

HCM.790A
Political Determinants of Health
Political Determinants of Health explores the systems and structures that enable or impede access to social drivers of health. In this course we examine how health drivers are impacted by federal, state, local, institutional systems that structure the distribution of resources and shape non-clinical health factors and outcomes.

1.00 credit hours. Lecture. HCM.799 (Required, Previous).

HCM.790B
Healthcare Marketing for Executives
Students focus on marketing concepts in healthcare, drawing distinctions to corporate marketing and establishing the role of healthcare executives in developing and guiding market strategy. Course content includes identifying differences in consumer behavior, evaluating loyalty and engagement, discerning brand differentiation strategies, defining market segmentation, and determining appropriate messaging and processes to address the audience.
1.00 credit hours. Lecture. HCM.799 (Required, Previous).

HCM.790C
Social Determinants of Health
Social determinants of health are the conditions in which people are born, grow, work, live, and age. These are factors that heavily influence health and health outcomes. In this course we examine social drivers - economic stability, education access and quality, healthcare access and quality, community, and environment- and explore potential innovations for improvement.
1.00 credit hours. Lecture. HCM.799 (Required, Previous).

HCM.790D
Non-Profit Management and Leadership
Nonprofit Management provides a foundational understanding of nonprofit structure and key components of a nonprofit organization. In this course, we will examine best practices for nonprofit organization, including Board composition, strategic plan development, staff management, philanthropic strategy, financial management and more. Students will create a non-profit management business plan as a final assignment.
1.00 credit hours. Lecture. HCM.799 (Required, Previous).

HCM.790E
Grant Writing
Students learn essential grant writing skills by crafting a competitive proposal relevant to their research interests. They also learn to identify funding opportunities, analyze a Request for Proposal, and develop a mini-research proposal meeting all application requirements. Special attention will be given to justifying the need for research, internal cohesiveness and logical structure, and attention to detail.
1.00 credit hours. Lecture.

HCM.790I
Employee Burnout
Students will learn to define burnout and become aware of workplace manifestations by clinical and non-clinical employees in healthcare. Current strategies and methods senior leaders use to mitigate the negative impacts of burnout will be identified using evidence-based solutions and best practices. The final project involves developing a toolkit to assist managers and leaders with implementing solutions to burnout.
1.00 credit hours. Lecture. HCM.799 (Required, Previous).

HCM.790J
Change Management
Students will learn about the structure and characteristics of organizational change. Discussions on key change management models and analysis of the application of change models in healthcare will provide opportunities for students to apply analytical skills. Students will also reflect on their personal ability to change through a growth mindset.
1.00 credit hours. Lecture. HCM.799, HCM.802 (Required, Previous).

HCM.799
Orientation to Doctoral Studies
Students will gain the knowledge, skills, and abilities needed to facilitate their success in the doctoral program while developing a network to support their doctoral journey by creating connections with peers. Topics covered in this course include University resources, doctoral mindset, literature search skills, reference management systems, time management, Blackboard proficiency, developing a personal bio, and effective peer review.
1.00 credit hours. Lecture.

HCM.802
Academic and Scholarly Writing in Healthcare
This course explores the application of knowledge and skills used to formulate questions addressing healthcare dilemmas and effective communication of evidence-based solutions. Effective literature searches and critical evaluation

of results are reinforced as essential concepts in the translation of evidence to action. Students will build doctoral-level scholarly writing skills supporting their academic journey and professional career.
3.00 credit hours. Lecture.

HCM.806
Strategic Planning for Health Organizations
Students develop knowledge and skills to engage effectively the strategic planning process in the rapidly changing environments facing healthcare organizations. Analyzing the environment, setting organizational direction, formulating strategy, and implementation are discussed. Assignments will incorporate students' analysis and evaluation skills by requiring them to apply innovative strategies and best practices to contemporary healthcare cases.
3.00 credit hours. Lecture.

HCM.815
Innovation and Entrepreneurship in Healthcare
Students explore theoretical and practical applications of innovation and entrepreneurship in healthcare. Current and future healthcare needs are investigated through course discussions and supported by research. Students will propose innovative business ideas as potential solutions to identified needs, develop a business plan/model, and pitch their ideas to peers through course presentations. Students use case studies, discussions, and course materials, and peer-review to develop entrepreneurial skills.
3.00 credit hours. Lecture. HCM.701 or HCM.710 (Required, Previous).

HCM.820
Informatics and Data Analysis Perspective
Students develop working knowledge of approaches used to describe and visualize population characteristics and the statistical tests used to identify associations between variables within datasets. This course introduces the use of "bigdata" to answer healthcare access and cost questions. Additionally, students will utilize Tableau and other tools to build reports and dashboards displaying information based on archival billing data.
3.00 credit hours. Lecture. HCM.710 or PBH.710 or HCM.711 (Required, Previous).

HCM.821
Clinical Informatics and Data Analysis
Using electronic health records (EHR) and case studies, students develop familiarity with clinical and administrative data structures and processes. Using clinical examples, students collect, query, evaluate and interpret clinical and administrative data from the EHR. The culminating project includes applying critical data analysis and the development of comprehensive and compelling visualizations in support of complex decision-making in clinical settings.
3.00 credit hours. Lecture. HCM.710, PBH.710 or HSC.801 (Required, Previous).

HCM.823
HR Management for Healthcare Executives
Students acquire practical strategies to manage a healthcare human resources department as a partner of an organization. Through case studies, dialogue, theoretical and practical applications, and a comprehensive final project, students gain knowledge, skills, and abilities to collaborate as an organization's strategic partner. Topics include financial, mission/vision, governance, budgeting, support of innovation, compliance, and ethics as related to human resources.
3.00 credit hours. Lecture.

HCM.825
Managing and Delivering Engaged Healthcare
Students explore patient-centered care, patient-centered decision-making, and patient engagement from educational behavioral perspectives. Students research and present a scholarly paper exploring relevant patient or provider perspectives on chronic illness and the evolving role of the patient in the management of their health and their participation in health care encounters.
3.00 credit hours. Lecture. HCA.710 or PBH.710 (Required, Previous).

HCM.828
Data Collection, Analysis, and Representation in Healthcare
This course will examine various aspects of data collection and analysis to address complex healthcare challenges with informed decision-making. Proper data collection techniques, critical evaluation of data sources, and data sufficiency are discussed. Best practices for developing visualizations, the process of cognition and translation of visual displays, as well as ethical standards are explored through assignments.
3.00 credit hours. Lecture.

HCM.832
Global Comparative Healthcare Seminar Care
Contemporary issues in healthcare delivery, health policy, and business are explored through preliminary research, field experience, and reflection on US-based system and practice. Specific attention is paid to equity, intercultural issues, finance, customs, and comparative health policy. Students evaluate and translate differences in practice, culture, and outcomes amongst the host country, US, and similar countries and health systems.
3.00 credit hours. Lecture. HCM.711 (Required, Previous).

HCM.842
Medical Practice Management and Leadership
Students explore and evaluate fundamental management concepts for medical practices, including practice operations, revenue cycle, risk management, and patient experience. Contemporary issues in practice management are presented and discussed in select guest lecturers. Students apply fundamental principles and develop essential skills required to negotiate the "business" of medicine to become influential leaders as medical practice managers.
3.00 credit hours. Lecture. HCM.710 or HCM.711 (Required, Previous).

HCM.845
Informed Decision Making for Healthcare Executives
The use of evidence in organizational decision-making is explored from a critical perspective to reveal common challenges, including data quality, parity, and timeliness. Students culminate the class experience with assignments focused on translating identified challenges and class experiences to the delivery of evidence-based managerial decisions that are clearly explained and justified by a thorough analysis and presentation of data.
3.00 credit hours. Lecture.

HCM.850
Healthcare Management Capstone
Strategic management theory, models, and techniques are applied in the development and presentation of a strategic plan addressing a complex problem in healthcare. Strategic change management is a focus throughout. Knowledge from previous coursework, as well as research and analytical skills, are applied in the analysis of organizational strategy, position, and competition.
3.00 credit hours. Lecture. HCA.710, HCM.711, PBH.710 or HCM.710, HCA.720 or HCM.720, HCM.763 (Required, Previous).

HCM.868
Ethics for Healthcare Leaders
This course provides an overview of the principles of bioethics and evaluates how moral character, moral norms, and personal values come together to inform ethical decision-making in healthcare. Leadership styles and communication strategies are explored to enable effective conflict resolution. Finally, the course provides an overview of contemporary ethical issues in healthcare, from both the administrative and clinical perspectives.
3.00 credit hours. Lecture.

HCM.871
Innovating Disrupting and Leading Change In Healthcare
This course covers technical innovations in healthcare delivery and novel approaches to systemic challenges in uncertain and complex organizational environments. Course assignments focus students on actively developing, refining, and demonstrating collaborative and cross-disciplinary leadership that establishes the vision for enduring change that meets professional and ethical standards while maintaining fiduciary responsibilities.
3.00 credit hours. Lecture.

HCM.874
Strategic Financial Management and Accountability
Students will develop operational knowledge of financial management skills designed to promote organizational success. By exploring challenges and critical issues facing healthcare organizations students will develop skills to implement financial management strategies in the changing healthcare environment. Application of financial management concepts to real-world decisions promote analytical skill development.
3.00 credit hours. Lecture.

HCM.876
Quality Improvement in Healthcare Organizations
Healthcare leaders must address organizational failures resulting in poor value, poor outcomes, medical errors and patient injury, high costs, and resource waste. Students will use scientific methods to analyze challenges and discuss

methods addressing them. By analytically evaluating traditional and innovative quality improvement approaches, healthcare's complex systems provide the context for students to identify factors leading to success and failure.
3.00 credit hours. Lecture.

HCM.879
Leadership in Healthcare: Theory and Practice
Students approach healthcare leadership from a theoretical and practical standpoint, exploring current issues and challenges in healthcare. Leadership theory, from early development through contemporary theories, will be applied to evaluate current healthcare issues. The culminating project is designed to foster self-reflection skills and students' abilities to plan leadership skills development to meet future challenges of the healthcare workforce.
3.00 credit hours. Lecture.

HCM.880
Patient Safety and Risk Management
Students will approach course material from a risk manager's perspective to understand healthcare as a complex system to identify and mitigate potential harm. By analyzing case study scenarios, evaluating system-level risks, and exploring real-life safety failures, students will apply risk mitigation and management approaches to solve complex issues facing today's healthcare leaders.
3.00 credit hours. Lecture.

HCM.884
Epidemiology and Population Health
Increasingly, healthcare managers, as part of an interdisciplinary team, are required to address infections and newly emerging diseases that adversely impact the healthcare system. In this course, through case-based learning, students will examine epidemiological data, identify determinants of health, and apply policies and practices that promote health equity and improvement in population health outcomes.
3.00 credit hours. Lecture.

HCM.892
Health Policy, Law, and Social Justice
This course introduces US health policy across the three branches of government and explores the interplay between federal and state policy. Students discover and analyze fundamental issues in health policy, including barriers to access and health inequities. Students will gain an understanding of the healthcare advocacy ecosystem, including methods to engage policymakers and partnering with external stakeholders.
3.00 credit hours. Lecture.

HCM.899
Introduction to Action Research
Students will learn the principles of action research, a dynamic research approach that emphasizes reflection, learning, and practical application. The key phases involved in action research, from human problem identification and data collection to human ethics considerations, reflection, and evaluation, will be covered. This approach is intended to prepare students to address real-world problems in their practice setting.
1.00 credit hours. Lecture. HCM.802 (Required, Previous).

HCM.930
Applied Practice-Based Project I: Methods
In this course, students will gain foundational knowledge to conduct the Applied-Practice Based Research (APBR) Project, focusing on the healthcare research process, scientific methods, and analytical tools to evaluate scientific research and evidence-based practices in healthcare. Students will submit a concept paper in the final four weeks of the course, which will serve as the basis for the APBR proposal.
3.00 credit hours. Lecture. HCM.899 (Required, Previous).

HCM.935
Applied Practice-Based Project II: Literature
This course will equip students with the knowledge and skills to perform effective literature searches and select reliable sources. Students will learn to answer clinical, administrative, and educational questions. Students will also revise and update the concept paper from the previous course. In the final two weeks of this course, students will defend their APBR project proposal
3.00 credit hours. Lecture. HCM.930 (Required, Previous).

HCM.940
Applied Practice-Based Project III: Ethics

This course prepares students to implement and evaluate Phase 1 of the APBR Project. Students will defend their project proposals before applying for Institutional Review Board approval. Students will then develop an action and evaluation plan while implementing and evaluating Phase 1 data.
3.00 credit hours. Lecture. HCM.935 (Required, Previous).

HCM.945
Applied Practice-Based Project IV: Implementation and Evaluation
In this course, 4th in the series of 5, students will analyze Phase I results, engage in reflection, and adjust their action and evaluation plans accordingly. Students will then initiate Phase 2 implementation and evaluation. By the end of the course, students will have formulated a comprehensive dissemination plan to share their project findings with relevant stakeholders.
3.00 credit hours. Lecture. HCM.940 (Required, Previous).

HCM.950
Applied Practice-Based Project V: Defense
Students will complete their dissemination plans and create a written report to communicate their APBR project findings. The final report showcases their expertise as scholarly writers and represents the culmination of their work. Students will defend their APBR projects in a live seminar with faculty and peers at the end of the course.
3.00 credit hours. Lecture. HCM.945 (Required, Previous).

Healthcare Studies (HCS)

HCS.101
Introduction to U.S. Healthcare
This course will be open only to high school students. Students will learn introductory concepts that contribute to the United States Healthcare system by discussing and understanding settings of healthcare delivery, the role of healthcare professionals, the role of government in the healthcare system , how healthcare is paid for and strengths and weaknesses of the system.
3.00 credit hours. Lecture.

HCS.101E
Introduction to U.S. Healthcare
This course will be open only to high school students. Students will learn introductory concepts that contribute to the United States Healthcare system by discussing and understanding settings of healthcare delivery, the role of healthcare professionals, the role of government in the healthcare system , how healthcare is paid for and strengths and weaknesses of the system.
3.00 credit hours. Lecture.

Health Informatics (HIN)

HIN.110
Biomedical Informatics
This survey course gives students an overview of biomedical informatics and foundational disciplines, including clinical, consumer, clinical research, translational biomedical, and public health informatics. Students explore theoretical approaches in the healthcare and life sciences environment, including analyzing biomedical informatics uses and ethical considerations.
3.00 credit hours. Lecture.

HIN.710
Essentials of Healthcare Informatics
This class examines the role of healthcare informatics in improving healthcare quality and safety. Students will evaluate current status of electronic health records, health information exchange, consumer information needs, global health, public health informatics, clinical information systems and forecast future trends.
3.00 credit hours. Lecture.

HIN.720
Health Data Programming and Database Structure
This course is designed to cover the fundamentals of database design and management. Course topics will include the principles and methodologies of database design, normalization, database security, relational database models, database languages, and big data principles. Students will learn how to retrieve, analyze, and aggregate relational data for analytics purposes using SQL to make informed healthcare business decisions.
3.00 credit hours. Lecture.

HIN.738
Leading Change in Health Informatics
Prepares students for leadership roles in healthcare informatics. Covers leadership characteristics, roles and responsibilities in healthcare informatics. Topics include leadership theories, responsibilities, and skills. Addresses the unique role of leaders in managing transformational change in healthcare informatics. Students will assess their own leadership skills and develop plans for lifelong learning as leaders in healthcare informatics.
3.00 credit hours. Lecture. HIN.710 (Required, Previous).

HIN.740
Health Data Security and Ethics
This course focuses on privacy, security, and compliance issues associated with health care informatics and the moral and ethical concepts of information security. The course covers the creation and storage of healthcare data, enterprise risk management, and regulatory compliance measures pertaining to healthcare data, and confidentiality and privacy of patient data.
3.00 credit hours. Lecture. HIN.720 (Required, Previous).

HIN.750
Clinical Information Systems
This course will focus on electronic health records and health information systems. Students will learn the purpose, design, and function of these systems. Benefits and concerns with system integration and interoperability will also be covered. The course will also cover discipline specific information systems including laboratory, pharmacy, and imaging as well as emerging topics such as population and mHealth.
3.00 credit hours. Lecture. HIN.710 (Required, Previous).

HIN.762
Introduction to Health Analytics and Artificial Intelligence
This course will cover the knowledge and skills needed to analyze healthcare data sets using currently available software tools. It will also cover the communication and collaboration skills required to function as a member of an analytics team. An introduction to artificial intelligence (AI) and the use of AI in healthcare settings is also covered.
3.00 credit hours. Lecture.

HIN.764
Creating a Learning Healthcare System
This course offers an exploration of the intersection between healthcare systems, continuous learning, and quality improvement. Students will learn the principles of learning healthcare systems, examining historical perspectives and the pivotal role of informatics in modern healthcare. Students will gain insights into team-based and distributed decision-making, enhancing patient interactions, and dismantling barriers to care.
3.00 credit hours. Lecture. HIN.762 (Required, Previous).

HIN.768
Global and Population Health Informatics
This course explores how information technology is revolutionizing public health worldwide. Students study data-driven approaches to understanding and improving global health outcomes. Topics include health information systems, data analytics for population health management, ethical considerations in health informatics, and innovations in telemedicine. Students develop skills for navigating the intersection of healthcare and technology on a global scale.
3.00 credit hours. Lecture.

HIN.771
Consumer Focused Tools and Systems
This course focuses on consumer healthcare information needs, health literacy, information seeking and information sources. Topics include patient portals and personal health records. Also includes development, evaluation, and regulation of consumer-focused tools and health condition specific information available on the web. Students will examine current consumer/patient use of these systems and propose solutions to increase uptake and use.
3.00 credit hours. Lecture. HIN.750 (Required, Previous).

HIN.773
Human Factors Design and Interoperability
This course covers approaches and strategies in user-centered design in healthcare. Students will study usability and apply basic design principles, design thinking, process design and prototyping, testing, and evaluation to healthcare information systems. Current tools and techniques for usability assessment in different healthcare settings will examined. System integration, health information exchange, and interoperability will also be covered.
3.00 credit hours. Lecture. HIN.710, HIN.750 (Required, Previous).

HIN.775
Project Management for Health Informatics
This class examines project management theory with an emphasis on project management for healthcare and health informatics. Students will evaluate and select tools used to develop and manage healthcare informatics projects based on a case study. Stakeholder management and collaboration are covered. The course also explores certification options in Project Management.
3.00 credit hours. Lecture. HIN.750 (Required, Previous).

HIN.799
Orientation to Health Informatics Capstone
Orientation to Health Informatics Capstone ensures that students will enter the Capstone course ready to begin working on their project. The orientation will give students the opportunity to reflect on career goals, prepare a CV or resume, meet with possible mentors, and prepare a project proposal.
1.00 credit hours. Lecture. HIN.710, HIN.720 (Required, Previous).

HIN.800
Field Study Applied Health Informatics
Course provides opportunity to gain deeper understanding of the healthcare environment through industry internship, practicum, or series of approved activities in the field. Students complete weekly assignments or discussions, engage in supervised field study (120 hours total), and receive one-on-one guidance from course instructor and site supervisor(s). Students must secure an approved field study site(s) prior to beginning this course.
3.00 credit hours. Lecture. HCM.710, HIN.710, HIN.720, HIN.738, HIN.740, HIN.750, HIN.799 (Required, Previous).

HIN.801
Applied Health Informatics Capstone
Upon completion of the capstone, through a combination of research and experiential learning, students will demonstrate mastery of the curriculum, core competencies in the health informatics field, and chosen area of specialization. Students will complete an individualized experiential component as well as a scholarly paper related to their experiential activities.
3.00 credit hours. Lecture. HCM.710, HIN.710, HIN.720, HIN.738, HIN.740, HIN.750, HIN.799 (Required, Previous).

Health Sciences (HSC)

HSC.110
Health Sciences Seminar I
This introductory course is designed for learners in the health sciences major and provides an introduction to health care delivery systems and the health sciences industry. The course focuses on essential core qualities and competencies required of healthcare professionals and those working in the health industry. The course also introduces and emphasizes successful strategies for health career development.
1.00 credit hours. Lecture.

HSC.210
Health Sciences Seminar II
This introductory course is the second seminar for health sciences majors. The course continues the focus on essential core qualities and competencies required of healthcare professionals and those working in the health industry. The course also introduces the concentrations in the major, potential minor programs, and strategies on choosing learning pathways and courses of study applicable to health career goals.
1.00 credit hours. Lecture.

HSC.220
Personal Health and Wellness
Before students can eventually take care for communities and/or individuals, they should learn about taking care of themselves holistically. Students will be introduced to the eight domains of wellness - emotional, environmental, financial, intellectual, occupational, physical, social, spiritual - with a focus on identifying tools to be used to foster their personal health and wellness.
3.00 credit hours. Lecture.

HSC.301
Health Promotion
Students relate major models and theories of the field of health promotion to strategies for increasing health-enhancing behaviors, decreasing health risk behaviors, and creating environments supportive of healthy lifestyles.
3.00 credit hours. Lecture.

HSC.305
Navigating Healthcare Systems
This course is focused on patient-centered care and navigating U.S. healthcare systems from the patient perspective. Students will also consider professional and provider perspectives as members of the healthcare workforce.
3.00 credit hours. Lecture.

HSC.308
Healthcare Leadership & Teamwork
This course focuses on preparing students for leadership roles in the health sciences and healthcare industry. Special emphasis is on leadership and the importance of fostering interprofessional teamwork and collaboration to advance mission and outcomes in improving individual and population health.
3.00 credit hours. Lecture.

HSC.310O
Healthcare Informatics
Provides an overview of the role of information systems in healthcare organizations. Students correlate these roles to the integration of evidence-based practice and research into clinical decision making and determine the influence of information systems on health outcomes.
3.00 credit hours. Lecture.

HSC.311
Health Sciences Seminar III
This introductory course is the third and final seminar for health sciences majors that builds upon the first two seminars and supports student preparation for the Health Sciences Practicum. Students will integrate self-awareness and professional skills related to internship identification through networking, resume revision, interview preparation, and development of a DEI professional statement for personal and professional development.
1.00 credit hours. Lecture.

HSC.315
Planning Health Education And Promotion Programs
This course provides practical exposure to the process of program planning by organizations that provide health education. Students will study needs assessment, goal setting, commonly used program planning models, the marketing mix, behavior change models, and program evaluation. Students will assume the role of a program planning team to create viable program plans for local public health entities.
3.00 credit hours. Lecture.

HSC.320
Writing for Health Science Professionals
Health science professionals must present their work clearly, technically, and competently for colleague and patient comprehension. Students will review the writing process with an emphasis on writing better sentences and paragraphs, choosing better words, editing, and proofreading. They will learn how to write research and technical papers, position papers, patient case studies / histories, manuscripts for publication, and a personal statement.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HSC.330
Advocacy and Leadership in Health Education and Promotion
Advocating for and leading initiatives related to health education and promotion is necessary in the current healthcare climate. Students will learn about the fundamental concepts of advocacy, leadership, management, and administration within health education and promotion. Students will then practice their newfound skills by planning, conducting, and assessing an advocacy project on a relevant topic in healthcare.
3.00 credit hours. Lecture. LIB.112, LIB.220 (Required, Previous).

HSC.340
Health and Safety
This course covers a variety of topics and issues related to health and safety. Topics include personal, occupational, and environmental health and safety, as well as principles of patient safety. Students will plan, propose, and advocate for promoting and maintaining a culture of health and safety at home, in communities, in the workplace, and in healthcare delivery.
3.00 credit hours. Lecture.

HSC.355

Contemporary Topics in Health Education And Promotion
Health education and promotion's mission is to enable people and communities to increase control over and to improve their health. Students will study and practice the role of Health Educator by reviewing contemporary case studies in public health and researching a variety of personal and community-based options that can mitigate health issues while being mindful of health equity and inclusion.
3.00 credit hours. Lecture.

HSC.360
Cultural Engagement and Health Outcomes
Students will investigate how culture, society, identity, age, and other influences affect health outcomes. They will assess impacts on individual and community well-being and connect these findings to public health practice and healthcare delivery.*3.00 credit hours. Lecture.*

HSC.401
Public Health and Policy
Students discuss the evolution of the public health system in the US and its impact on health care delivery. With this foundation for understanding local, state, national, and global issues and initiatives and their impact on health and wellness across populations, students propose health policy solutions.
3.00 credit hours. Lecture.

HSC.410
Health Research Methods
Research is the necessary foundation for meaningful improvements in health sciences. Students will learn about the research process, including identifying a study question, selecting a study approach, designing the study, data collection, data analysis, and dissemination of findings. Subsequently, students will develop their own research plan, including the development of a problem of practice, literature review, and design.
3.00 credit hours. Lecture. LIB.111, LIB.112 (Required, Previous).

HSC.421
Assessing Community Health Needs
Needs and capacity assessments are used to better understand the impacts on the health and well-being of individuals and population groups so that the appropriate health-enhancing next steps can take place. Students will be introduced to a variety of methods to complete these assessments, with special focus on the role of the Health Educator in the development and oversight processes.
3.00 credit hours. Lecture.

HSC.450BB
ST: Translating Research and Environmental Assessment to Mitigate Exposure Inclusion
Special Topics course. Special Topics course. This course involves participation in a specific project to identify and implement exposure reducing interventions in a complexity-aware context that involves coordination between healthcare providers and environmental professionals in a specific low-resource and remote setting. The course provides each student the opportunity to participate in an interdisciplinary and transboundary public health partnership involving a contemporary global environmental and climate justice issue. Students will be directly involved in translating recent research into harm reducing interventions to improve the length and quality of life.
3.00 credit hours. Lecture.

HSC.450CC
ST: Climate and Environmental Medicine Inclusion
Special Topics course. This course describes the human health risks and harms associated with exposure to climate and environmental hazards in sources such as air, water, food, and consumer products. Students will learn about the clinical practice of environmental medicine and population health strategies to prevent environmental and climate-related illnesses.
3.00 credit hours. Lecture.

HSC.460
Health Communications, Literacy and Disparities
Health literacy is defined as the capacity to obtain, process, and understand basic health information and services to make appropriate decisions about health. Poor health literacy impacts access to health information and quality health services. This course explores the link between health literacy and health disparities in relation to health information and health communications products, programs and interventions.
3.00 credit hours. Lecture. HSC.301O (Required, Previous).

HSC.470
Health Sciences Practicum
This course provides supervised, non-clinical, practical experience in the healthcare industry related to health sciences major and/or minor concentration areas of study. A combination of classroom review, online reporting, and field study experience will be involved. Students will identify a practicum site and supervisor prior to enrollment in this course.
3.00 credit hours. Lecture.

HSC.490
Health Sciences Capstone
This course is the culminating experience for Health Sciences students. Students will use the skills learned throughout the BS Health Sciences curriculum to work on an independent scholarly project, engage in scholarly seminars, and complete an interprofessional education experience.
3.00 credit hours. Lecture.

HSC.532
Directed Study
Supervised study in health sciences involving a survey of existing knowledge, self-instructed or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Lecture.

HSC.616
Graphic Medicine
Students explore new modalities of healthcare narrative and visual communication, including graphic novels and through comics. Students gain literacy in the sequentialized hybrid of word and image for growing insights and improved value to patient, healthcare, and clinical experiences.
3.00 credit hours. Lecture.

HSC.710
Health Professions Education Across Higher Education Spectrum
This course focuses on the essential skills and competencies for health professions faculty and educators. The course covers the four educator competency domains: teaching, research and scholarship, professional and institutional service and administration. Students develop a personal education and scholarship philosophy statement, engage in selfassessment and review the literature for evidence-based best practices for each competency domain.
3.00 credit hours. Lecture.

HSC.715
Educator Competencies in Health Professions
This course focuses on the essential skills and competencies for health professions faculty and educators. The course covers the four educator competency domains: teaching, research and scholarship, professional and institutional service and administration. Students develop a personal education and scholarship philosophy statement, engage in selfassessment and review the literature for evidence-based best practices for each competency domain.
3.00 credit hours. Lecture.

HSC.718
Qualities and Characteristics of Leadership in Healthcare
This course focuses on the competencies that distinguish good leadership and great leadership in healthcare. Case studies, exercises, and self-assessments are used to help participants internalize and apply concepts. Participants will explore both personal and team values in improving behavior, performance, and morale. The course will offer practical strategies for strengthening leadership and interaction skills and for enhancing overall effectiveness.
3.00 credit hours. Lecture.

HSC.731
Preparation for Independent Study
In advance of proceeding with their Independent Study (HSC.732), students will plan their project focus, timeline, and faculty mentor in full for the Program Director's approval.
0.00 credit hours. Lecture.

HSC.732
Independent Study Graduate Health Sciences
Under the guidance of a graduate faculty member, students demonstrate and apply the core concepts of research and scholarship to study or address a specific problem of practice. The independent study culminates with a presentation of findings to faculty and fellow students.

1.00 - 6.00 credit hours. Lecture. HSC.731 (Required, Previous).

HSC.750W
ST: Translating Research & Environmental Assessment to Mitigate Exposure Leadership
Special Topics course. This course involves participation in a specific project to identify and implement exposure reducing interventions in a complexity-aware context that involves coordination between healthcare providers and environmental professionals in a specific low-resource and remote setting. The course provides each student the opportunity to participate in an interdisciplinary and transboundary public health partnership involving a contemporary global environmental and climate justice issue. Students will be directly involved in translating recent research into harm reducing interventions to improve the length and quality of life.
3.00 credit hours. Lecture.

HSC.769
Bioethics and Graphic Medicine
The ethical philosophies underlying medical education, patient care, and the general health sciences require examination, particularly in a cultural context. Graduate student learners will engage commercial visual narratives in graphic medicine to apply their understanding of bioethics to select audiences.
3.00 credit hours. Lecture.

HSC.771
Critical Global Health Issues
This course explores the many facets of global health and exposes students to the complexity of the concepts that impact healthcare in developing and developed countries and the importance of exploring sustainable interventions and models of improvement.
3.00 credit hours. Lecture.

HSC.773
International Relations and Healthcare Politics
The course reviews how national systems have evolved and how countries confront the emerging issues in healthcare. Specific topics discussed with include the historical evolution of health systems, the various models that are used around the world, the main components of a health system, and the criteria used to assess the functioning of a health system.
3.00 credit hours. Lecture.

HSC.777
Disaster Management
Students examine the critical role of healthcare and public health organizations in all four phases of disaster management life-cycle. The evolution of systems at the federal, state and local levels will be compared with emerging issues associated with large-scale emergencies and disasters are explored through case studies.
3.00 credit hours. Lecture.

HSC.781
Transformative Leadership
Students explore the role of leadership in meeting challenges facing healthcare delivery in the United States as it evolves and pressures mount to decrease costs and increase access. The future and the challenges of stakeholder engagement, conflict management, strategy development, and inter-disciplinary and inter-professional practice are explored through an integrated framework of case studies and experiential learning.
3.00 credit hours. Lecture. HSC.801, HCM.701, HCM.710 or HSC.710 (Required, Previous).

HSC.782
Learning Principles & Theories of Teaching and
This course integrates teaching and learning concepts with learning theory to provide the foundation for understanding learning styles related to adult learning. Students will examine traditional theories, philosophies, and contemporary models of education, as well as practical application methods that influence learning. Students will examine evidence to determine best practices for effective teaching and promoting knowledge transfer in higher education.
3.00 credit hours. Lecture.

HSC.783
Digital Health Communication
This course provides an overview of the platforms, tools, and best practices utilized in digital health communication and studies the processes by which health-related organizations adapt to deliver their health messages in a digital arena.

Using case examples, students will explore what defines effective communication in the digital space and how that differs from traditional communication methods.
3.00 credit hours. Lecture.

HSC.784
Designing Curriculum
This course introduces students are introduced to curriculum and course development, including selecting curricular components, philosophical foundations of design, and development of learning objectives. Factors and issues influencing curriculum development, including designing for assessment, high impact learning experiences, and creation of positive learning environments will be explored.
3.00 credit hours. Lecture.

HSC.785
Health Policy and Reform
This course exposes students to the application of public policy in healthcare; examining health policy development process and its effect; and applications of potential solutions to contemporary policy issues. Students learn to think systematically about policy issues and the various methods available to policymakers. The methods of critically analyzing and writing proper policy analyses are developed and applied.
3.00 credit hours. Lecture.

HSC.786
Assessment and Evaluation of Teaching And Learning
This course identifies specific assessment techniques, instruments and their applications for learning and teaching effectiveness are discussed, evaluated, and applied. Students compare and contrast assessment approaches, discussing differences in assessment as learning, assessment for learning, and assessment of learning. Students apply knowledge of assessment and evaluation to develop an assessment strategy and comprehensive assessment plan, including formative and summative approaches.
3.00 credit hours. Lecture. HSC.710, HSC.715, HSC.782, HSC.784, or DHY.751 (Required, Previous or Concurrent).

HSC.787
Financial and Human Resource Management
This course explores strategic and financial resource management through study of workforce development, leadership, organizational climate and culture, relationships and partnerships, and financial practices. Within those five domains, students focus on evaluating employee training, assistance, expectations, compliance, ethical practices, flow of information, support of innovation, shared governance, collaboration, mission and vision alignment, financial resources, expenditures and reallocation.
3.00 credit hours. Lecture.

HSC.801
Introduction to Doctoral Studies
This course encourages students to recognize best practices and develop skills that will support their doctoral journey. Students are introduced to and evaluated on academic writing, reading, critical analysis, and ability to deliver and accept constructive criticism. Students are encouraged to take an introspective look at how graduate studies relate to personal and professional goals.
3.00 credit hours. Lecture.

HSC.805
Conducting Literature Reviews and Focusing Research
Students are guided through the literature review process. Each of the four sections of the literature review (background, methods, results and discussion) will be taught through a series of reading assignments and focused exercises. Upon completion, students will have a draft of a literature review.
3.00 credit hours. Lecture.

HSC.815
Healthcare Research Methods: Focusing Research
This course establishes the role of the scholar-practitioner in healthcare research; focusing on the research process, scientific methods, and analytical tools required to critically evaluate scientific research and evidence-based practices in healthcare. This course will equip students with foundational knowledge to effectively investigate and reflect upon preliminary ideas for the Capstone Evidence-based Healthcare Research project.
3.00 credit hours. Lecture. HSC.710 or HSC.801 (Recommended, Previous or Concurrent).

HSC.821

Health and Wellness Across the Lifespan In Healthcare
This course focuses on health promotion and disease prevention across the lifespan. Health and well-being will be examined with an emphasis on the impact of genetics, health behaviors, values, environmental, cultural influences, and health equity. Nationwide health improvement priorities and evidence-based practice initiatives will be highlighted.
3.00 credit hours. Lecture.

HSC.823
Cultural and Mental Health Issues
This course explores cultural and mental health issues through historical context and current challenges of diverse populations. Emphasis is placed on culture in understanding human behavior, mental health, and conceptualization of illness. Variations across cultures related to gender and age will also be explored along with cultural contributions to the current opioid crisis in the US and potential interventions.
3.00 credit hours. Lecture.

HSC.827
Organizational Behavior and Leadership
This course will introduce the principles of organizational behavior as it is applied to leadership, workplace actions, and ethics. The course will examine principles of motivation, communication, leadership attributes, managing conflict, decision making, team building, and dealing with change at an organizational level. Case studies will be used to enhance understanding of the importance of organizational behavior for leadership success.
3.00 credit hours. Lecture.

HSC.828
Interpersonal Education and Collaborative Practice
This course explores the complex and interconnected topics of interprofessional education and collaborative practice. Course topics include individual, team, and system-level issues in the design, delivery and evaluation of theoretically sound interprofessional initiatives in varied clinical, professional, and educational environments.
3.00 credit hours. Lecture. HSC.801 (Required, Previous).

HSC.831
Demographics and Population Health
This course explores foundational principles of population health science and determinants of health: biological, psychological, social, and macrosocial factors. It examines causation of disease at individual and population levels. Students will begin thinking about health inequalities based on demographics such as race, gender, sexual orientation, socioeconomic status, and disabilities, with an emphasis on policies and practices to improve population health.
3.00 credit hours. Lecture.

HSC.833
Disease: Population Impacts and Influence
This course explores disease; whether chronic, infectious, or injury; and the impacts disease has on populations. The course will incorporate public health theory as the basis for conversation and movement of these conditions through populations over time.
3.00 credit hours. Lecture.

HSC.836
Innovative Healthcare Technology
The intersection of exponential technological growth and its applications within healthcare delivery are investigated along with the skills and approaches required for evaluating and managing the potential of innovation. Creating, implementing, and sustaining a multidisciplinary vision for continuous innovation is discussed from a collaborative practice perspective.
3.00 credit hours. Lecture. HSC.801 (Required, Previous).

HSC.837
Patient-Centered Care and Health Integration
This course reviews some of the critical issues that impact the United States healthcare system. The healthcare system faces multiple challenges with increasing chronic disease and disabilities, a graying population, and excessive costs with limited resources. The new direction for healthcare is to focus on population health, patient-centered care, and value-based care, all delivered with an integrated system.
3.00 credit hours. Lecture.

HSC.841
Patient Safety and Risk Management Integration

Students explore risk management and safety from a systems-based perspective. Course topics include safety-based culture, high-reliability, failure, measures and indicators, and the business case for quality. Conceptual understanding of risk in clinical settings is developed along with quality and safety. Leadership and management in the mitigation of risk is explored through multiple contexts, including systems, organizational structure and culture.
3.00 credit hours. Lecture.

HSC.843
Health Systems Monitoring and Evaluation
Students are introduced to the basic concepts and methods used in monitoring and evaluating health systems and programs. Systematic thinking and critical analysis will guide practical applications of learning in developing and applying key evaluation questions. Scientific writing skills will be used in developing and proposing a comprehensive monitoring and evaluation approach for a health program or system.
3.00 credit hours. Lecture. HSC.801 or HCM.710 (Required, Previous).

HSC.849
Evidence-Based Practice
As evidence generated from research is continuously changing education and clinical practice, this course aims to prepare health professionals with essential skills to incorporate quality research with clinical expertise and patient values for improved quality of care and positive health outcomes. Students will identify and explore evidence-based resources while combining a critical review of the evidence and decision-making activities.
3.00 credit hours. Lecture. HSC.815, HSC.710 or HSC.801 (Required, Previous).

HSC.852
EBHC Capstone: Question Development and Search for Evidence
Students explore an evidence-based approach to healthcare and gain the knowledge and skills to formulate questions and seek answers to dilemmas in practice. Effective literature search and critical review are applied, supporting the dynamic translation of evidence. Students are introduced to the application of evidence-based approaches in healthcare, promoting the translation of knowledge to action through evidence.
3.00 credit hours. Lecture. HSC.815 (Required, Previous).

HSC.854
EBHC Capstone: Appraisal of the Evidence
Students critically appraise their collected literature, examining and judging the importance of the question and results; validity and methods; interpretation of findings; and application to practice. Use of validated tools for a critique of systematic reviews, randomized controlled trials, cohort studies, qualitative research, and practice guidelines are covered. Findings are interpreted, collated and reported using a scientific approach.
3.00 credit hours. Lecture. HSC.852 (Required, Previous).

HSC.856
EBHC Capstone III: Dissemination of Findings
This course completes the capstone project and culminates the series. Students examine their literature reviews and critical appraisals, and apply findings to answer the PICO question. Students design a dissemination strategy to share findings and formulate an evaluation plan to appraise potential outcomes. The end product should result in the direct translation of evidence to practice.
3.00 credit hours. Lecture. HSC.854 (Required, Previous).

Health Technology Management (HTM)

HTM.260
Artificial Intelligence for Health and Life Sciences Professionals
This course focuses on foundational knowledge and technical skills necessary to understand AI's transformative power and identify limitations. Topics include machine learning, clinical AI applications, ethical challenges, AI literacy, and implementation strategies. Skills include critical evaluation of AI tools and results, bias mitigation, and interdisciplinary collaboration. The course culminates with students designing AI-driven solutions to real healthcare challenges.
3.00 credit hours. Lecture. LIB.111 (Required, Previous).

HTM.700
Introduction to the U.S. Healthcare System
The U.S. health system and its key components, including financing, delivery models, health policy, and current issues, are explored. Topics include foundational concepts such as public health and prevention and progress to specific delivery attributes, including technology. Assignments encourage critical thinking, analysis, and application of course concepts to real-world health system issues.
1.00 credit hours. Lecture.

HTM.717
Economic Evaluation: Global Perspectives
This course will introduce students to the ideas, methods, and applications of decision and cost-effectiveness analysis in healthcare. Topics include clinical and economic evaluation and basic healthcare decision analysis methods. The potential benefits and practical challenges of using these methods to evaluate healthcare policies and interventions will be discussed.
3.00 credit hours. Lecture. HTM.720 (Required, Concurrent).

HTM.720
Business Statistics and Data-Driven Decision Making
This course focuses on advanced statistical analysis techniques and applications in business, tech-bio, and life science decision-making. Students will learn to analyze complex data sets, interpret statistical results, and use data-driven insights to solve real-world problems. The course emphasizes theoretical understanding and practical application of statistical methods using modern software tools.
3.00 credit hours. Lecture. HTM.717 (Required, Concurrent).

HTM.727
Strategic Finance for Health Technology and Health Sciences
This course examines strategic financial decision-making and balances theory with practical applications in the healthcare and technology sectors. Course focuses include cost management, cash flows, valuation and commercialization as well as capitol budgeting and risk management. Applications of financing strategies will be explored with key strategic challenges facing healthcare and technology firms, from early-stage startups to established corporations and mergers.
3.00 credit hours. Lecture.

HTM.737
Data Science and Analytics for Business Decision Making
This course integrates data science, analytics, business applications, and emerging technologies such as AI to develop practical analytical skills for decision-making in healthcare and life sciences. Students will apply statistical tools, SQL and Python programming techniques, and data visualization methods to identify patterns, solve business problems, and effectively communicate insights, while addressing ethical concerns in data use.
3.00 credit hours. Lecture.

HTM.757
Managing and Leading Change
This course examines how organizations, leaders, and managers handle intense periods of change and how they view the potential for failure. Students will learn key concepts and theories for change management and develop leadership skills to effectively manage change in complex environments.
3.00 credit hours. Lecture.

Humanities (HUM)

HUM.230
Introduction to the Health Humanities
This course is an introduction to the interdisciplinary approaches and methods associated with health humanities. Students review literature defining the scope and interests of this discipline; study illness, health and healthcare through the perspectives of literature, film, essay/memoir, history, and social science; and think critically about health and illness as these phenomena are discursively constructed in professional and popular culture.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.252
The Short Story
Through a survey of short prose fiction, students study definitions and problems associated with the short story genre; the origins and evolution of the "modern" short story; and connections between texts and their historical, social, and gender contexts. Emphasis is on American stories.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.255
Monsters in World Literature
Students will study literature that engages with monsters and monstrosity. They will analyze texts that include a wide range of threat types, varying across physical monsters to imagined monsters to monsters in the systems around us.

They will read works across multiple countries, languages of origin, and time periods. Students will engage with scholarship on monsters to produce research papers.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.291
Introduction to Film
Application of visual, literary, historiographic, and semiotic analysis to film. Topics include aesthetics, film theory, visual composition, editing, and narrative. Representative films by such directors as Eisenstein, Huston, Hitchcock, De Sica, and Kurosawa are viewed and discussed.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.340
Introduction to Philosophy
Inquiry concerning the quest for certain knowledge, beginning with ancient Greek philosophy of nature and reality (reading Aristotle or his predecessors, especially Pythagoreans, the Skeptics, and the Atomists); transitioning to the scientific revolution of the 17th and 18th centuries (Bacon, Descartes, La Mettrie, and Hume); and culminating in our century's two cultures, the sciences and the humanities.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.341
World Literature
This course reads world literature to explore a chosen topic in depth (e.g., war in world literature). Readings, discussions, and lectures engage literatures from various continents; genres such as the novel, poetry, and short stories; and various time periods.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.342O
Cancer and Comic Books
This course examines popular and personal visualizations of illness, specifically cancer, as mediated through graphic novels and sequential art. Students engage in advanced reading strategies and interpretations of these works, of creators' backgrounds, and of experiences of living with cancer. Further, they will cultivate individualized projects based on their written analyses.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.343
Graphic Medicine
At the intersection of comics and medicine is the rise of the "graphic medicine" scholarship field. This course examines the ways in which the hybrid word-and-image medium is bringing new insights to patient, healthcare, and clinical experiences.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.344
Bioethics and Graphic Medicine
Comic books like Taking Turns (2017) or Lissa (2017) powerfully explore bioethical issues through an unexpected medium. In this class, students will interpret such issues presented in this mode. Students will examine medical autonomy, end of life care, euthanasia, and other healthcare scenarios through graphic medicine to better understand and engage their underlying ethical dilemmas.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.350
Selected British Writers
An introduction to some of the major British writers from the Middle Ages to the present. Although attention is paid to historical and biographical materials, the focus of the course is on the literary texts themselves.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.352
Survey of World Religions
Religion is key in U.S. politics, commerce, pop culture, and everyday life, yet few Americans are knowledgeable in any faith, including their own. One must understand both what others believe and also how they believe. This course introduces students to the essential principles and histories of several world religions, with no background in any faith required or favored.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.353
Literary Boston in the 19th Century
Students will read fiction, nonfiction, and poetry writings by 19th-century Boston-based authors such as Emerson, Thoreau, Fuller, and others who viewed literature as a means of shaping America's political and social landscapes. They will consider how authors sought to answer the country's call for a unique American literature to establish a unique American identity. Boston field trips included.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.354
Poets and Warriors: Irish Literature Film, and Culture
This course is an introduction to Irish film from Man of Aran to contemporary films, and Irish literature from the Iron Age to the present, emphasizing contemporary genres: short stories, plays, poetry, and novels. A selection of Irish films and readings/discussion will introduce students to Irish history and culture. Students analyze the connections between Irish culture, history, film, and literature.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.355
Science, Technology, and Values
What is the relationship between science and values? Popular culture often portrays scientific endeavor as diametrically opposed to value-laden activities like religion. In our course we will explore the complex dynamics between the two. In the process, we will also explore the rationality of scientific revolutions and the role novel technologies play in them.
3.00 credit hours. Lecture. LIB.512, HUM.340 or HUM.450R (Required, Previous).

HUM.357
Immigrant Literature
Through the study of literature, students will investigate the fundamental motivations that prompt people to immigrate. Students will be encouraged to assess how immigrants contribute to their new discourse community through language, culture, and religion. Furthermore, students will be urged to consider alternative ways of looking at the world and to enjoy the linguistic and formal elements of immigrant literature.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.358
Detective Fiction and Film
This course will focus on analyzing the detective story in film and fiction. Students will see classic films and clips from films that feature detectives and/or mystery plots. Students will read short fiction by masters of the genre, analyze the genre conventions, and learn analysis of film technique to recognize and compare the style of the films and fiction.
3.00 credit hours. Lecture.

HUM.359
Young Adult Fiction and Film
Students will comparatively analyze popular young adult fiction and film for its historical, artistic, and cultural significance/value. Students will explore how these works connect and speak to global, social, and political issues while discussing the core elements of plot, characters, setting, and conflict.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.365
Technology in Literature
Students in this course will read seminal works of science fiction and analyze these works in historical context. They will learn how ideas of technological potential and risk are often filtered through the cultural and artistic lens and thereby affect and/or reflect a society's understanding of its own potential. In-depth literary analysis and discussion will be expected.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.375O
Modern Novels of the Afterlife
The afterlife is a frequent topic in our multimedia society, particularly in the modern novel. In this class, students will read such works in terms of their literary predecessors and as commentary on modern society. Students' analytical capacities will be sharpened for how storytelling works-how writers fit within a medium about time and space stories that lay outside them.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.390
Gilgamesh to Star Trek: Adapting the Epic in World Literature
In this course, students evaluate what epics say, how genres create meaning, and evaluate the success of these adaptations. For Gilgamesh, we analyze such texts as Komunyakaa's Gilgamesh and Star Trek The Next Generation's "Darmok." For the Odyssey, we evaluate such works as Canto 18 from Dante's Inferno, Atwood's Penelopiad, Glück's Meadowlands and the film O Brother, Where Art Thou?
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.395
Gothic Narrative in Literature and Popular Culture
This course surveys gothic narrative in its popular forms, tracing its development from the literary fiction of the 18th and 19th centuries to its contemporary iterations in popular culture (horror, fantasy, science fiction). Students engage in critical reading and research, and apply principles of literary and cultural analysis to better understand the interplay of popular media, history, and culture.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.425
Applied Ethics
The course provides a survey of contemporary moral and political issues, including the right to welfare, the duty to help the needy, sexual equality, affirmative action, pornography, animal rights, and the rules of war. The aim of the course is to teach students to describe an ethical issue and formulate a well-grounded analysis.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.444
Creative Writing
Introduction to writing poetry and creative non-fiction essays informed by analysis of writing techniques. Focus on developing creative expression skills through writing and revising in response to feedback, close reading, and critique of the work of peers and contemporary writers.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AS
ST: The Discourse of Dissent
Special Topics course. In this writing-intensive course, students will use principles of rhetorical analysis to analyze journalistic sources, social media, and other texts in order to understand the discourses of protest and activism in US culture. Student research will focus on current issues of social and climate (in)justice.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AT
ST: Bioethics Graphic Medicine
Special Topics course. The ethical philosophies underlying medical education, patient care, the general health sciences require examination, particularly in a cultural context. Graduate student learners will engage commercial visual narratives in graphic medicine to apply their understanding of bioethics to select audiences.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AU
ST: American Cinema 1960-1980
Special Topics course. This course considers key American films of the 1960s and 1970s, situating them within their social, historical, and cultural contexts. Students will explore how American filmmakers responded to diverging perspectives about the Vietnam War, Watergate, the civil rights movement, second-wave feminism, student-led protest movements, underground culture, and shifting attitudes toward religious faith, violence, sexuality, government, and the military.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AV
ST: Young Adult Fiction and Film Fundamentals
Special Topics course. In this course we will comparatively analyze popular young adult (YA) fiction and film for its historical, artistic, cultural value, expressed values, and concerns related to youth culture. We will explore how these works connect and speak to global, social, and political issues while discussing the core elements of plot, characters, setting, and conflict.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AW

ST: Gender, Power, and Performance
Special Topics course. Constructions of gender have always played into ideas of power from the very beginning of recorded history, and power tends, particularly in Western ideology, to be male. However, if we expand the definition of power, we find ways in which those who fell outside the traditional male identification exercised power and influence. In this discussion-based course, we will explore the intersection of gender, power and performance through four spheres of public engagement: Arts and Culture, Politics and Religion, Sports, and Science. Through historical writings, literature, plays, poetry, film, podcasts, and art, we will dissect the ways gender and performance affect ideas of power and define for ourselves what it means to hold and exercise power. Students will conduct research culminating in a final project. Other assignments include a group presentation, an annotated bibliography, and self-reflective writing responses.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AX
ST: Loneliness and Connection Performance
Special Topics course. In 2023, the U.S. Surgeon General warned of loneliness as a public health crisis. This course will examine the modern sources of loneliness, its health impacts, and emerging literature & strategies for understanding and combatting it.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450AY
ST: Clinical Ethics Performance
Special Topics course. Clinical Ethics Consultation provides students the theoretical background and practical skills necessary to participate in ethics consultations in hospitals, clinics, and other healthcare institutions. We begin by exploring different models of clinical ethics consultation and the nature of ethical expertise. In addition, students learn to identify the key issues in an ethical conflict, techniques of making moral progress, and the common concepts in clinical ethics including patient's rights, social determinants of health, confidentiality, and decision capacity. We also review important legal cases and relevant health laws. One goal of the course is to prepare students to complete the Healthcare Ethics Consultant-Certified Program offered by the American Society for Bioethics and Humanities.
3.00 credit hours. Lecture. LIB.512 (Required, Previous).

HUM.450AZ
Contemporary African American Literature
The course will survey literature by African American authors from the twentieth century to the present day. Readings may include poems, essays, novels, and lyrics that grapple with the Civil Rights Era, Black Feminism, Hip Hop, LGBTQ issues, and the African American experience. Additional topics may include the oral tradition, the Black arts movement, the re-envisioning of slavery in the modern imagination, intersections of race and sexuality, and cross-cultural identities.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.450O
ST: Technology in Literature: Wonder And Terror
Special Topics course. Description: Attitudes towards science and technology are always changing, and at all times in history there has been a delicate balance between the wonders science may bring us and the terrors in might inflict. This course studies changing social attitudes towards technology and applied science from the turn of the 20th century to the turn of the 21st as has been depicted in works of literature and science fiction. Students will read work from HG Wells, Isaac Asimov, and William Gibson among others, and through them explore the close relationship between science, society, and hope for the future.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.454
Speculative Fiction Film, Literature, & Popular Culture
Students examine speculative texts across multiple mediums and genres such as science fiction, fantasy, horror, magical realism, revisionist history, utopian/dystopian fiction, superhero stories, weird tales, and other "what if" narratives. Analysis of common tropes and motifs will provide students with insight into widely held cultural beliefs, social structures, and historical power relations.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.456
Narrative and Medicine
This course surveys various literary works to explore the historical and cultural factors affecting both the development of narratives about and popular understandings of medicine and illness. Students consider how clinical practice is represented in narratives; how different forms of storytelling reflect attitudes toward illness; and how medical narratives can function as powerful vehicles for social critique.

3.00 credit hours. Lecture. LIB.112 (Required, Previous)

HUM.458
Writers Who Shaped the Modern World
This course studies selected American modernist literature from 1900 to 1950, and how this era helped define the roots of what would become modern American culture in regard to technology, human rights, war, injustice, race, and gender.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

HUM.480
Health Humanities Capstone
A capstone seminar for health humanities majors. Each student will undertake an independent research project drawing on knowledge and interests emerging from their health humanities degree program. Students discuss research models, submit a research proposal for seminar critique, and write an interdisciplinary research paper that is presented for seminar discussion.
3.00 credit hours. Lecture. HUM.230 (Required, Previous).

HUM.532
Directed Study
Supervised study in the humanities involving a survey of existing knowledge, self-instructed and/or faculty-assisted inquiry into previously published work, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Lecture. LIB.112 (Required, Previous)

Instructional Resources (INF)

INF.210
Survey of the Literature of Chemistry
Introduces students to the methods used for finding and utilizing chemical information. Print and electronic resources are discussed, including handbooks, indexes, journal and patent literature, online databases, and information from the Internet.
1.00 credit hours. Lecture. CHE.231, library modules (Required, Previous).

INF.532
Directed Study
Supervised study in health information literacy, scholarly communication or informatics involving a survey of existing knowledge, self-instructed and/or faculty assisted inquiry into previously published data or methodologies, or other faculty approved study of a non-research nature.
1.00 - 3.00 credit hours. Lecture.

Certificate in Advanced Pharmacy Practice Studies (INT)

INT.400
Topics in Pharmaceutical Sciences and Pharmacy Practice
Part one of a two-semester sequence providing a review of the professional pharmacy curriculum as preparation for the Foreign Pharmacy Graduate Equivalency Examination (FPGEE). Students will participate in interactive sessions and apply concepts to pharmacy practice. Students will apply drug literature evaluation, practice management, and physical assessment skills. Topics include: drug literature evaluation, practice management, physical assessment, biochemistry, biotechnology, infectious diseases, pharmaceutics, and clinical pharmacokinetics.
4.00 credit hours. Lecture.

INT.401
Topics in Pharmaceutical Sciences and Pharmacy Practice II
This seminar is the second part of a year-long seminar course that provides a review of the professional pharmacy curriculum as part of the preparation for the Foreign Pharmacy Graduate Equivalency Examination (FPGEE). Topics for spring semester (part II) include pharmacotherapy topics, Over-the-Counter/Self Care topics, vaccines, complementary alternative therapies, biopharmaceutics, biotechnology, pharmacology, federal law/regulatory affairs, and pharmacoeconomics
4.00 credit hours. Lecture.

INT.500
CAPPS Pharmacy Internships I and II Experience
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through

structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411, PSB.432 (Required, Previous).

INT.501
Pharmacy Internship I
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture.

INT.502
Pharmacy Internship II
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture.

INT.503
Pharmacy Internship III
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture.

INT.504
Pharmacy Internship IV
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture.

INT.505
Pharmacy Internship V
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture.

INT.506
Pharmacy Internship VI
Students will be assigned to a series of six supervised pharmacy practice internships in the inpatient and outpatient pharmacy practice settings. During the pharmacy internships, students will gain pharmacy practice experience through structured learning experiences in the inpatient and outpatient settings. They will accumulate the 1,500 hours required for pharmacy licensure by the Massachusetts Board of Registration in Pharmacy.
6.00 credit hours. Lecture.

Introduction to the Major (ITM)

ITM.101
Introduction to the Major
Assists students with the transition from high school to college by orienting them to College resources, career opportunities, and the academic skills needed for classroom success.
1.00 credit hours. Lecture.

Liberal Arts (LIB)

LIB.105
Vocabulary and Grammar in Academic Writing for Multilingual Students
Students will analyze the vocabulary and grammar patterns frequently used in academic texts and practice these patterns to expand their strategies for making appropriate lexical choices and to increase their linguistic accuracy. Students will apply these strategies in editing their own writing assignments.
3.00 credit hours. Lecture. LIB.110 or LIB.111 (Required, Previous).

LIB.110
Introduction to Academic Reading and Writing
This course is an introduction to college-level reading and writing. It covers rhetorical analysis; summary, synthesis, and paragraphing skills; and the development of composition skills, grammar, and vocabulary.
3.00 credit hours. Lecture.

LIB.111
Academic Writing and Research
Students develop critical thinking and information literacy skills through careful reading and research and clear, error-free oral and written expression. Through the evaluation and integration of appropriate sources, they develop persuasive communication representing their own and others' points of view.
3.00 credit hours. Lecture.

LIB.111L
Academic Writing and Research Lab
0.00 credit hours. Lecture. LIB.111 (Required, Concurrent).
LIB.112
Writing in the Humanities
Students in learn and use the approaches of the Humanities to understand and analyze expressive texts in multiple forms including literature, the arts, and popular media. They build on the skills from LIB 111 to critically read and think about various genres, and they produce effective written and oral communication that draws on library research and information literacy.
3.00 credit hours. Lecture. LIB.111 (Required, Previous).

LIB.112L
Expository Writing II Lab
0.00 credit hours. Lecture. LIB.112 (Required, Concurrent).

LIB.120
Introduction to Psychology
Designed to orient students to the scientific study of behavior through the exploration of selected principles and theories of human behavior. Topics include perception, learning and memory, personality development, abnormal behavior, and social influences on behavior.
3.00 credit hours. Lecture.

LIB.133
Introduction to Social Sciences: Identity, Power, and Society
This interdisciplinary course introduces students to the social sciences, examining the ways in which social and political structures shape systems of power and affect the formation and experience of social identity, particularly in terms of race, gender, sexuality and socioeconomic class. Students critically examine primary and secondary sources.
3.00 credit hours. Lecture.

LIB.205
Health Professions Orientation Seminar
This course introduces Premedical and Health Studies majors to the key features of the degree program, including the interdisciplinary curriculum, minor options, and affiliated professional pathway opportunities. It reviews personal statement writing, professional school admissions tests, interview preparation, and career self-assessment.
1.00 credit hours. Lecture. BIO.150L, BIO.152, CHE.132 (Required, Previous).

LIB.220
Introduction to Interpersonal Communication for Health Professionals
This introductory communication course focuses on the principles and practice of interpersonal communication with particular attention to interactions in healthcare contexts. Topics include perception, verbal and nonverbal communication, listening, and conflict. Emphasis is placed on the co-constructed and cultural nature of interpersonal communication and recognizing one's own communicative biases and behaviors.

3.00 credit hours. Lecture. LIB.112 (Required, Previous).

LIB.252
Introduction to Speech
Study and practice of public speaking in order to persuade or inform an audience. Students present several formal and informal speeches and a debate. Emphasizes building confidence and competence in public presentations.
3.00 credit hours. Lecture. Passing score on OPE exam or successful completion of LIB.253 (Required, Previous).

LIB.253
Fundamentals of Oral Communication in Healthcare
Students improve their speaking and listening skills by focusing upon essential pronunciation features, developing control of language structures, monitoring the accuracy of spoken English, and engaging in a variety of discourse genres. Course activities will center around scientific and biomedical topics as well as clinical interactions.
3.00 credit hours. Lecture.

LIB.305
Medical College Preparation Course
Students will focus on developing quantitative, written and verbal reasoning skills in preparation for the MCAT, DAT or OAT exams. This includes practicing skills related to critical thinking and reading comprehension in scientific disciplines. They will also acquire proficiency in basic medical terminology, as well as learn to apply strategies regarding standardized test-taking and managing test anxiety. This course does not fulfill the LIB elective distribution requirement.
2.00 credit hours. Lecture. PHY.274L or PHY.284L (Recommended, Previous or Concurrent).

LIB.330O
Introduction to Communication Sciences And Disorders
Introduction to Communication Sciences & Disorders (CSD) will provide students preparing for healthcare careers with a comprehensive overview of speech, language and hearing disorders; typical diagnostic, intervention and case management techniques; and clinical services provided by speech-language pathologists and audiologists. The roles of CSD professionals as integral members of the healthcare community will be emphasized throughout the course.
3.00 credit hours. Lecture. LIB.112, LIB.220 or LIB.252 (Required, Previous).

LIB.340
Spanish for Healthcare Professionals
This course is designed to develop Spanish communication skills in the medical field. Medically relevant vocabulary/phrases are introduced to enable students to build and practice basic language skills for their work as healthcare providers. The course emphasizes Spanish conversations (patient-healthcare provider) and understanding of written Spanish from medical documents (histories, prescriptions, laboratory results). Intermediate working knowledge of Spanish is necessary.
3.00 credit hours. Lecture.

LIB.380
Undergraduate Learning Assistantship In Psychology
Designed for students to develop leadership skills and knowledge about teaching and learning through an experiential assistantship. Students will attend Introduction to Psychology class meetings, support the learning of a group of students within the course, and help facilitate in-class activities. Students will also attend weekly meetings with their supervisor and fellow teaching assistants and will submit reflection assignments.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

LIB.450I
ST: Undergraduate Teaching Assistantship in Psychology
Special Topics course. Designed for students to develop leadership skills and knowledge about teaching and learning through an experiential teaching assistantship. Students will attend Introduction to Psychology class meetings, support the learning of a group of students within the course, and help facilitate in-class activities. Students will also attend weekly meetings with their supervisor and fellow teaching assistants and will submit reflection assignments.
3.00 credit hours. Lecture.

LIB.460H
ST: Advanced, Real-World Problem Solving
Special Topics course. Students work in multidisciplinary teams to identify, analyze and propose practical solutions to real-world problems in the Health Sciences. Students will be evaluated on the quality of their teamwork, the depth of their analyses, the suitability of their solutions, and the quality of their written, oral, and video presentations.
3.00 credit hours. Lecture.

LIB.460K
ST: Mindfulness-Based Stress Reduction
Special Topics course. Mindfulness Based Stress Reduction (MBSR) is an evidence-based, experiential program that teaches mindfulness, meditation, movement practices and stress management. During this course, students will practice these mindfulness techniques to integrate into one's daily life. Research has shown that participants who take MBSR feel less stress, sleep better, increase academic performance, grow more mindful of the present moment and thus increase their overall wellness. 45 minutes of daily meditation is required as homework. Instructor approval is required.
3.00 credit hours. Lecture. LIB.120 (Required, Previous).

LIB.460L
ST: Career Lab: Internship Search Reduction
Special Topics course. Students will learn about the internship/research search process, actively create and refine application materials including resumes, cover letters and LinkedIn profile, and practice essential written and oral communication skills through interview practice.
0.00 credit hours. Lecture.

LIB.480
Premedical and Health Studies Capstone Seminar
This capstone seminar for Premedical and Health Studies seniors focuses on the review and synthesis of literature in multiple health-related disciplines including the humanities, life, social, and behavioral sciences. Students discuss research methods, present research for peer and instructor critique, and write interdisciplinary papers that are presented for seminar discussion.
3.00 credit hours. Lecture.

LIB.512
Healthcare Ethics
Students learn to identify, articulate, and analyze ethical issues in the practice of the biomedical sciences. Drawing on the tools of philosophical bioethics, this course applies established ethical theories and methods of critical thinking to both long-standing and emerging issues. Topics may include some of the following: truth telling, new reproductive technologies, distribution of scarce resources, and responsible conduct of research.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

LIB.530
Undergraduate Research Project
Research participation at the undergraduate level in various fields of behavioral sciences, social sciences, and humanities. Consent of instructor and dean.
1.00 - 3.00 credit hours. Lecture. LIB.112 (Required, Previous).

LIB.532
Directed Study
Supervised study in behavioral sciences, social sciences, and humanities involving a survey of existing knowledge, selfinstructed and/or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 - 3.00 credit hours. Lecture.

LIB.590
Health Psychology Field Placement I
With the approval of the course coordinator, students identify a placement site that allows them to explore a professional pathway and to apply the knowledge and skills gained through the Health Psychology major.
3.00 credit hours. Lecture.

LIB.591
Health Psychology Field Placement II
According to their interests, students are matched with a field placement involving research or clinically oriented activities in health psychology. Students meet regularly with the course coordinator on a weekly basis to integrate their new experiences with prior knowledge.
3.00 credit hours. Lecture.

LIB.592
Health Psychology Capstone Seminar

This capstone course for health psychology majors focuses on refining literature search techniques, and strengthening reading, summarization, and integration skills. Each student selects a topic, conducts library research, presents progress reports, and prepares an APA style literature review.
3.00 credit hours. Lecture. BEH.456 (Required, Previous).

Mathematics (MAT)

MAT.141
Algebra and Trigonometry
Covers roots, radicals, and fractional exponents; quadratic equations, linear and quadratic functions, graphing techniques, variation, exponential functions, logarithms, log-log and semilog graphs, trigonometric functions, and solving right triangles, with applications to biology, physics, and chemistry.
3.00 credit hours. Lecture.

MAT.142
Mathematics for Nurses
Students learn to utilize the mathematics required for the Nursing program. Topics include fractions, decimals, percentages, proportions, and conversions within and between metric and nonmetric systems. Emphasis is placed on problem-solving techniques for rational equations and percentage problems, especially on modeling and calculations with solutions, concentrations, drug dosage, and intravenous flow rates. Calculator use is limited. Not for general elective credit.
3.00 credit hours. Lecture.

MAT.143
Foundations of Algebra and Trigonometry
Students learn to utilize the mathematics required for the Dental Hygiene program. Topics include fractions, decimals, percentages, proportions, algebra, measurement systems, conversion procedures, linear equations, graphing, variation, exponential and logarithmic functions, and basic geometry. Not for general elective credit.
3.00 credit hours. Lecture.

MAT.144
Business Math and Computer Applications
Students will apply basic mathematical concepts to common business usage, including such topics as percentages, interest, consumer credit and mortgages, stock trades, bank and cash discounts, payroll and time value of money. Students will gain hands on experience utilizing Microsoft Excel for Business math applications.
3.00 credit hours. Lecture.

MAT.150
Precalculus
This course covers the real number system, and functions and their graphs, including polynomial, rational, exponential, logarithmic, and trigonometric functions, with applications to biology, physics, and chemistry. Students may not receive credit for both MAT 141 and MAT 150. Class, 3 hrs.; credit, 3 s.h.; fall, spring.
3.00 credit hours. Lecture.

MAT.150L
Precalculus Lab
0.00 credit hours. Lecture. MAT.150 (Required, Concurrent).

MAT.151
Calculus I
Derivatives and their interpretations and applications are covered. Topics include limits, derivative rules, implicit differentiation, curve sketching, and optimization problems. Emphasis is placed on polynomial, exponential, and logarithmic functions, with applications to biology, physics, and chemistry.
3.00 credit hours. Lecture.

MAT.152
Calculus II
Integration and its interpretation, techniques, and applications are covered. Topics include indefinite, definite, and improper integrals, as well as first-order differential equations, with applications to biology, physics, and chemistry.
3.00 credit hours. Lecture. MAT.151 (Required, Previous).

MAT.171
Calculus I (Advanced)

Derivatives and their interpretations and applications are covered in depth. Topics include limits, derivative rules, implicit differentiation, curve sketching, and optimization problems. Emphasis is on applications to biology, physics, and chemistry.
3.00 credit hours. Lecture.

MAT.172
Calculus II (Advanced)
Integration, its interpretation, and its applications are covered in depth. Topics include indefinite, definite, and improper integrals, as well as first order differential equations, partial derivatives and repeated integrals, with applications to biology, physics and chemistry.
3.00 credit hours. Lecture. MAT.171 (Required, Previous).

MAT.197
Computer Applications
This course provides a hands-on introduction to Microsoft Office applications-word processing, spreadsheets, charting, and presentations-as well as computer concepts that are fundamental to the field of health sciences.
3.00 credit hours. Lecture.

MAT.241
Linear Algebra
This course covers linear algebra topics and provides students with the mathematical tools to work with discrete data and phenomena. The concepts of matrices, determinants, vector spaces, and linear transformations will be introduced. Students will learn the methods of solving a system of linear equations, calculating eigenvectors and eigenvalues, diagonalizing symmetric matrices, and minimizing the loss function.
3.00 credit hours. Lecture. MAT.151 (Required, Previous).

MAT.261
Statistics
An introduction to descriptive and inferential statistical principles. Topics include summary statistics, regression, normal distribution, hypothesis testing, and estimation of parameters. Emphasis is placed on applications to biology, chemistry, and physics.
3.00 credit hours. Lecture.

MAT.450A
ST: Applied Biostatistics
Special Topics course. The course covers applied biostatistical methods and data analysis. Topics include survival analysis, regression models, and analysis of different study designs. Emphasis is placed on scientific reasoning and understanding of statistics used in scientific journal articles. Students will be introduced to statistical programming languages in order to obtain hands-on experience in applying selected methods on real data.
3.00 credit hours. Lecture. MAT.461 (Required, Previous).

MAT.461
Biostatistics
The continuation of MAT 261 covers topics including power analysis and sample size determination, ANOVA, post hoc tests, risk ratios, regression analyses, and selected nonparametric methods. Emphasis is placed on scientific reasoning: reading, writing, interpreting, and validating statistical analyses found in public health, behavioral, and health sciences journal articles. Students will utilize software to develop written and oral presentations.
3.00 credit hours. Lecture. MAT.261 (Required, Previous).

MAT.532
Directed Study
Supervised study in computer sciences and mathematics involving a survey of existing knowledge, self-instructed and/or faculty assisted inquiry into previously published data or methodologies, or other faculty approved study of a non-research nature.
1.00 - 3.00 credit hours. Lecture.

MAT.763
Advanced Statistics
Covers commonly practiced statistical methods and experimental designs used in research. Topics include analysis of variance, regression, and nonparametric statistics. Some coursework requires interpreting and validating statistical analyses in research papers.
3.00 credit hours. Lecture. MAT.261 (Recommended, Previous).

Clinical Research (MCR)

MCR.801
Pharmaceutical Research and Development: From Discovery To Market
Students will learn about the activities and processes involved in development of a new product from discovery through postmarketing.
3.00 credit hours. Lecture.

MCR.802
Research Methodology and the Development Of Protocols and Proposals
Students will learn the elements required to develop a scientifically sound clinical protocol or research proposal. They will evaluate the processes required to develop a feasible and relevant research question, understand research methodology, and choose a study design.
3.00 credit hours. Lecture.

MCR.803
Conducting Clinical Research Studies
Conducting clinical research according to good clinical practices is key to the success of any clinical study. Students will learn the requirements for the successful conduct of clinical research from the FDA, IRB, industry sponsor, and clinical investigator perspectives.
3.00 credit hours. Lecture. MCR.802 (Required, Previous) or MCR.801 (Required, Previous or Concurrent)

MCR.804
Graduate Project in Clinical Research
Students will independently research and develop a clinical protocol and the accompanying study schema, data collection instruments, and informed consent document. Upon completion, they will present and defend their protocol as a Capstone Project.
3.00 credit hours. Lecture. MCR.802, MCR.803 (Required, Previous).

Physician Assistant Studies—Manchester/Worcester (MPA)

MPA.527
Health Systems Science I
Designed to highlight professionalism, history of the PA profession, and the health systems science parameters of advocacy, insurance, risk management, and healthcare delivery. Culture-based interprofessional education is provided, the public health system is introduced as well as topics on provider self-care. The research module is started in Health Systems Science I and will continue in Health Systems Science II.
1.00 credit hours. Lecture.

MPA.528
Health Systems Science II
Designed to highlight medical and ethical responsibilities of physician assistants, global health, social determinants of health, HIPAA training, professional liability, completing the research module started in Health Systems Science I. Addresses interviewing and communication skills while respecting cultural influences throughout the lifespan including end of life care and treatment adherence. Addresses different needs of the military, LGBTQ, and substance dependency populations.
3.00 credit hours. Lecture. MPA.527 (Required, Previous).

MPA.530
Clinical Medicine I
This course is an introduction to clinical medicine. The principles of clinical medicine are taught, including the pathophysiology of disease, classic presentations and examination findings, differential diagnosis, and treatments. Topics covered by organ system in Clinical Medicine I, includes conditions related to dermatology, infectious disease, HEN(O)T, ophthalmology, pulmonology, and endocrinology.
6.00 credit hours. Lecture.

MPA.531
Clinical Medicine II
Students continue to build upon the knowledge and skills attained in MPA 530 and study the presentation, work-up, and treatment of multiple conditions. As with Clinical Medicine I, the topics differ across Clinical Medicine I, II, and III. This section, Clinical Medicine II, includes conditions and diseases related to the cardiovascular, peripheral vascular, gastroenterology, nutrition, genitourinary and nephrologic systems and genetics.

6.00 credit hours. Lecture. MPA.527, MPA.530, MPA.538, MPA.541, MPA.546 (Required, Previous); MPA.542, MPA.547 (Required, Previous or Concurrent).

MPA.532
Clinical Medicine III
Students build upon the knowledge and skills attained in MPA 530 and 531 and study the presentation, work-up, and treatment of multiple conditions. As with Clinical Medicine I and II, the topics differ across the courses. This section includes conditions and diseases related to the neurologic, orthopedic, rheumatologic, hematologic and oncologic systems and psychiatry.
5.00 credit hours. Lecture. MPA.530, MPA.531 (Required, Previous or Concurrent).

MPA.538
Patient Assessment I
Students learn the foundational skills and techniques to gather a complete history and perform a thorough physical examination of a simulated patient and document findings of that examination. Students integrate knowledge obtained in Clinical Medicine, Pharmacology, Health Care Issues with courses' objective. During laboratory sessions, students learn proper use of diagnostic equipment and technique to perform a comprehensive physical examination.
4.00 credit hours. Lecture. MPA.530 (Required, Previous or Concurrent).

MPA.538L
Patient Assessment I Lab
Students learn foundational skills and techniques required to gather a complete history and perform a thorough physical examination of a simulated patient. Students integrate knowledge obtained in MPA 530. During laboratory sessions, students learn proper use of diagnostic equipment and technique to perform a comprehensive physical examination of the skin, head, neck, eyes, ENT and CV/PV. They also learn how to perform mental status exam.
0.00 credit hours. Laboratory.

MPA.539
Patient Assessment II
Students learn the foundational skills and techniques to gather a complete history and perform a thorough physical examination of a simulated patient and document findings of that examination. Students integrate knowledge obtained in Clinical Medicine, Pharmacology, Health Care Issues with courses' objectives. During laboratory sessions, students learn proper use of diagnostic equipment and technique to perform a comprehensive physical examination.
3.00 credit hours. Lecture. MPA.538 (Required, Previous).

MPA.539L
Patient Assessment II Lab
Builds upon the foundational skills and techniques learned in MPA 538 to complete a thorough physical examination. Students integrate knowledge of the structure and function of the human body, coupled with laboratory sessions emphasizing the proper use of diagnostic equipment and technique, to perform a comprehensive physical examination.
0.00 credit hours. Lecture.

MPA.540
Patient Assessment III
Students learn the foundational skills and techniques required to gather a complete history and perform a thorough physical examination of a simulated patient and document findings of that examination. Students integrate knowledge obtained in Clinical Medicine, Pharmacology, and Health Care Issues with courses' objective. During laboratory sessions, students learn proper use of diagnostic equipment and technique to perform a comprehensive physical examination.
3.00 credit hours. Lecture. MPA.538, MPA.539 (Required, Previous or Concurrent).

MPA.540L
Patient Assessment III Lab
This course builds upon the foundational skills and techniques learned in the Patient Assessment courses I and II, MPA 538 and 539 to complete a thorough physical examination. Students integrate knowledge of the structure and function of the human body, coupled with laboratory sessions emphasizing the proper use of diagnostic equipment and technique, to perform a comprehensive physical examination.
0.00 credit hours. Laboratory. MPA.538, MPA.539 (Required, Previous).

MPA.541
Pharmacology I

Pharmacodynamic, pharmacokinetic and pharmacotherapeutic principles are introduced to provide a foundation for the study of pharmacology and therapeutics. Combined lecture and an active learning exercises are designed to develop the pharmacologic and therapeutic skills that a physician assistant needs to enhance patient care in clinical practice, focusing on pharmacokinetics, pharmacotherapeutics, the autonomic nervous system, pulmonary, endocrine and infectious disease.
2.00 credit hours. Lecture. MPA.530 (Required, Previous or Concurrent).

MPA.542
Pharmacology II
Students build upon the knowledge and skills obtained in MPA 541. Combined lecture and active learning exercises are designed to develop the pharmacologic and therapeutic skills that a physician assistant needs to enhance patient care in clinical practice, focusing on cardiology, peripheral vascular disease, gastroenterology, nephrology/urology and pain management/ drug addiction and prescription writing.
3.00 credit hours. Lecture. MPA.530, MPA.541 (Required, Previous); MPA.531 (Required, Previous or Concurrent).

MPA.543
Pharmacology III
Students build upon the knowledge and skills obtained in MPA 541 and 542. Combined lectures and active learning exercises are designed to develop the pharmacologic and therapeutic skills physician assistants need to enhance patient care in clinical practice, focusing on hematology, oncology, neurology (including sleep disorders, headaches, neuropathies, seizures, Alzheimer's, & Parkinson's disease), cardiac vasopressors/inotropes, rheumatoid arthritis, gout, and psychopharmacology.
2.00 credit hours. Lecture. MPA.531, MPA.542 (Required, Previous); MPA.532 (Required, Previous or Concurrent).

MPA.544
Clinical Anatomy
Examines human morphology and the fundamental relationships between neurological, musculoskeletal, cardiovascular, gastrointestinal, respiratory, renal and reproductive systems with conceptual presentations of every major region of the human body. Emphasis is on clinical application of this knowledge.
3.00 credit hours. Lecture.

MPA.544L
Clinical Anatomy
Examines human morphology and the fundamental relationships between neurological, musculoskeletal, cardiovascular, gastrointestinal, respiratory, renal and reproductive systems with conceptual presentations of every major region of the human body. Emphasis is on clinical application of this knowledge.
0.00 credit hours. Laboratory.

MPA.546
Physiology/Pathophysiology I
Students learn integrative human physiology and pathophysiology involving the cardiovascular, pulmonary, renal, and musculoskeletal systems with an emphasis upon homeostatic mechanisms and etiologies of disease. The interrelationships of function and dysfunction at the molecular, cellular and tissue level, organ and systemic level provide a foundation for MPA 530 Clinical Medicine I.
2.00 credit hours. Lecture. MPA.530 (Required, Previous or Concurrent).

MPA.547
Physiology/Pathophysiology II
Students will learn integrative human physiology and pathophysiology involving the gastrointestinal, musculoskeletal, renal, immune and nervous systems with an emphasis upon homeostatic mechanisms and the etiologies of disease states. Recognition of the interrelationship of function and dysfunction at the molecular, cellular and tissue levels, organ and systemic levels provides students with the foundation for MPA Clinical Medicine II and III.
3.00 credit hours. Lecture. MPA.530, MPA.546 (Required, Previous); MPA.531 (Required, Previous or Concurrent).

MPA.550
Emergency Medicine
Students learn medical disorders and traumatic injuries that commonly present to the emergency department. Utilizing a case-based format, students learn the appropriate diagnostic and therapeutic measures to treat or stabilize patients with life-threatening trauma or illness.
2.00 credit hours. Lecture. MPA.530, MPA.531 (Required, Previous)

MPA.552

Medical Procedures and Surgery
Through lectures and laboratory exercises, students learn to perform surgical scrubbing and gowning, minor surgical procedures (suturing, incision and drainage, toenail removal, skin biopsy), splinting, wound care, intravenous insertions, injections, nasogastric tubes placement, Foley catheter placement, joint injection/aspiration, lumbar puncture, slit lamp use, bedside ultrasound, amongst other procedures. Students learn the basic principles of surgery, including preoperative, intraoperative, postoperative care.
2.00 credit hours. Lecture. MPA.528, MPA.531, MPA.539, MPA.542, MPA.547 (Required, Previous).

MPA.552L
Medical Procedures Lab
Through lectures and laboratory exercises, students learn how to perform procedures such as suturing, splinting, wound care, intravenous insertions, injections, placement of nasogastric tubes, and Foley catheter placement. Students also learn the principles of surgery, including preoperative, intraoperative, and postoperative care, and minor surgical procedures.
0.00 credit hours. Laboratory.

MPA.554
Special Populations
Students learn about the primary care subspecialties of women's health, pediatrics, geriatrics. This class is taught in a modular format using a variety of learning methods, including traditional lectures and interactive techniques, such as case-based learning and a simulated on call activity.
4.00 credit hours. Lecture. MPA.530, MPA.531 (Required, Previous).

MPA.620
Professional Development I
During the clinical phase, students prepare for transition to the professional role by developing employment skills and learning about professional practice issues. Students learn a framework necessary to achieve and maintain certification.
2.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPA.621
Professional Development II
Physician Assistants (PAs) are a versatile component of the U.S. health care workforce. During the clinical phase, students prepare for transition to the professional role by developing employment skills and learning about professional practice issues. This course will include discussion on healthcare policy, coding, billing, reimbursement, licensing & credentialing, malpractice and professionalism and includes the completion of the Medication-Assisted Treatment (MAT) Waiver Training for Physician Assistants.
2.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPA.622
Professional Development III
Students synthesize the knowledge and skills obtained during the program through successful completion of a summative OSCE (objective structured clinical examination), completion of the Procedures and Technical Skills Passport, and completion of the summative multiple-choice examination. By demonstrating competency in the above methods of assessment, students will have attained the competencies for graduation.
2.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.600
Medicine I Clerkship
These rotations provide clinical experience with common diseases and the manifestation of acute and chronic illnesses. Learning experiences include the traditional approach to direct, initial and comprehensive care for patients of all ages as well as continuity of care for the individual patient and the family.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.601
Medicine Elective
These rotations provide clinical experience with common diseases and the manifestation of acute and chronic illnesses. Learning experiences include the traditional approach to direct, initial and comprehensive care for patients of all ages as well as continuity of care for the individual patient and the family.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.602

Family Medicine
This rotation teaches the application of medical knowledge to the evaluation of primary care problems encountered in general medicine. Understanding of these disorders is accomplished during the accurate collection of data, identification of problems, and development of differential diagnosis and management plans. Students interview and examine patients, synthesize information to identify problems, and formulate and implement therapeutic plans. Health promotion and health maintenance are an integral part of the rotation.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.603
Pediatrics
This rotation provides clinical experience with normal infant, child, and adolescent development as well as with common diseases of childhood. Learning experiences include but are not limited to eliciting history from the parent/patient, performing the appropriate developmental screening, and developing a rapport with the patient so that an appropriate physical examination can be performed. Diagnoses of common illnesses and patient/parent education in preventive issues also are emphasized.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.604
Psychiatry
This rotation provides clinical experience with patients diagnosed with common psychiatric disorders. The student gains familiarity with the use of the DSM-V in classifying mental illness and is exposed to a variety of treatment modalities for psychiatric disorders. This rotation may be observation only.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.605
Surgery
This rotation provides clinical experience with medical conditions requiring surgical treatment. Exposes students to the behaviors, techniques, and procedures involved in the setting of the operating suite. Learning experiences include, but are not limited to, pre-op histories and physicals, intra-operative procedures and assisting, and post-op management of surgical patients.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.606
Women's Health
This rotation provides clinical experience in normal female healthcare to include prenatal and gynecologic care. Education of patients and preventive care from menarche to menopause and beyond are emphasized.
5.00 credit hours. Lecture. MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.607
Emergency Medicine
This rotation provides clinical experience with common urgent and emergent health problems. Students are exposed to minor and more serious life-threatening emergencies, as well as some trauma cases.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.609
General Elective Rotation
Upon completion, the student is able to use the problem-oriented approach to elicit a medical history, perform a pertinent physical examination, obtain indicated laboratory studies, assess the results, formulate a management plan, transmit information, and assist in the implementation of appropriate therapy for the common problems encountered in these rotations.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

MPAC.609T
International Rotations
General elective rotation.
5.00 credit hours. Lecture. MPA.532, MPA.540, MPA.543, MPA.550, MPA.552, MPA.554 (Required, Previous).

Magnetic Resonance Imaging (MRI)

MRI.305
Patient Care in MRI
In this online course, students become familiar with the basics of patient care through the use of case studies, online discussions, and up-to-date online and text materials. Topics include patient interactions, transfer and immobilization

techniques, vital signs, infection control, medical emergencies, and an introduction to contrast media used in magnetic resonance imaging.
2.00 credit hours. Lecture. BEH.250, LIB.220O, PHY.275 (Required, Previous).

MRI.401
Principles of Magnetic Resonance Imaging
Students learn physical principles of magnetic resonance imaging based on discussion of both classical and quantum physics. Topics include magnetic field properties, electromagnetic spectrum, system hardware, instrumentation, tissue characteristics, spatial localization, and the basics of pulse sequencing.
3.00 credit hours. Lecture. BEH.250, LIB.220O, PHY.275 (Required, Previous).

MRI.402
Introduction to Clinical MRI
Students become familiar with the clinical aspects of magnetic resonance imaging. Students use information provided in the didactic portion of this course to acquire skills related to patient care management and the basic flow of a magnetic resonance facility. Students complete a one-week clinical observation in preparation for clinical rotations.
1.00 credit hours. Lecture. LIB.220 (Required, Previous); MRI.305, MRI.401, MRI.405, RSC.310 (Required, Previous or Concurrent).

MRI.405
Magnetic Resonance Imaging Safety and Applications
Students learn to understand MRI from the standpoint of safety and clinical application. Personal safety, safety of co-workers, and patient safety and comfort are discussed as a primary responsibility of the technologist. Students learn about special patient care issues unique to MRI through a case study approach.
3.00 credit hours. Lecture. BEH.250, LIB.220O, PHY.275 (Required, Previous).

MRI.410
Magnetic Resonance Imaging Procedures
Students utilize knowledge obtained in MRI Principles to understand and build standard MRI protocols used for imaging procedures. Protocol parameters, coil selection, and imaging options for all anatomic regions are presented. In addition, students learn advanced imaging procedures, indications for contrast-enhanced imaging, and application of postprocessing procedures.
3.00 credit hours. Lecture. MRI.305, MRI.401, MRI.405O, RSC.310O (Required, Previous); MRI.402 (Required, Previous or Concurrent).

MRI.415
Magnetic Resonance Image Production and Quality
Students utilize knowledge obtained in MRI Principles to build and apply proper pulse sequence parameters for optimization of MR images. Artifact reduction based on appropriate imaging option selection is discussed. Students learn to maximize image quality while ensuring both the safety and comfort of the patient.
3.00 credit hours. Lecture. MRI.401, MRI.402, MRI.405, LIB.220, MRI.410 (Required, Previous).

MRI.418
MRI Skills Lab I
Students will observe and practice imaging and patient management skills that are required to obtain high quality MR images while maintaining the safety and comfort of the patient. This course is a progressive skills-based system using performance objectives and simulated MRI exams. Students will use MRI simulation software in lab and independently to meet the course objectives.
1.00 credit hours. Laboratory. MRI.305, MRI.401, MRI.402, MRI.405 (Required, Previous); RSC.110 (Required, Concurrent).

MRI.420C
Clinical Internship I
Students practice patient care and safety, and become familiar with coil and protocol selection and basic scanning parameters. They use information provided during the lab to practice patient care and imaging skills at an assigned clinical facility under the direct supervision of a registered MRI technologist. Students have access to the facilities, personnel, examinations, and materials to meet the course objectives.
4.00 credit hours. Clinical. MRI.401, MRI.405 (Required, Previous); MRI.410 (Required, Previous or Concurrent).

MRI.421C
Clinical Internship II

Students continue to practice patient care and safety, and perform coil and protocol selection and basic scanning parameters. They build on the knowledge learned during lab to practice patient care and imaging skills at an assigned clinical facility under the direct supervision of a registered MRI technologist. Students will begin to work on the required ARRT competencies and will have access to the facilities, personnel, examinations, and materials to meet the course objectives.
10.00 credit hours. Clinical. MRI.401, MRI.402, MRI.405, MRI.410, MRI.420C, RSC.310, RSC.325, LIB.220 (Required, Previous).

MRI.422C
Clinical Internship III
Students achieve competency in obtaining high-quality MR images while maintaining the safety and comfort of patients. This progressive competency-based course takes place at a clinical education facility and uses performance objectives based on the ARRT requirements as a measure of achievement.
10.00 credit hours. Clinical. MRI.415, MRI.421C (Recommended, Previous); MRI.430 (Required, Previous or Concurrent).

MRI.425C
Advanced Certificate Clinical Internship
The student will become familiar with the clinical aspects of magnetic resonance imaging and will use the clinical experience to acquire the necessary skills to complete the required performance competencies in order to be eligible to apply for the ARRT MRI registry exam.
8.00 credit hours. Clinical. MRI.401, MRI.405 (Required, Previous).

MRI.428
MRI Skills Lab II
The student will observe and practice the necessary imaging and patient management skills that are required to obtain high quality MR images while maintaining the safety and comfort of the patient. This course uses a progressive skills-based system of performance objectives and simulated MRI exams. The student will have access all they need to meet the course objectives.
1.00 credit hours. Laboratory. MRI.410, MRI.420C (Required, Previous); MRI.415 (Required, Concurrent).

MRI.430
Magnetic Resonance Pathology
Students will recognize common pathology visualized on MR images utilizing course content and case studies provided online. Students will complete pathology research assignments by applying new and previously learned knowledge to demonstrate the student's ability to select appropriate scanning parameters that demonstrate the various types of injury and disease with MR Imaging.
3.00 credit hours. Lecture. MRI.401, MRI.402, MRI.410, RSC.310, RSC.325 (Recommended, Previous).

MRI.435
MRI Registry Review
The student will participate in program review instruction and assessments. This course will both reinforce essential material as well as identify specific areas of learning which are not fully mastered. The student will establish a plan to become proficient in all content areas required to pass the national registry for MRI technologists and to function in a medical imaging department.
2.00 credit hours. Lecture. MRI.415 (Recommended, Previous); MRI.430 (Required, Concurrent).

Medical Sciences (MSC)

MSC.345
Emergency Medical Technician
Students learn the essentials of pre-hospital emergency care including basic anatomy, patient assessment, airway management, and other critical considerations in emergency situations. The course includes lecture, supervised hands-on practice, and required observation hours. Students are prepared to take the written and practical Emergency Medical Technician certification exam issued by the Commonwealth of Massachusetts and the National Registry of EMTs.
4.00 credit hours. Lecture.

MSC.601
Principles of Genetics and Genomics
This course provides the foundational knowledge of genetics for precision medicine. Students discuss Mendelian genetics, examine chromosomal variations and cellular processes, and examine techniques such as chromosomal mapping and sequencing. Students are exposed to a variety of relevant genetic resources, utilize critical thinking to evaluate case studies, and discover how diseases can be treated with precision medicine.

3.00 credit hours. Lecture.

MSC.602
Clinical Pharmacogenomics
This course, designed for current and future healthcare providers, explores the genetic basis of drug response and emphasizes current applications of pharmacogenomics in the clinic. Students will interpret pharmacogenomic test results, analyze evidence-based guidelines, and optimize pharmacotherapy outcomes using genetic information. In addition, students will examine contemporary challenges associated with direct-to-consumer genetic testing and implementing pharmacogenomics into clinical practice.
2.00 credit hours. Lecture.

MSC.602E
Clinical Pharmacogenomics
This course, designed for current and future healthcare providers, explores the genetic basis of drug response and emphasizes current applications of pharmacogenomics in the clinic. Students will interpret pharmacogenomic test results, analyze evidence-based guidelines, and optimize pharmacotherapy outcomes using genetic information. In addition, students will examine contemporary challenges associated with direct-to-consumer genetic testing and implementing pharmacogenomics into clinical practice.
2.00 credit hours. Lecture.

MSC.603
Ethical, Legal, and Social Implications Of Precision Medicine
Course explores the ethical, legal, and social implications (ELSI) of precision medicine through didactic teaching, group work, and class discussion. Contributions of precision medicine toward health equity and health inequality are critically examined, debated, and addressed. Students critique and elevate the ethical, legal, and social shortcomings and strengths of precision medicine through oral and written work throughout the course.
2.00 credit hours. Lecture.

MSC.603E
Ethical, Legal, and Social Implications Of Precision Medicine
This course explores the ethical, legal, and social implications of precision medicine through both didactic learning and interactive review of current case studies. Students will engage in virtual group discussions that facilitate their ability to dissect these complex issues. In the culminating exercise, students will present their own case studies highlighting independent analysis of the ethical, legal, and social issues.
2.00 credit hours. Lecture.

MSC.604
Genomic Biomarkers in Cancer Care
Personalized medicine is at the forefront of cancer therapy with genomic information used in the diagnosis and treatment of cancer. The student will learn to interpret tumor sequencing reports, determine how results affect cancer prognosis and outcome, and to select appropriate therapies that target the cancer specifically
2.00 credit hours. Lecture. MSC.601 (Required, Previous or Concurrent).

MSC.605
Gene Therapy
Gene therapy is a promising treatment option for some genetic conditions. This course offers a way for professionals to learn about gene therapy and advances happening in the field to improve treatment of certain genetic diseases. Students learn fundamental concepts of gene therapy, including key differences between ex vivo and in vivo gene therapies, and their application to treat inherited genetic conditions.
2.00 credit hours. Lecture. MSC.601 (Required, Previous).

MSC.607
Digital Health: Foundations, Innovations And Applications
This course explores the evolving landscape of digital health, emphasizing emerging technologies, data analytics, and precision medicine applications. Students will critically analyze digital health solutions, discuss ethical considerations, and evaluate the implementation of digital health innovations in clinical settings. Assessments include quizzes, discussions, an infographic, a concept map, and a collaborative project.
2.00 credit hours. Lecture. MSC.601 (Required, Previous).

Medication Safety Management (MSM)

MSM.701
Introduction to Quality Healthcare

This course will familiarize students with the definition, evolution, and implications of quality in healthcare. Students will utilize various methods to assess quality in healthcare, formulate quality criteria and standards, and apply models for quality improvement. Students will learn how to construct a monitoring system and measure outcomes to successfully implement a quality improvement plan.
2.00 credit hours. Lecture.

MSM.702
Introduction to Medication Safety
This course will expose students to medication safety concepts utilized in a variety of settings. Students will critically assess various adverse drug events and recommend corresponding prevention strategies that incorporate both human and system factors. Students will have a bachelor's degree and currently be practicing in a healthcare setting.
2.00 credit hours. Lecture.

MSM.703
Communication and the Team Approach
In this course students will learn principles of effective verbal and nonverbal communication and the impact on patient safety. Students will learn elements of an effective team and utilize team based methods to increase patient safety. Students will utilize various techniques to improve interprofessional and personal communication to enhance patient safety.
2.00 credit hours. Lecture. MSM.702 (or equivalent), MSM.701 (Required, Previous).

MSM.704
Medication Safety Tools, Analysis & Application
This course will expand upon the medication safety and quality concepts discussed in the introductory courses. Students will be given the opportunity to apply and develop medication safety tools for use within their own work environments. Safety assessment techniques and a framework for a medication safety strategic plan will also be discussed.
3.00 credit hours. Lecture. MSM.702 (or equivalent), MSM.701 (Required, Previous).

MSM.830
Measurement, Error, and Improvement
Students explore the linkage between data measures, human error, and organizational improvement in patient safety and quality management. The science of human factors engineering will be explored from the intersection of error and systems thinking. Hindsight bias, human error, environmental conditions, contributing factors, and culture will be discussed.
3.00 credit hours. Lecture. MSM 704 (or equivalent), MSM.701, MSM.702, MSM.703 (Required, Previous).

MSM.850
Patient Safety Capstone and Informatics
Students to integrate their experience and training in identifying, analyzing and solving relevant patient safety issues facing healthcare organizations. With faculty guidance, students develop recommendations for sustainable actions, managing change, and assessing progress. Students will utilize prior learning, professional experience, and existing evidence to develop, support, and disseminate their strategic recommendations to professional audiences.
4.00 credit hours. Lecture. MSM.703, MSM.704, MSM.830 (Required, Previous).

Nuclear Medicine Technology (NMT)

NMT.260
Fundamentals of Nuclear Medicine
Students will explore the fundamentals of nuclear medicine and molecular imaging. Students will describe basic concepts in radiation physics and detection, radiation safety and regulations, pharmaceutical and radiopharmaceutical agents, instrument operations and quality control, and clinical procedures.
3.00 credit hours. Lecture. BIO.210, PHY.181 (Required, Previous).

NMT.270
Radiopharmaceuticals
Study of major radiopharmaceuticals used in nuclear medicine. Topics include method of preparation, mechanism of action, quality control, toxicity, cost, and practical considerations regarding their use in nuclear medicine.
3.00 credit hours. Lecture. NMT.215,NMT.265, NMT.271, NMT.310O, NMT.330C (Required, Previous).

NMT.305
Cardiovascular Imaging

Students will discuss cardiovascular anatomy and physiology, as well as normal/abnormal physiologic responses to stress and cardiac pathologies. Students will summarize the acquisition parameters, processing techniques, radiopharmaceuticals, and interventional agents specific to nuclear cardiology protocols, including an in-depth study of SPECT/CT imaging. Students will also describe cardiovascular patient care activities, including electrocardiogram interpretation and emergency response procedures.
3.00 credit hours. Lecture. BIO.210, NMT.260, NMT.310O, RSC.250 (Required, Previous).

NMT.310O
Radiation Sciences and Regulations
Students will apply principles of radiation physics and interactions with matter to the study of radiation biology. Students will describe how the theories of radiobiology translate into practical radiation protection practices using the concepts of time, distance, shielding, and risk vs. benefit. Students will also explore survey meter instrumentation and the regulations pertaining to occupationally and nonoccupationally exposed individuals.
3.00 credit hours. Lecture. PHY.181, MAT.141 (Required, Previous); NMT.260 (Required, Previous or Concurrent).

NMT.320
Nuclear Medicine Imaging
Students will review the anatomy and physiology of various body systems. Students will summarize the acquisition parameters, processing techniques, radiopharmaceuticals, and interventional agents specific to common nuclear medicine protocols. Students will discuss planar, dynamic, SPECT, and SPECT/CT imaging techniques. Finally, students will discuss common pathologies and perform basic image interpretation, as well as describe gamma camera instrumentation and quality control.
6.00 credit hours. Lecture. BIO.210, BIO.210L, NMT.260, NMT.310O, RSC.250 (Required, Previous).

NMT.330C
Nuclear Medicine Internship I
Each rotation provides supervised practical internship education in nuclear medicine technology at hospital or radiopharmacy affiliates. Learning modules are also provided to enhance student learning throughout clinical rotations.
4.00 credit hours. Lecture. NMT.260, NMT.310O, RSC.250 (Required, Previous).

NMT.331C
Nuclear Medicine Technology Internship II
Each rotation provides supervised practical internship education in nuclear medicine technology at hospital or radiopharmacy affiliates. Progression is contingent upon successful completion of previous rotation. Learning modules are also provided to enhance student learning throughout clinical rotations.
8.00 credit hours. Lecture. NMT.305, NMT.320, NMT.330C, NMT.340 (Required, Previous).

NMT.332C
Nuclear Medicine Internship III
Each rotation provides supervised, practical internship training in nuclear medicine technology at hospital affiliates. Progression is contingent upon successful completion of previous rotation. Learning modules are also provided to enhance student learning throughout clinical rotations.
7.00 credit hours. Lecture. NMT.331C, NMT.350, NMT.390 (Required, Previous).

NMT.340
Molecular Imaging and Theranostics
Students will summarize the acquisition parameters, processing techniques, radiopharmaceuticals, interventional agents, and therapeutic agents specific to molecular imaging and therapy protocols. Students will discuss PET and PET/CT imaging techniques, as well as the unique properties of theranostic radiopharmaceuticals. Finally, students will discuss common pathologies and perform basic image interpretation, as well as describe PET and PET/CT instrumentation and quality control.
3.00 credit hours. Lecture. NMT.260, RSC.250 (Required, Previous); NMT.305, NMT.310O, NMT.320, NMT.330C (Required, Previous or Concurrent).

NMT.350
Radiopharmacy
Students will study radiopharmacy design, USP standards, and regulations, as well as dose calibrator and well counter instrumentation. Students will also discuss the diagnostic/therapeutic radiopharmaceuticals, adjunct medications, and contrast agents used in nuclear medicine, including routes of administration and methods of localization. Additionally, students will practice related quantitative skills, including radioactive decay, generator yield, kit/dose concentrations, and unit dose adjustments.
3.00 credit hours. Lecture. NMT.305, NMT.310O, NMT.320, NMT.330C, NMT.340 (Required, Previous).

NMT.390
Problem Solving in Nuclear Medicine I
Students demonstrate their knowledge of nuclear medicine technology through a variety of mock certification examinations. Additionally, they will determine their best approach to the examinations through study methods and test taking strategies required for the board certification exams.
2.00 credit hours. Lecture. NMT.305,NMT.310O, NMT.320, NMT.340 (Required, Previous).

NMT.391
Problem Solving in Nuclear Medicine II
In this second course of the sequence, students will demonstrate their knowledge of nuclear medicine technology through a variety of mock certification examinations. Additionally, they will continue to refine their best approach to the examinations through study methods and test taking strategies required for the board certification exams.
2.00 credit hours. Lecture. NMT.331C, NMT.350 (Required, Previous); NMT.390 (Recommended, Previous).

NMT.532
Directed Study Nuclear Medicine Technology
This directed study course will allow the student additional opportunities to develop the skills necessary to be successful in the Nuclear Medicine Technology program and clinical setting.
0.00 - 3.00 credit hours. Lecture.

Nursing (NUR)

NUR.201
Professional Practice I
This course focuses on the theoretical, historical and contemporary underpinnings affecting the nurse as an individual and professional delivering care to patients in varying settings and healthcare delivery models. Students engage in significant pre-class work to facilitate active learning strategies employed during class time using the synchronous conferencing tool Collaborate.
3.00 credit hours. Lecture. NUR.204, NUR.245 (Required, Previous or Concurrent).

NUR.204
Health and Wellness I
This course introduces the student to the professional nursing role with a focus on basic skills acquisition that supports the health and wellness of diverse populations across the lifespan.
6.00 credit hours. Lecture. NUR.204L (Required, Concurrent); NUR.201O, NUR.245 (Required, Previous or Concurrent).

NUR.204EL
Health and Wellness I Experiential Learning
0.00 credit hours. Laboratory. NUR.204 (Required, Concurrent).

NUR.204L
Health and Wellness I Lab
0.00 credit hours. Laboratory. NUR.204 (Required, Concurrent).

NUR.226
Pathophysiology and Pharmacology I
Course provides the student with foundation for understanding pathophysiologic processes common to select health problems across the lifespan in diverse populations and efficacious use of pharmacological agents. Disease processes are explored with focus on etiology, pathogenesis, and clinical manifestations. Students learn pharmacodynamics and pharmacokinetics of pharmaceutical agents and their use in health promotion, treatment, and symptom management across the lifespan.
3.00 credit hours. Lecture. NUR.201O, NUR.204, NUR.245 (Required, Previous or Concurrent).

NUR.245
Healthcare Participant I
Students acquire foundational knowledge of health assessment and health promotion, and their relationship to comprehensive nursing care. Students learn to perform a comprehensive and holistic assessment of the patient across the lifespan, including systematic collection, analysis, and synthesis of health data from patients and secondary sources. Students develop the organizational and critical thinking skills necessary for the planning and delivery of nursing care, and integrate the essential nursing core competencies and concepts of health promotion, risk reduction, and disease prevention in the clinical laboratory setting.

4.00 credit hours. Lecture. BIO.255, LIB.220 (Required, Previous).

NUR.245EL
Health Assessment and Promotion Experiential Learning
Students acquire foundational knowledge of health assessment and health promotion, and their relationship to comprehensive nursing care. Students learn to perform a comprehensive and holistic assessment of the patient across the lifespan, including systematic collection, analysis, and synthesis of health data from patients and secondary sources. Students develop the organizational and critical thinking skills necessary for the planning and delivery of nursing care, and integrate the essential nursing core competencies and concepts of health promotion, risk reduction, and disease prevention in the clinical laboratory setting.
0.00 credit hours. Laboratory. NUR.245 (Required, Concurrent).

NUR.245L
Health Assessment and Promotion
Students acquire foundational knowledge of health assessment and health promotion, and their relationship to comprehensive nursing care. Students learn to perform a comprehensive and holistic assessment of the patient across the lifespan, including systematic collection, analysis, and synthesis of health data from patients and secondary sources. Students develop the organizational and critical thinking skills necessary for the planning and delivery of nursing care, and integrate the essential nursing core competencies and concepts of health promotion, risk reduction, and disease prevention in the clinical laboratory setting.
0.00 credit hours. Laboratory. NUR.245 (Required, Concurrent).

NUR.250
Chemistry of Nutrition
Students will analyze the basic chemical principles of the science of nutrition and discuss their influence on the promotion of good health and disease prevention. Topics will include a study of chemical components of food (natural and synthetic), the biochemical breakdown of food and how nutrients and vitamins function in human metabolism.
3.00 credit hours. Lecture.

NUR.300
Service Learning Within the Profession Of Nursing
Students acquire foundational knowledge about the characteristics of the nursing professional and the roles and responsibilities of the baccalaureate prepared nurse through a variety of service learning venues. This experiential learning will allow the student to develop a sense of caring, social responsibility, civic engagement and cultural competence. The student will participate in community service and meet in seminars to discuss the work thus, integrating learning and service.
1.00 credit hours. Lecture. NUR.226, NUR.245 (Required, Previous); NUR.325, NUR.330 (Required, Previous or Concurrent).

NUR.301
Professional Practice II
This course focuses on the theoretical, historical and contemporary underpinnings affecting the nurse as an individual and professional delivering care to patients in varying settings and healthcare delivery models. Students engage in significant pre-class work to facilitate active learning strategies employed during class time using the synchronous conferencing tool Collaborate.
3.00 credit hours. Lecture. NUR.201O (Required, Previous); NUR.304, NUR.322 (Required, Previous or Concurrent).

NUR.304
Health and Wellness II
This course is an introduction to medical surgical content. The course and provides a framework for application of professional nursing concepts and exemplars within the professional nursing roles. Integration of previous health care knowledge and skills into the role development of the professional nurse as a provider of patient-centered care, patient safety advocate, member of the healthcare team, and a member of the profession. Emphasis is on clinical decision-making for patients and their families.
7.00 credit hours. Lecture. NUR.201, NUR.204, NUR.245 (Required, Previous); NUR.301O, NUR.320, NUR.322 (Required, Previous or Concurrent).

NUR.304L
Health and Wellness II Lab
0.00 credit hours. Laboratory. NUR.304 (Required, Concurrent).

NUR.320

Nursing Seminar II
This primary focus of this course is to facilitate the beginning nursing student with the synthesis, integration, and application of the knowledge gained through their academic courses during their second term in nursing core.
1.00 credit hours. Lecture. NUR.301, NUR.304, NUR.322 (Required, Previous or Concurrent).

NUR.322
Health Participant I
This course introduces the nursing student to the attributes associated with the recipients of healthcare: individual, families, and community. The course explores the concepts of healthcare disparities, social justice, and healthcare equity.
3.00 credit hours. Lecture. NUR.301, NUR.304, NUR.320 (Required, Previous or Concurrent).

NUR.330
Information and Healthcare Technologies
Students acquire foundational knowledge of nursing and healthcare informatics, gaining an understanding of the theories and social and economic forces influencing the development and application of information and healthcare technologies. Students begin to use these technologies in the delivery of nursing care and learn to adapt emerging technologies to clinical nursing practice. Students explore the legal and ethical ramifications of using information and healthcare technologies to improve patient safety and the quality of healthcare and to protect patient privacy.
3.00 credit hours. Lecture. NUR.206, NUR.208, NUR.215, NUR.226, NUR.245,(Required, Previous).

NUR.350
Scholarly Inquiry
This course applies the concepts and principles acquired in all prerequisite and Level I and II courses. The course introduces the research process, methods of qualitative and quantitative research and ethical considerations inherent in research. The course prepares the student to apply critical thinking to evaluate and critique professional literature and other sources of information. The course correlates research to the concepts of evidence-based practice and best practice.
3.00 credit hours. Lecture. All NUR 200-level courses (Required, Previous).

NUR.401
Professional Practice III: Evidence-Based Practice
Students acquire an understanding of the historical development of nursing as a scholarly discipline, and appraise its contemporary standing in the scientific community. Students learn the research process, methods of qualitative and quantitative research, and the legal and ethical considerations of engaging in nursing research. Students learn to apply critical thinking to the evaluation of professional and popular literature and other sources of information, apply research-based knowledge from nursing and the sciences as the evidence base for nursing practice, and participate in the research process.
3.00 credit hours. Lecture. NUR.301O or 301, NUR.304, NUR.320, NUR.322 (Required, Previous); NUR.404 or NUR.422 (Required, Previous or Concurrent).

NUR.404
Health and Wellness III: Care of Vulnerable Populations
Students apply concepts and principles acquired in all prerequisite and concurrent nursing courses to the provision of care for vulnerable populations to include; patients and families, as well as patients with psychosocial issues in diverse clinical settings. Professional nursing concepts include; clinical judgement, communication, evidence-based practice are integrated along with additional QSEN competencies to deliver safe patient care.
6.00 credit hours. Lecture. NUR.301O or 301, NUR.304, NUR.320, NUR.322 (Required, Previous); NUR.401O, NUR.422 (Required, Previous or Concurrent).

NUR.404L
Health and Wellness III Lab
0.00 credit hours. Laboratory. NUR.404 (Required, Concurrent).

NUR.410
Professional Role Development
Students will examine historical, philosophical, ethical and legal aspects of nursing practice, contemporary issues facing nursing and the influence of societal trends on nursing practice and on today's health care delivery system.
3.00 credit hours. Lecture. NUR.250O (Required, Previous or Concurrent).

NUR.422
Health Participant II

Students will develop the knowledge, skills to care for patients with psychosocial needs and psychiatric disorders in diverse clinical settings. Students will use a holistic approach to assessment, care, and management of persons with psychosocial issues and selected psychiatric disorders. Students learn to incorporate contemporary social issues as they relate to the mental and social health of patients and their families.
5.00 credit hours. Lecture. NUR.301O or 301, NUR.304, NUR.320, NUR.322 (Required, Previous); NUR.404 or NUR.401O (Required, Previous or Concurrent).

NUR.426
Community Health Nursing
This Bridge course for registered nurses provides a theoretical background for the study of community health nursing, emphasizing the assessment of interrelationships between individuals, families, aggregates, and communities in determining the health status of each. Students gain an understanding of health promotion, health maintenance, and disease prevention among populations. The sociopolitical, economic, environmental, and cultural impact on population health is examined.
4.00 credit hours. Lecture. NUR.410 (Required, Previous).

NUR.440
Transition to Graduate Studies
Course supports associate degree-prepared nurses in transitioning to advanced studies. Students develop essential knowledge, skills and competencies to excel in bridge-year courses. Course emphasizes proficiency in navigating Blackboard Learning Management System and utilizing university resources effectively. Focus includes active learning strategies, organizational and time management skills, academic writing from evidence, oral communication and presentation skills, and effective strategies for reviewing current literature.
1.00 credit hours. Lecture.

NUR.454
Health Assessment and Clinical Reasoning
Course introduces foundational skills essential to safe, person-centered nursing care across the lifespan. Students learn to obtain complete and accurate health histories, perform holistic physical assessments, and interpret data from primary and secondary sources. Emphasis is placed on demonstrating clinically relevant assessment techniques, applying decision-making frameworks to guide nursing care, and integrating ethical, legal, and interprofessional principles into nursing practice.
5.00 credit hours. Lecture.

NUR.501O
Professional Practice IV: Nursing Integrations
Students will demonstrate learning acquired across the curriculum in preparation for RN licensure. Students will complete a variety of standardized assessments and proctored testing across the semester to assess knowledge acquired to date. Remediation strategies will be individualized to support student first time licensure success upon graduation.
3.00 credit hours. Lecture. NUR.401O, NUR.404, NUR.422 (Required, Previous); NUR.520 or NUR.522 (Required, Previous or Concurrent).

NUR.504
Health and Wellness IV: Complex Care Across the Lifespan
Students integrate concepts and principles acquired in all prerequisite and concurrent nursing courses. Students expand their knowledge and skills to care for patients with complex health problems across the lifespan to include; cancer, infectious disease, trauma, and end-of-life care. Students have opportunities to demonstrate principles of coordination of care in both acute and chronic settings.
7.00 credit hours. Lecture. NUR.401O, NUR.404, NUR.422 (Required, Previous); NUR.501O, NUR.520, NUR.522 (Required, Previous or Concurrent).

NUR.504L
Health and Wellness IV Lab
0.00 credit hours. Laboratory. NUR.504 (Recommended, Concurrent).

NUR.520
Nursing Seminar IV
The Nursing Seminar III supports the synthesis, application and integration of key concepts of the forth semester courses.
1.00 credit hours. Lecture. NUR.501O, NUR.504, NUR.522 (Required, Previous or Concurrent).

NUR.522
Health Participant III: Nursing Leadership
The student will examine contemporary theories of management, leadership and change related to nursing practice. Discussions are focused on effective communication within inter-professional teams, addressing conflict, delegating successfully, and building teams. The student will utilize knowledge acquired across the curriculum to develop strategies to address a contemporary nursing practice issue.
4.00 credit hours. Lecture. NUR.401O, NUR.404, NUR.422 (Required, Previous); NUR.501O, NUR.504, NUR.520 (Required, Previous or Concurrent).

NUR.532
Directed Study
Supervised study in professional nursing involving a survey of existing knowledge, self-instructed or faculty assisted inquiry into previously published data or methodologies; or other faculty approved study of a non-research nature.
1.00 - 3.00 credit hours. Lecture.

NUR.701
Professional Role Development in Nursing
In this course, students will compare and analyze the theories and conceptual models relevant to advanced roles in the nursing profession. Students will examine historical and contemporary professional issues related to various advanced roles in nursing. Role differentiation, role transition, and role development will be analyzed in the context of social and healthcare environments. Students will integrate knowledge of role transition and development into advanced nursing practice as clinicians, practitioners, leaders, and/or educators.
3.00 credit hours. Lecture.

NUR.702
Human Diversity, Ethics, Social and Policy Issues
Students will learn to examine the social, ethnocultural, and demographic barriers in seeking and receiving healthcare in the United States and will recommend interventions for assuring the delivery of appropriate and individualized healthcare to diverse populations. Students also will learn about healthcare systems and strategies in order to assume a leadership role in the management of clinical practice.
3.00 credit hours. Lecture.

NUR.703
Advanced Health Assessment
Students will learn to conduct an advanced comprehensive history and a physical and psychological assessment of signs and symptoms, pathophysiologic changes, and psychosocial variations of the client across the lifespan. Students will apply diagnostic reasoning in physical diagnosis and develop a differential diagnosis based on the health history and identified signs and symptoms.
5.00 credit hours. Lecture. NUR.701, NUR.706, NUR.707 (Required, Previous).

NUR.706
Advanced Pathophysiology
Students will critically examine the advanced physiologic and pathologic mechanisms of diseases. The focus of the course is to provide students with advanced concepts and theories related to pathophysiological processes that occur across the lifespan. Knowledge gained from this course provides a firm foundation for the advanced practice nurse to interpret changes in normal and abnormal function and to assess individuals' responses to the pharmacologic management of disease processes.
3.00 credit hours. Lecture.

NUR.707
Advanced Clinical Pharmacology
Students will primarily learn the knowledge needed for safe medication prescription and monitoring to clients across the lifespan. The course is designed to meet requirements for prescription writing by advanced practice nurses. It builds upon basic knowledge of pharmacology, commonly used drugs, and drug interactions used in the treatment of selected health conditions. Students will explore pharmacodynamics, pharmacokinetics, and pharmacotherapeutics in relation to common body system illnesses and diseases.
3.00 credit hours. Lecture.

NUR.715
Psychopharmacology for the Psychiatric Mental Health Nurse Practitioner

Students will acquire knowledge for the safe and effective use of medications for psychiatric mental disorders in populations across the life span. Emphasis is on the selection and use of psychoactive medications in the treatment of clients experiencing psychiatric disorders and in the restoration of wellness.
3.00 credit hours. Lecture. NUR.703 (Required, Previous).

NUR.720
Introduction to Graduate Studies
Course promotes self-directed learning, emphasizing self-reflection, resilience, and fostering personal growth alongside academic achievement. Students learn to apply principles of academic integrity, ethical scholarship, and professional writing. Students refine organizational and time management skills to balance academic responsibilities to minimize stress and avoid burnout; develop effective study techniques and test-taking strategies; and foster community through meaningful engagement with faculty and peers.
1.00 credit hours. Lecture.

NUR.722
Nurse Practitioner Role and Professional Identity Development
This course explores the evolving role of the advanced practice nurse (APN) in complex healthcare systems. Topics include leadership, advocacy, policy development, ethical decision-making, interprofessional collaboration, and strategies to improve healthcare delivery and patient outcomes.
2.00 credit hours. Lecture. NUR.720 (Required, Previous or Concurrent).

NUR.724
Advanced Physiology and Pathophysiology
Advanced Physiology and Pathophysiology explores physiological and pathophysiological mechanisms of disease across the lifespan. Emphasis is placed on clinical reasoning, genetic and environmental influences, evidence-based interventions, and interprofessional collaboration to optimize patient outcomes.
3.00 credit hours. Lecture. NUR.720, NUR.722 (Required, Previous or Concurrent).

NUR.726
Advanced Pharmacology for the Nurse Practitioner
This course explores pharmacokinetics, pharmacodynamics, and evidence-based prescribing for diverse populations. Emphasis is placed on safe medication management, regulatory compliance, and interprofessional collaboration. Students will analyze emerging pharmacologic trends and refine clinical reasoning to prevent adverse drug events and optimize patient outcomes.
3.00 credit hours. Lecture.

NUR.732
Advanced Population Health Concepts
This course explores population health and social determinants of health (SDOH) to address health disparities and promote equity. Students will analyze epidemiological data, design community-based interventions, and apply evidence-based strategies to improve health outcomes at local, national, and global levels.
2.00 credit hours. Lecture.

NUR.801
Survey of Telemedicine
This course introduces foundational knowledge of telemedicine technology and its application into advanced practice nursing. Focus is on role of advanced practice nurse using telemedicine in care of populations across the life span with consideration to ethical, legal and human diversity. Students evaluate use of technology infrastructure models to support telemedicine services to provide access to health care in different settings.
1.00 credit hours. Lecture. NUR.701 (Required, Previous).

NUR.804
Quality and Leadership for Advanced Practice
This course explores leadership theories, quality improvement frameworks, and strategies for managing change in complex healthcare environments. Students will evaluate financial, regulatory, and ethical considerations while developing skills in interprofessional collaboration, decision-making, and patient-centered advocacy.
2.00 credit hours. Lecture.

NUR.805
Basic Counseling Theory and Techniques for The Psychiatric Mental Health Nurse Practitioner
Along with the general types of counseling offered to clients, prominent individual, group and family therapy approaches are considered. In addition, an opportunity to learn, explore and practice the foundational evidence-based interaction

skills essential in the delivery of psychotherapy is provided. Relevant ethical concerns are noted and addressed during role play counseling sessions.
3.00 credit hours. Lecture. NUR.703, NUR.801 (Required, Previous); NUR.805C (Required, Concurrent).

NUR.805C
Basic Counseling Theory and Techniques for The Psychiatric Mental Health Nurse Practitioner Clinical
Along with the general types of counseling offered to clients, prominent individual, group and family therapy approaches are considered. In addition, an opportunity to learn, explore and practice the foundational evidence-based interaction skills essential in the delivery of psychotherapy is provided. Relevant ethical concerns are noted and addressed during role play counseling sessions.
1.00 credit hours. Lecture. NUR.805 (Required, Concurrent).

NUR.806
Psychiatric Mental Health Nurse Practitioner I
This is the first of two sequential courses that will build upon prerequisite knowledge of theoretical concepts of advanced practice nursing and related disciplines. Students will identify and implement appropriate culturally sensitive interventions for the care of patients and their families with mental health care needs across the lifespan. Ethical and legal issues, health promotion and disease prevention are emphasized.
3.00 credit hours. Lecture. NUR.715 ,NUR.805, NUR.805C (Required, Previous); NUR.806C (Required, Concurrent).

NUR.806C
Psychiatric Mental Health Nurse Practitioner I Clinical
This is the first of two sequential courses that will build upon prerequisite knowledge of theoretical concepts of advanced practice nursing and related disciplines. Students will identify and implement appropriate culturally sensitive interventions for the care of patients and their families with mental health care needs across the lifespan. Ethical and legal issues, health promotion and disease prevention are emphasized.
4.00 credit hours. Lecture. NUR.715, NUR.805, NUR.805C (Required, Previous); NUR.806C (Required, Concurrent).

NUR.807
Psychiatric Mental Health Nurse Practitioner II
In Psychiatric Mental Health Nurse Practitioner II, the student will deliver a holistic healthcare managed approach to caring for patients with mental health needs across the lifespan. Emphasis is placed on the acute, complex and chronic psychiatric mental healthcare needs of patients and their families in a culturally diverse environment within integrated and coordinated care.
3.00 credit hours. Lecture. NUR.715, NUR.805, NUR.805C, NUR.806C (Required, Previous); NUR.807C (Required, Concurrent).

NUR.807C
Psychiatric Mental Health Nurse Practitioner II Clinical
This is the first of two sequential courses that will build upon prerequisite knowledge of theoretical concepts of advanced practice nursing and related disciplines. Students will identify and implement appropriate culturally sensitive interventions for the care of patients and their families with mental health care needs across the lifespan. Ethical and legal issues, health promotion and disease prevention are emphasized.
4.00 credit hours. Lecture. NUR.715, NUR.805, NUR.805C, NUR.806, NUR.806C (Required, Previous); NUR.807 (Required, Previous or Concurrent).

NUR.808
Foundations of Primary Care and Diagnostics
This foundational didactic course introduces nurse practitioner students to the core principles of primary care, focusing on health promotion, disease prevention, and screening across the lifespan. Through coursework and case-based learning, students will develop clinical reasoning skills, explore motivational interviewing techniques, and examine evidence-based approaches to assessing, diagnosing, and managing commonly seen acute and chronic conditions. Preventive care strategies and interprofessional collaboration are integrated to prepare students for future clinical practice in comprehensive, patient-centered primary care.
2.00 credit hours. Lecture. NUR.720, NUR.722, NUR.724, NUR.732 (Required, Previous).

NUR.809
Family Primary Care I (Pediatric/Women's Health)
Students will focus on advanced practice nursing and health care management of pediatric patients and women with reproductive needs- and their families. The student will provide primary health care services to women with needs related to the reproductive system. During the pediatric section, students will focus on performing comprehensive

health and developmental assessments for children and their families, in addition to managing episodic and chronic disease states. Health promotion and disease/injury prevention will be an integral component of the course.
6.00 credit hours. Lecture. NUR.810 (Required, Previous).

NUR.810
Family Primary Care II: Advance Practice Nursing Theory And Intervention
Students will focus on advance practice nursing and the healthcare management of adults. They will provide comprehensive primary healthcare services that are evidence based, personalized, and cost-effective to adults with acute and chronic health conditions. Students will learn course content that includes developmental, physiological, and psychosocial changes relative to health maintenance and disease prevention.
6.00 credit hours. Lecture. NUR.703, NUR.801 (Required, Previous).

NUR.811
Family Primary Care III
Students will focus on advanced practice nursing and the healthcare management of older adults. They will provide comprehensive primary healthcare services that are evidence based, personalized, and cost-effective to older adults with acute and chronic health conditions. Students will learn course content that includes developmental, physiological, and psychosocial changes relative to health maintenance and disease prevention.
6.00 credit hours. Lecture. NUR.810 (Required, Previous).

NUR.812
Management of Psychiatrics Mental Health Conditions: Psychopharmacology and Psychotherapeutics
This course introduces nurse practitioner students to the foundational theories, models, and principles of psychotherapy grounded in evidence-based practice, while integrating core psychopharmacological concepts. Emphasis is placed on developing key therapeutic strategies for individuals, groups, and families across the lifespan. Students will explore the neuroscientific underpinnings of psychotherapy, examine essential medication considerations and learn to apply culturally competent interventions.
2.00 credit hours. Lecture. NUR.720, NUR.722, NUR.724, NUR.732 (Required, Previous).
NUR.815
Psychiatric Mental Health Nursing I (Child and Adolescent)
Students review the major childhood mental health disorders looking at epidemiology, health and mental health promotion and prevention, risk factors, cultural factors, assessment issues specific to children and adolescents, use of selected diagnostic/screening tools and rating scales, as well as evidence-based child and adolescent specific treatment and therapeutics. This course also reviews medical comorbidities in this population and family based therapies and interventions.
6.00 credit hours. Lecture. NUR.701, NUR.702, NUR.703, NUR.706, NUR.707 and NUR.708 (Required, Previous); NUR.715 (Required, Concurrent).

NUR.816
Scholarship Advanced Nursing: Building an Evidence-Based Practice
This course builds upon the research process/concepts learned in baccalaureate nursing education. Students refine their skills in critiquing qualitative and quantitative scholarship to determine the meaning and appropriateness of evidence as it relates to advanced practice nursing. Students also learn to utilize new knowledge derived from evidence to improve practice and associated health outcomes in the primary care setting.
3.00 credit hours. Lecture. NUR.801, NUR.805, NUR.805C, or NUR.810 (Required, Previous).

NUR.823
Translating and Integrating Scholarship Into Practice
Students apply the core concepts of research and scholarship to challenge current practices, procedures, or policies in order to address a specific gap in nursing practice. This course will provide the student the opportunity to explore the cyclical scholarship/research process in which nurses engage including identifying questions needing answers, searching or creating evidence for potential solutions or innovations, evaluating outcomes, and identifying additional questions.
3.00 credit hours. Lecture. NUR.816 (Required, Previous).

NUR.825
Psychiatric Mental Health Nursing II (Young and Middle Aged Adult)
Students review the major young and middle age mental health disorders looking at epidemiology, health and mental health promotion and prevention, risk factors, cultural factors, assessment issues specific to young and middle age adults. The use of select diagnostic/screening tools, as well as evidenced-based specific treatments and therapeutics are applied. Common medical comorbidities in this population are also reviewed.

6.00 credit hours. Lecture. NUR.701, NUR.702, NUR.703, NUR.706, NUR.707, NUR.708, and NUR.815 or NUR.805 (Required, Previous); NUR.820 (Required, Concurrent).

NUR.835
Psychiatric Mental Health Nursing III (Older Adult)
Students review the major older adult mental health disorders looking at epidemiology, health and mental health promotion and prevention, risk factors, cultural factors, and assessment issues. Select diagnostic/screening tools, as well as evidenced-based specific treatments and therapeutics are applied. Common medical comorbidities in this population are also reviewed with the impact of mental health disorders on the client's family.
6.00 credit hours. Lecture. NUR.701, NUR.702, NUR.703, NUR.706, NUR.707, NUR.708, NUR.815, and NUR.825 (Required, Previous); NUR.820 (Required, Previous or Concurrent).

NUR.900
Clinical DNP Practice Foundations Analysis
The student will explore the advanced practice role as it relates to translating evidence into practice. The student will explore the theoretical foundations of practice, conceptual models to implement research, and strategies to implement evidence-based practice. The student will examine factors contributing to the evolution of the development of the doctorate in nursing practice role.
3.00 credit hours. Lecture.

NUR.901
Introduction to Doctoral Studies and DNP Degree Competencies
In this course, students critically examine the knowledge, skills, and competencies essential to the role of the DNP-prepared advanced practice nurse. The course facilitates transition to doctoral-level scholarship by introducing academic expectations, the DNP program structure, and available School and University resources. Students refine academic writing skills, initiate portfolio development, and engage with faculty/peers to establish foundation within the DNP community.
2.00 credit hours. Lecture.

NUR.905
Organizational and System Leadership for Quality Improvement
This course explores the role of the DNP as an organizational and system leader for Continuous Quality Improvement within complex health care systems via an evidence-based lens. Elements of this course include principles of business and finance, healthcare finance models, quality performance management, health data analytics, and benchmarking.
3.00 credit hours. Lecture.

NUR.906
Evidence-Based Practice Methods to Dr Quality Improvement
Course prepares DNP students to lead in evidence-based clinical scholarship and quality improvement. Students develop foundational skills in research methodology, with emphasis on critically appraising research to inform evidence-based practice, designing strategies for disseminating findings, and fostering theoretically-grounded systems-level thinking to advanced quality and safety improvement. Course content is integrated and applied in action-oriented assignments and 30 experiential clinical hours.
4.00 credit hours. Lecture.

NUR.910
Methods for Evidence-Based Practice
The student will understand qualitative and quantitative statistics. The student will be able to read and interpret medical literature with application to clinical practice. Students will garner familiarity of biostatistics as it applies to clinical practice. The student will disseminate evidence from inquiry to diverse populations using multiple methods.
3.00 credit hours. Lecture. NUR.900, NUR.905 (Required, Previous).

NUR.915
Healthcare Policy and Advocacy From Local to Global Issues
The Doctor of Nurse Practice student will analyze and evaluate healthcare policy proposals within ethical, legal, and related issues from the perspective of stakeholders. The student will evaluate healthcare delivery, organizational systems, and impact on health. Emphasis will be placed on the student to lead and advocate for social justice, equity, and ethical policies in healthcare arenas.
3.00 credit hours. Lecture.

NUR.920
Advanced Concepts in Population Health

This course introduces the student to comprehensive concepts in population health by examining health promotion and prevention strategies through the use of healthcare quality measures, diversity principles, cultural, socioeconomic, ethical dimensions of care and population safety considerations. Concepts of epidemiology and biostatistics in public health as it relates to advanced nursing practice will be discussed. Basic elements of grant writing will be introduced relative to population health.
3.00 credit hours. Lecture. NUR.910 (Required, Previous); NUR.915 (Required, Concurrent).

NUR.930
Research Translation I
The Doctoral Nurse Practice student will participate in clinical practice, collaborative teamwork, and practice-based evaluation in their advanced practice role. Doctoral Nurse Practice students will lead a scholarly project with emphasis on the evaluation of quality practice with a focus on vulnerable populations.
3.00 credit hours. Clinical, Lecture. NUR.900, NUR.905, NUR.910 (Required, Previous).

NUR.931
Research Translation II
Doctoral Nurse Practice students will participate in clinical practice, collaborative teamwork, and practice-based evaluation in their advanced practice role. Students will participate in a mentored practicum related to their chosen Scholarly Practice Project. Doctoral Nurse Practice students will lead the implementation of a scholarly project with emphasis on the evaluation of quality practice with a focus on vulnerable populations.
3.00 credit hours. Lecture. NUR.900, NUR.905, NUR.910, NUR.930 (Required, Previous).

NUR.932
Independent Study Graduate Nursing
1.00 - 6.00 credit hours. Lecture.

NUR.933
Research Translation III
This course is the third in a three-course sequence designed to support the DNP student in completion of the Scholarly Practice Project (SPP). Students will analyze and evaluate data and disseminate findings of the evidence-based practice SPP which addresses the identified micro, meso, or macro systems organizational or practice problem previously identified through review of the literature. Dissemination will include a final defense of the SPP and communication of results to the healthcare community with the goal of improving healthcare outcomes. This course includes 185 clinical experiential hours.
3.00 credit hours. Lecture. NUR.915, NUR.920, NUR.931 (Required, Previous).

NUR.EXAM
TEAS Exam
The TEAS measures and assesses a person's ability to be academically prepared to enter and succeed in nursing school. Successful completion of this exam is required for progression into the professional phase of the nursing program.
0.00 credit hours. Lecture.

NUR.RES1
Nursing Residency I
0.00 credit hours. Lecture.

NUR.RES2
Nursing Residency II
0.00 credit hours. Lecture.

NUR.RES3
Nursing Residency III
0.00 credit hours. Lecture.

Optometry (OPT)

OPT.610
Clinical Anatomy
This course provides foundational knowledge of human anatomy from the optometric perspective. Accordingly, the course emphasizes the anatomy of the eye and body. Students will be able to develop an appropriate, detailed knowledge of anatomy of the human and to develop a multidimensional understanding of the anatomical relationships of the structures in the body.

3.00 credit hours. Lecture. OPT.656 (Required, Concurrent).

OPT.610L
Clinical Anatomy Lab
This course provides foundational knowledge of human anatomy from the optometric perspective. Accordingly, the course emphasizes the anatomy of the eye and body. Students will be able to develop an appropriate, detailed knowledge of anatomy of the human and to develop a multidimensional understanding of the anatomical relationships of the structures in the body.
0.00 credit hours. Laboratory. OPT.610 (Required, Concurrent).

OPT.611
Ocular Anatomy and Physiology
The mission of this course is to provide students with a foundational knowledge of human ocular anatomy and physiology appropriate for an optometrist. Students will learn about the anatomical organization of eye components as well as physiology associated with the eyes' functioning from a clinical perspective.
2.00 credit hours. Lecture.

OPT.612
Ocular Biochemistry
Students will gain a foundational knowledge of the biochemical processes of the human eye and body appropriate for an optometrist.
2.00 credit hours. Lecture. OPT.610 (Required, Previous); OPT.709 (Required, Previous or Concurrent).

OPT.613
Neuro Anatomy and Physiology
The mission of this course is to provide foundational knowledge of human neuroanatomy appropriate for an optometrist. Students will learn about the head and neck, and undertake a detailed survey of cranial nerves as well as the parasympathetic and sympathetic nervous systems.
3.00 credit hours. Lecture. OPT.610, OPT.656, OPT.721 (Required, Previous).

OPT.622
Visual Perception
Students will gain foundational knowledge in various aspects of visual perception from a clinical perspective. The course emphasizes monocular sensory aspects of vision including sensitivity to light, light and dark adaptation, spatial and temporal properties of vision, motion perception, psychophysical method and visual threshold.
3.00 credit hours. Lecture. OPT.630 (Required, Previous).

OPT.630
Geometric and Physical Optics
Students will learn geometrical and physical optics appropriate for an optometrist. The course covers the basic theory of optics, which is necessary for understanding optometric refraction, ophthalmic corrective lenses, ophthalmic instruments and low-vision devices. Topical areas in geometrical optics include vergence, refraction, reflection, ray tracing, prisms, thin and thick lenses, mirrors, optical models of the eye and refractive errors. The physical optics portion of the coursecovers the wave nature of light as well as quantum theory.
5.00 credit hours. Lecture.

OPT.630L
Geometric and Physical Optics Lab
Students will learn geometrical and physical optics appropriate for an optometrist. The course covers the basic theory of optics, which is necessary for understanding optometric refraction, ophthalmic corrective lenses, ophthalmic instruments and low-vision devices. Topical areas in geometrical optics include vergence, refraction, reflection, ray tracing, prisms, thin and thick lenses, mirrors, optical models of the eye and refractive errors. The physical optics portion of the course covers the wave nature of light as well as quantum theory.
0.00 credit hours. Laboratory.

OPT.631
Visual Optics
Students will learn visual and physical optics appropriate for an optometrist.
4.00 credit hours. Lecture. OPT.630 (Required, Previous); OPT.622 (Required, Concurrent).

OPT.631L
Visual Optics Lab

0.00 credit hours. Laboratory. OPT.630 (Required, Previous); OPT.631 (Required, Concurrent).

OPT.632
Ophthalmic Optics
Students will learn ophthalmic optics appropriate for an optometrist.
5.00 credit hours. Lecture. OPT.622, OPT.631, OPT.652C (Required, Previous).

OPT.632L
Ophthalmic Optics Lab
Students will learn ophthalmic optics appropriate for an optometrist. This course concerns the optical and physical properties of ophthalmic lenses, as well as lensometry, standards and eyewear design.
0.00 credit hours. Laboratory. OPT.631 (Required, Previous).

OPT.640
Systems Based Physiology
This Systems Based Physiology Course provides an understanding how cells, tissues, organs, and organ systems function together to create one organism. Furthermore, the course lays the basis for understanding diagnosis and treatment of diseases.
2.00 credit hours. Lecture. OPT.613 (Required, Previous).

OPT.650
Optometry Theory and Methods I
This course provides clinical education on basic examination elements, including ocular terminology, clinical hygiene and equipment care, case history, visual acuity, utilization of pretesting equipment, sphygmomanometry, stereoacuity, color vision, and documentation utilizing electronic health records. Students must demonstrate competency for individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
2.00 credit hours. Lecture.

OPT.650L
Optometric Theory and Methods I Lab
This course provides clinical education on basic examination elements, including ocular terminology, clinical hygiene and equipment care, case history, visual acuity, utilization of pretesting equipment, sphygmomanometry, stereoacuity, color vision, and documentation utilizing electronic health records. Students must demonstrate competency for individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
1.00 credit hours. Laboratory.

OPT.652
Optometric Theory and Methods II
This course provides clinical education on examination elements, including refractive and binocular vision assessment, while incorporating relevant basic science components. Students must demonstrate competency for individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
2.00 credit hours. Lecture. OPT.630, OPT.650 (Required, Previous).

OPT.652L
Optometry Theory and Methods II Lab
This course provides clinical education on examination elements, including refractive and binocular vision assessment, while incorporating relevant basic science components. Students must demonstrate competency for individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
1.00 credit hours. Laboratory. OPT.630, OPT.650 (Required, Previous); OPT.652C (Required, Previous or Concurrent).

OPT.653
Optometric Theory and Methods III
This course provides clinical education on examination elements, including advanced anterior segment and posterior segment assessment, while incorporating relevant basic science components. Students must demonstrate competency for individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
2.00 credit hours. Lecture. OPT.631, OPT.652C (Required, Previous).

OPT.653L
Optometric Theory and Methods III Lab
This course provides clinical education on examination elements, including advanced anterior segment and posterior segment assessment, while incorporating relevant basic science components. Students must demonstrate competency for individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
1.00 credit hours. Laboratory. OPT.631, OPT.652C (Required, Previous

OPT.655
Systemic Disease
This introductory course is designed to prepare optometry students to recognize, list and understand the most common systemic diseases as they present in the contemporary practice of Optometry. Emphasis will be on high frequency, high mortality, high morbidity diseases, and may include diseases that have ocular manifestations.
1.00 credit hours. Lecture.

OPT.656
Histology and Embryology
Students will understand the basic concepts related to embryology and histology, especially as they relate to clinical optometry.
3.00 credit hours. Lecture. OPT.610 (Required, Concurrent).

OPT.657
Microbiology
Students will understand the basic concepts related to microbiology, especially as they relate to clinical optometry.
1.00 credit hours. Lecture. OPT.610, OPT.656 (Required, Previous).

OPT.691
Optometry and Public Health
Students will gain an appreciation for the history and contemporary role of public health practice. Students will learn basic public health concepts and applications, particularly as they relate to optometric practice and advocacy, with a special emphasis on the epidemiology of major eye diseases. This course is intended for optometry students.
1.00 credit hours. Lecture.

OPT.699
Research / Independent Study Elective
The course goals are to provide students with a better understanding of optometric research, research design, and research methodology. Students will analyze, develop, and reflect upon a research study chosen by the faculty with student input.
1.00 - 3.00 credit hours. Lecture.

OPT.705
Neurodiagnostics and Visual Neurophysiology
Graduating optometrists must possess robust understanding of retinal and cortical neural processing for spatial, temporal and color vision, and the clinical procedures used to assess retinal and cortical neural function. In this course, students will gain comprehensive understanding of retinal and cortical neural processing in the visual pathway and how neural processing can be assessed in patients through neurodiagnostic techniques.
2.00 credit hours. Lecture. OPT.613, OPT.622 (Required, Previous).

OPT.709
Systemic Pharmacology I
This overview of systemic pharmacology introduces general drug mechanisms followed by an in-depth coverage of autonomic pharmacology. This sets the stage for the topics that follow, including cardiovascular, pulmonary, renal, and gastrointestinal pharmacology. A major course objective is to provide tools necessary to continued learning as drug treatments evolve, including the increasing approval of biologics and gene therapy products.
2.00 credit hours. Lecture. OPT.610, OPT.656 (Required, Previous); OPT.612 (Required, Previous or Concurrent).

OPT.710
Systemic Pharmacology II
Students will develop a firm understanding of pharmacokinetics and pharmacodynamics. They will understand the application of systemic pharmacology with an optometric perspective. Students will understand drug-drug interactions, drug mechanisms, and side effects.
2.00 credit hours. Lecture. OPT.612, OPT.709 (Required, Previous).

OPT.711
Immunology
Students will understand the basic concepts related to immunology as well as the concepts of altered health states.
1.00 credit hours. Lecture. OPT.612 (Required, Previous).

OPT.712
Ocular Pharmacology
Students will demonstrate knowledge of ocular pharmacological principles, including preparations, bioavailability, routes of administration, mechanisms of action, contraindications and side effects, and treatment and management.
3.00 credit hours. Lecture. OPT.710, OPT.711 (Required, Previous).

OPT.721
Visual Development
This course presents ocular embryology and vision science related to vision development in the infant and child. IT also addresses changes in vision with aging. The course covers the effects of early environmental restrictions, changes in vision with aging, visual perceptual skills, and anomalies of child development.
2.00 credit hours. Lecture.

OPT.722
Oculomotor Function
This course presents the oculomotor system. Eye movements are described in detail, including the basic types and their purpose and mechanisms. The course also looks at clinical manifestations of anomalies of these eye movements.
2.00 credit hours. Lecture. OPT.622 (Required, Previous).

OPT.741
Practice and Business Management I
Students will be introduced to the functional business and management areas necessary to operate an eye care practice. They will review the principles of strategy, finance and accounting, marketing, human resources, operations management, and information technology as applied to eye care practice. Students will become familiar with business process analysis and problem solving.
2.00 credit hours. Lecture.

OPT.750
Anterior Segment Ocular Disease I
Students will understand the etiology, signs and symptoms, and treatment and management of various anterior segment ocular diseases and disorders.
4.00 credit hours. Lecture. OPT.640, OPT.711 (Required, Previous).

OPT.751
Optometric Theory and Methods IV
This course provides clinical education on examination elements, including advanced anterior segment and posterior segment assessment, while incorporating relevant basic science components. Students must demonstrate competency in individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
2.00 credit hours. Lecture. OPT.653 (Required, Previous).

OPT.751L
Optometric Theory & Methods IV Lab
This course provides clinical education on examination elements, including advanced anterior segment and posterior segment assessment, while incorporating relevant basic science components. Students must demonstrate competency in individual basic skills used in a primary care examination, communicate appropriate principles of professionalism, and identify normal findings.
1.00 credit hours. Laboratory. OPT.653 (Required, Previous).

OPT.752
Contact Lenses I
Students will be introduced to all aspects of contact lens care. Students will learn about contact lens materials and design, fitting techniques, and patient management.
3.00 credit hours. Lecture. OPT.750 (Required, Previous).

OPT.752L

Contact Lenses I Lab
Students will be introduced to all aspects of contact lens care. Students will learn about contact lens materials and design, fitting techniques, and patient management.
1.00 credit hours. Laboratory. OPT.750 (Required, Previous).

OPT.753
Posterior Segment I
This course provides instruction regarding the classification, epidemiology, anatomy, physiology, and pathology of posterior segment ocular diseases and the critical understandings necessary for diagnosis, treatment, and management of the various conditions. Elements including definitions, classifications, clinical techniques, utilization of equipment, and proper documentation utilizing electronic health records will be emphasized.
4.00 credit hours. Lecture. OPT.750 (Required, Previous).

OPT.754
Low Vision and Geriatrics
Students will learn fundamental low-vision principles, principles of magnification, utilization and selection of low-vision devices, and therapeutic treatment and management.
3.00 credit hours. Lecture. OPT.632, OPT.753 (Required, Previous).

OPT.754L
Low Vision & Geriatrics Lab
Students will learn fundamental low-vision principles, principles of magnification, utilization and selection of low-vision devices, and therapeutic treatment and management.
0.00 credit hours. Laboratory. OPT.630 (Required, Previous).

OPT.755
Pediatrics
Students will learn about the needs of the pediatric population and about pediatric vision testing, treatment, and management. Students also will understand the social and academic demands on the pediatric population.
3.00 credit hours. Lecture. OPT.721, OPT.751, OPT.759, OPT.852, OPT.855 (Required, Previous).

OPT.755L
Pediatrics Lab
Students will learn about the needs of the pediatric population and about pediatric vision testing, treatment, and management. Students also will understand the social and academic demands on the pediatric population.
0.00 credit hours. Laboratory. OPT.650 and OPT.650L (Required, Previous).

OPT.756
Foundations of Binocular Vision
Students will learn the theory behind binocular visual perception, as well as binocular vision testing, treatment, and management, with emphasis on adult treatment and management.
2.00 credit hours. Lecture. OPT.652C (Required, Previous).

OPT.757
Clinical Binocular Vision I Biology
Students will learn binocular vision testing, treatment, and management, with emphasis on adult treatment and management.
3.00 credit hours. Lecture. OPT.652, OPT.722, OPT.756 (Required, Previous).

OPT.758
Neuro-Optometry
This course is a convergence of general neuroanatomy/neurology and clinical manifestations of neurological disorders, especially as these relate to oculomotor and visual function. Students will be able to recognize the presentation of, and describe diagnosis and management of neurological disorders impacting oculomotor and visual function.
2.00 credit hours. Lecture. OPT.766 (Required, Previous); OPT.757 (Required, Previous or Concurrent).

OPT.759
Anterior Segment Ocular Disease II
Students will understand the etiology, signs and symptoms, and treatment and management of various anterior segment ocular diseases and disorders. The focus will be on case discussion, treatment and management of anterior segment ocular disease.
1.00 credit hours. Lecture. OPT.712, OPT.753 (Required, Previous).

OPT.766
Pathophysiology of Systemic Disease
Students will learn integrative human physiology and pathophysiology of the neurological, neuromuscular, cardiovascular, endocrine, hematological, integumentary, pulmonary, hepatic, renal, musculoskeletal and gastrointestinal systems, with an emphasis on systemic conditions pertinent to optometrists.
3.00 credit hours. Lecture. OPT.640, OPT.711 (Required, Previous).

OPT.768
Ocular Surface Disorders and Dry Eye
This course is designed to prepare optometry students to understand, diagnose and appropriately treat ocular surface disease and dry eye. Conditions contributing to dry eye are a common presentation in optometric practice. Using the current literature and a pathophysiological model, the course will discuss the most current theories and approaches to diagnosis and treatment of these common conditions.
1.00 credit hours. Lecture. OPT.750 (Required, Previous); OPT.759 (Required, Concurrent).

OPT.770C
Primary Care Clinic I
Students will gain experience in primary care and optical clinical settings and in conducting vision screenings utilizing skills learned in the Clinical Optometry course sequence. Students will gain the ability to differentiate between normal and abnormal clinical findings. Students will develop an understanding of clinical protocols, billing and coding, and compliance. Students will develop communication skills, including taking a medical history, patient education, and public speaking. Students will develop case presentation skills.
2.00 credit hours. Clinic. OPT.640, OPT.652, OPT.705, OPT.710, OPT.711, OPT.722 (Required, Previous).

OPT.771C
Primary Care Clinic II
Students will gain experience in primary care and pediatric clinical settings utilizing skills learned in the Clinical Optometry course sequence. Students will begin exposure to community health center based Optometry. Students will gain the ability to differentiate between normal and abnormal clinical findings. Students will learn to develop and articulate initial patient management strategies. Students will develop an understanding of clinical protocols, billing and coding, and compliance. Students will develop case presentation skills.
2.00 credit hours. Clinic. OPT.712, OPT.750, OPT.756, OPT.766, OPT.770C (Required, Previous).

OPT.772C
Primary Care Clinic III
Students will gain experience in primary care clinical settings; particularly community health center based Optometry. Students will use skills acquired in the Optometric Theory and Methods course sequence. Students will gain the ability to differentiate between normal and abnormal clinical findings. Students will learn to develop and articulate initial patient management strategies.
2.00 credit hours. Clinic. OPT.751, OPT.752, OPT.753, OPT.771C (Required, Previous); OPT.757 (Required, Previous or Concurrent).

OPT.799
Research / Independent Study Elective
The course goals are to provide students with a better understanding of optometric research, research design, and research methodology. Students will analyze, develop, and reflect upon a research study chosen by the faculty with student input.
1.00 credit hours. Lecture.

OPT.810
Integrative Seminar
Students review patient cases that are frequently encountered in optometric practice. Working in small groups, students integrate information from prior didactic and laboratory courses to arrive at diagnoses and treatment plans for individual cases. Students perform literature searches, differential diagnoses and provide treatment plans for each case then present their findings to the class.
1.00 credit hours. Lecture. OPT.851 (Required, Previous); OPT.758, OPT.759, OPT.855 (Required, Previous or Concurrent).

OPT.820
Cataract and Refractive Surgery

Optometry is evolving to a more medical model of patient care. Graduating optometrists must possess a robust understanding of cataract and refractive surgery, the most commonly-performed ophthalmic surgical procedures. Through lecture didactic, case reports and live observation, students will gain a comprehensive understanding of cataract and refractive surgery- from diagnostics through post-operative management of normal and complicated clinical cases.
1.00 credit hours. Lecture. OPT.632, OPT.653, OPT.759, OPT.855 (Required, Previous).

OPT.830
Professional Ethics
The purpose of this course is to provide a practical overview of ethical principles and challenges that are part of healthcare and professional practice. The course will review ethical theories and their application to clinical practice. Ethical problems that challenge students and practitioners in a changing healthcare environment will be discussed using case studies and current events.
1.00 credit hours. Lecture.

OPT.840
Special Populations and Topics
This course focuses on the specialties of Optometry including; Pediatrics, Low Vision, Advanced Contact Lenses, Vision Therapy, and individuals with developmental disabilities. Through weekly meetings, and participation in the already existent Primary and Specialty Care Optometry Clinic, the student will gain a stronger and more integrated experience in these areas of specialty.
2.00 credit hours. Lecture. OPT.754, OPT.755, OPT.852, OPT.870C (Required, Previous); OPT.879C (Required, Concurrent).

OPT.845
Advanced Optometric Theory and Methods
This course provides clinical education on surgical, laser and medical management of ocular disease. Completion will equip learners with skills, knowledge and competencies required for the highest scope of optometric practice in the United States. The following will be discussed and/or performed: minor surgical techniques; injections; ophthalmic lasers and ultrasound; ocular foreign body assessment and removal; management of corneal injury.
2.00 credit hours. Lecture. OPT.754, OPT.755, OPT.855, OPT.857, OPT.859, OPT.870C (Required, Previous); OPT.845L (Required, Concurrent).

OPT.845L
Advanced Optometric Theory and Methods Lab
This course provides clinical education on surgical, laser and medical management of ocular disease. Completion will equip learners with skills, knowledge and competencies required for the highest scope of optometric practice in the United States. The following will be discussed and/or performed: minor surgical techniques; injections; ophthalmic lasers and ultrasound; ocular foreign body assessment and removal; management of corneal injury.
1.00 credit hours. Lecture. OPT.754, OPT.755, OPT.855, OPT.857, OPT.859, OPT.870C (Required, Previous); OPT.845 (Required, Concurrent).

OPT.851
Glaucoma I
This course provides fundamental instruction regarding the classification, epidemiology, anatomy, physiology, and pathology of glaucoma and the critical understandings necessary for diagnosis, treatment, and management of the disease. Definitions, classifications, clinical techniques, utilization of specialized equipment, and proper documentation utilizing electronic health records will be emphasized.
2.00 credit hours. Lecture. OPT.712, OPT.766 (Required, Previous).

OPT.852
Clinical Binocular Vision II
Students will review binocular vision disorders and be introduced to vision therapy methods. Students will utilize laboratory time to demonstrate competency and understanding of vision therapy and specialized binocular vision techniques.
3.00 credit hours. Lecture. OPT.757 (Required, Previous).

OPT.852L
Clinical Binocular Vision II Lab
Students will review binocular vision disorders and be introduced to vision therapy methods. Students will utilize laboratory time to demonstrate competency and understanding of vision therapy and specialized binocular vision techniques.

0.00 credit hours. Laboratory. OPT.750 (Required, Previous).

OPT.854
Ocular Manifestations of Systemic Disease
This course provides instruction regarding the classification, epidemiology, anatomy, physiology, and pathology of eye-relevant systemic diseases as well as the critical understandings necessary for effective and proper diagnosis, treatment, and management of the various ocular conditions resulting from systemic disorders.
3.00 credit hours. Lecture. OPT.712, OPT.766 (Required, Previous).

OPT.855
Contact Lenses II
Students will be introduced to advanced contact lens care. Students will learn about advanced designs of contact lenses as well as how to manage patients with irregular corneas using contact lenses.
1.00 credit hours. Lecture. OPT.630, OPT.631, OPT.632, OPT.752 (Required, Previous).

OPT.857
Posterior Segment Ocular Disease II
This course is both a review of basic diagnosis, treatment and management in Posterior Segment Ocular Disease in case-based format, and an introduction to advanced concepts in posterior segment ocular disease.
1.00 credit hours. Lecture. OPT.753 (Required, Previous).

OPT.859
Glaucoma II
This course provides instruction regarding the classification, epidemiology, anatomy, physiology, and pathology of advanced and secondary glaucomas. It includes the critical understandings necessary for diagnosis, treatment, and management of the advanced glaucomatous disease.
2.00 credit hours. Lecture. OPT.851 (Required, Previous).

OPT.860
Research and Statistical Methods Biology
The course goals are to provide students with a better understanding of optometric research, research design, statistical analysis and research methodology. Students will analyze, develop, and reflect upon a research study chosen by the faculty with student input. The class will focus on sources for research and proper documentation.
1.00 credit hours. Lecture. OPT.651, OPT.751 (Required, Previous); OPT.691 (Required, Concurrent).

OPT.870C
Primary and Specialty Care Optometry I
Students will gain experience in primary care clinical settings, utilizing skills learned in the Clinical Optometry course sequence. Students will gain the ability to develop differential diagnoses and clinical assessments. Students will learn to develop and articulate initial patient management strategies. Students will participate in glaucoma, vision therapy, contact lens, low vision, and community health clinics Students will develop an understanding of clinical protocols, billing and coding, and compliance.
3.00 credit hours. Lecture. OPT.751, OPT.758, OPT.759, OPT.772C, OPT.851, OPT.852, OPT.855 (Required, Previous).

OPT.879C
Primary and Specialty Care Optometry II
Students will gain experience in multidisciplinary community healthcare clinical settings, utilizing skills learned in the Clinical Optometry course sequence. Students will gain the ability to develop differential diagnoses and patient management strategies. Students will participate in glaucoma, vision therapy, contact lens, low vision, and community health clinics Students will develop the ability to coordinate care with members of a multidisciplinary health and human services team.
3.00 credit hours. Lecture. OPT.754, OPT.755, OPT.810, OPT.820, OPT.857, OPT.859, OPT.870C (Required, Previous); OPT.840 (Required, Previous or Concurrent).

OPT.899
Independent Study
The course goals are to provide students with a better understanding of optometric research, research design, and research methodology. Students will analyze, develop, and reflect upon a research study chosen by the faculty with student input.
0.00 - 1.00 credit hours. Lecture.

OPT.951O
Online Clinical Seminar
Students will perform and post case reviews in an online forum to be evaluated, shared and discussed. Students participate in OPT 951 during each of the three required externships.
3.00 credit hours. Lecture. OPT.741, OPT.830, OPT.840, OPT.845, OPT.879C (Required, Previous).

OPT.EXAM
Optometry Board Exam
Students in the OD degree program are required to attempt all three parts of the National Board of Examiners in Optometry (NBEO) exam, or both parts of the Optometry Examining Board of Canada (OEBC) exam, prior to graduation. In addition, score reports for all NBEO or OEBC exam attempts must be received by the MCPHS School of Optometry prior to the OD degree conferral.
0.00 credit hours. Lecture.

OPTC.971
Externship Rotation 1
Externship rotations represent a full academic year of clinical rotations offered primarily at off-campus sites. All rotations are 16 weeks in duration. Students will gain experience in patient care in a variety of settings, including hospitals, community health centers, private practices, specialty clinics, and multidisciplinary settings.
16.00 credit hours. Lecture. OPT.751, OPT.751L, OPT.879C (Required, Previous).

OPTC.972
Externship Rotation 2
Externship rotations represent a full academic year of clinical rotations offered primarily at off-campus sites. All rotations are 16 weeks in duration. Students will gain experience in patient care in a variety of settings, including hospitals, community health centers, private practices, specialty clinics, and multidisciplinary settings.
16.00 credit hours. Lecture. OPT.751, OPT.752L (Required, Previous).

OPTC.973
Externship Rotation 3
Externship rotations represent a full academic year of clinical rotations offered primarily at off-campus sites. All rotations are 16 weeks in duration. Students will gain experience in patient care in a variety of settings, including hospitals, community health centers, private practices, specialty clinics, and multidisciplinary settings.
16.00 credit hours. Clinical. OPT.870C, OPT.879C (Required, Previous).

Occupational Therapy (OTH)

OTH.500
Contemporary Theory in Occupational Therapy Practice
Theoretical foundations of occupational therapy have evolved into broad and discrete theories that guide occupational therapy practice and scholarship. This course introduces students to the historical perspectives of the profession from which contemporary occupation-based theories have developed. Students gain an understanding of how theory guides clinical reasoning throughout the occupational therapy process.
3.00 credit hours. Lecture.

OTH.505
Clinical Reasoning in Occupational Therapy
Students integrate the Occupational Therapy Practice Framework (OTPF) into key practice areas such as client care, documentation and describing client outcomes. The OTPF is explored in detail allowing students to understand its purpose in defining the domain and scope of occupational therapy practice. Students will gain knowledge and practice skills in activity analysis to develop clinical reasoning skills.
3.00 credit hours. Lecture.

OTH.510
Practice Engagement: Mental Wellness
This course, the first in a series of skills-acquisition courses, focuses on occupational therapy mental health practice across the lifespan. Prevalent mental health conditions are explored with an emphasis on mental health promotion and prevention and the role of occupational therapy intervention. The occupational therapy process is applied in acute care hospital, rehabilitation, outpatient, day programs and community mental health settings.
3.00 credit hours. Clinical, Lecture.

OTH.511
Practice Engagement: Therapeutic Groups

This skills-acquisition course explores the theoretical foundations and evidence-based support for occupational therapy group interventions. Students acquire skills to develop and lead therapeutic group interventions concomitant with developing an in-depth understanding of group dynamics, group-member roles, group process, and integrating this knowledge into group therapy. A structured group supervision model is utilized to provide students active learning opportunities for development of group facilitation and group documentation skills. Prevalent mental health conditions from OTH 510 are integrated into student facilitated groups. Students work with local community-based sites to develop population-based group intervention programs over the semester which will be implemented in the spring semester as part of their first Level I fieldwork experience.
3.00 credit hours. Lecture.

OTH.520
Scholarship in Practice: Evidence-Based Practice
Evidence-based practice (EBP), research utilization (RU), and knowledge translation (KT) are important elements of contemporary occupational therapy practice. In this course students learn about this practice and develop skills related to critiquing quantitative and qualitative research with regard for the levels of evidence, validity, strength and application to the profession of occupational therapy. Students gain an understanding of the importance of creating, exchanging and using research findings for guiding clinical practice.
3.00 credit hours. Lecture.
OTH.525

Practice Engagement: Environments and Technologies
This skills-acquisition course examines the importance of contexts and environments in occupational therapy clinical reasoning with clients, occupational therapy practice settings and service delivery. Key factors include the influence of social determinants, culture, and policy, and physical environments on health, performance, engagement and participation. Community, home, and work environments are emphasized. Intervention skills include application of assistive technology, modification of contexts and environments, ergonomics and universal design principles.
4.00 credit hours. Clinical, Lecture. OTH.500, OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous); OTH.525L (Required, Previous or Concurrent).

OTH.525L
Practice Engagement: Environments and Technologies Lab
0.00 credit hours. Laboratory. OTH.500, OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous); OTH.525 (Required, Previous or Concurrent).
OTH.530
Motor Performance Across the Lifespan
This skills-acquisition course explores human movement from both developmental and recovery perspectives. Motor learning and motor developmental theories are applied to occupational therapy clinical reasoning using activity analysis in the areas of occupations, performance skills, performance patterns and client factors for practice application. Developmental milestones and motor control are emphasized. Treatment approaches (mirror therapy, motor-imagery, virtual reality, action-observation) are explored. Students understand common occupational therapy conditions associated with orthopedic and neurological impairment that impacts the shoulder complex, postural stability, and fine motor control.
4.00 credit hours. Clinical, Lecture. OTH.500, OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous); OTH.530L (Required, Previous or Concurrent).

OTH.530L
Motor Performance Across the Lifespan Lab
0.00 credit hours. Laboratory. OTH.500, OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous); OTH.530 (Required, Concurrent).

OTH.535
Scholarship in Practice: Methodologies
This course builds on OTH 520 Evidence-Based Practice, by enhancing the students' knowledge of the research process, styles of inquiry including quantitative and qualitative methods, quantitative measurement, statistical analysis and professional responsibilities. Students are also be introduced to and apply software/coding methods for quantitative and qualitative data analysis.
3.00 credit hours. Lecture. OTH.500, OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous).

OTH.540
Practice Engagement: Assessment Fundamentals Across the Lifespan
This course builds on the occupational therapy process, incorporating use of assessment tools, intervention, outcomes, and evidence-based practice. This course emphasizes the need for valid and reliable occupational therapy assessment

for intervention. Emphasis is placed on occupational performance and documentation for effective communication of assessment results and intervention outcomes.
3.00 credit hours. Clinical, Lecture. OTH.500, OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous).

OTH.545
Neuroscience in Occupational Performance
This course explores neuroscience as related to the clinical reasoning and decision making of the occupational therapist. The nervous system, central and peripheral, is explored. Students integrate information into intervention planning for common neurological diagnosis seen by the occupational therapist. Students articulate both verbally and through written documentation the influence of neurological function and dysfunction on human occupational performance.
3.00 credit hours. Lecture. OTH.525, OTH.530, OTH.540, OTHC.565 (Required, Previous).

OTH.550
Practice Engagement: Adult Rehabilitation
This skills-acquisition course introduces students to common conditions prevalent in occupational therapy physical disability practice including orthopedic, cardiac, pulmonary, medically complex, and oncologic conditions. This class continues to build on the student knowledge of conditions involving the shoulder complex, elbow, wrist and hand such as arthritis, carpal tunnel syndrome, and hand deformity. Students apply occupation-based intervention aligned with these conditions.
4.00 credit hours. Clinical, Lecture. OTH.525, OTH.530, OTH.540, OTHC.565 (Required, Previous); OTH.550L (Required, Previous or Concurrent).

OTH.550L
Practice Engagement: Adult Rehabilitation Lab
This course introduces students to common conditions prevalent in occupational therapy physical disability practice including orthopedic, cardiac, pulmonary, burn, medically complex, and oncologic conditions. This class continues to build on the student knowledge of conditions involving the shoulder complex, elbow, wrist and hand such as arthritis, carpal tunnel syndrome, and hand deformity. Students apply occupation-based intervention aligned with these conditions.
0.00 credit hours. Lecture. OTH.525, OTH.530, OTH.540, OTHC.565 (Required, Previous); OTH.550 (Required, Previous or Concurrent).

OTH.555
Scholarship in Practice: Applied Designs And Methods
This course builds on evidence-based practice and research methods, focusing on integrating research findings into practice. Translational research will be explored and applied to practice, allowing students to consider the steps needed to apply research findings in community-based partnerships. Single case study design is emphasized to demonstrate practice research possibilities to students. Grant writing methods for practice-based research are introduced.
3.00 credit hours. Lecture. OTH.525, OTH.530, OTH.540, OTHC.565 (Required, Previous).

OTH.560
Systems of Practice: Managing the Practice of Occupational Therapy
This course introduces the basics of management in the healthcare and community health arenas. Students integrate knowledge of the occupational therapy process and evidence-based practice into the management and delivery of services. Students explore and develop knowledge and skills for business and practice success including leadership; management; supervision; intra/interprofessional relationships; standards of practice; ethics; and advocacy. Healthcare and reimbursement systems are explored. Students use key AOTA documents that guide occupational therapy practice.
3.00 credit hours. Lecture. OTH.525, OTH.530, OTH.540, OTHC.565 (Required, Previous).

OTH.570L
Apprenticeship: Adult Rehabilitation (Level I) Lab
In this two-week, full-time Level I Fieldwork students participate with practicing occupational therapists to experience first-hand the occupational performance effects of prevalent conditions in occupational therapy practice with adults who have physical disabilities. Students integrate knowledge and practice skills as they work along-side practitioners in inter-professional practice settings.
0.00 credit hours. Lecture. OTH.525, OTH.525L, OTH.530, OTH.530L, OTH.540, OTHC.565 (Required, Previous); OTH.570 (Required, Previous or Concurrent).

OTH.600
Practice Engagement: Children and Adolescents

This course introduces students to prevalent conditions in the occupational therapy pediatric practice arena. These include development delays; musculoskeletal, neuro-motor, and traumatic conditions; sensory processing disorder; and emotional and behavioral disorders. Context of care will include Neonatal Intensive Care Unit, acute and outpatient hospital, early intervention, school systems, and community mental health.
4.00 credit hours. Lecture. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570 (Required, Previous); OTH.600L (Required, Previous or Concurrent).

OTH.600L
Practice Engagement: Children and Adolescents
This course introduces students to prevalent conditions in the occupational therapy pediatric practice arena. These include development delays; musculoskeletal, neuro-motor, and traumatic conditions; sensory processing disorder; and emotional and behavioral disorders. Context of care will include Neonatal Intensive Care Unit, acute and outpatient hospital, early intervention, school systems, and community mental health.
0.00 credit hours. Laboratory. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570 (Required, Previous); OTH.600 (Required, Previous or Concurrent).

OTH.605
Scholarship in Practice: Academic Careers in Occupational Therapy
This is the culminating course of the 3-course research sequence. Students aggregate, analyze and interpret data from their single-subject research projects (OTH 555) and disseminate findings by presenting research posters at a school symposium or occupational therapy conference. This course also introduces students to the role of the occupational therapist in the academic setting and concepts and principals of instructional design. Students apply this learning through course assignments and in developing their research poster for presentation.
3.00 credit hours. Lecture. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570 (Required, Previous).

OTH.610
Practice Engagement: Cognitive and Visual Challanges Across the Lifespan
This course examines occupational therapy theory, evaluation and treatment techniques associated with children and adults with cognitive deficits and visual dysfunction. Deficits including age-related eye-health disorders, low vision, visual acuity and fields, visual processing, attention and executive functioning will be discussed. Theories of brain function and cognitive-perceptual treatment will be explored. Assessments, remediation and compensatory strategies will be addressed.
3.00 credit hours. Clinical, Lecture. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570 (Required, Previous).

OTH.615
Systems of Practice: Advance Management Concepts and Program Planning Capstone
Advanced topics in the management of occupational therapy practice including population health, community-based practice, and occupational justice are explored. Through business and program development projects, students apply concepts such as needs assessment, SWOT analysis, financial management, reimbursement, marketing, outcomes planning, and evidence-based practice as a means of identifying and meeting population needs. The work in this course results in a Capstone Project that includes a program description, business plan and professional presentation.
3.00 credit hours. Lecture. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570 (Required, Previous).

OTH.620O
Preparing for Professional Life, I
This online course explores role changes that accompany leaving academics and entering professional practice. Research on professional development indicates this transition is easier when students are prepared in both personal and institutional domains. Students analyze factors that contribute to successful professional development and ethical practice, using the results of their analyses to map the transition to fieldwork and entry-level practice.
2.00 credit hours. Lecture. OTH.600, OTH.605, OTH.610, OTH.615, OTHC.630 (Required, Previous).

OTH.625O
Preparing for Professional Life, II
This is the second in a two online course sequence exploring role changes that accompany leaving academics and entering the larger realm of professional practice. The goal of this course is for students to create a success-plan for entering occupational therapy through resume and cover letter writing as well as interview strategies and practice.
2.00 credit hours. Lecture. OTH.620O, OTHC.640 (Required, Previous).

OTH.630L
Apprenticeship: Children and Adolescents (Level I) Lab

0.00 credit hours. Lecture. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570, OTH.570l (Required, Previous); OTH.630L (Required, Previous or Concurrent).

OTH.685
Directed Study in Occupational Therapy (Level I)
0.00 - 1.00 credit hours. Lecture.

OTHC.565
Apprenticeship: Community Mental Health (Level I)
In this semester-long, Level I fieldwork, students design, implement, and evaluate the therapeutic groups developed in OTH 511. Occupational therapy practitioner-mentors support students' application of learning and skills from didactic coursework. Students use BlackBoard to write and submit occupational therapy documentation of services provided.
3.00 credit hours. Clinical. OTH.500,OTH.505, OTH.510, OTH.511, OTH.520 (Required, Previous).

OTHC.570
Apprenticeship: Adult Rehabilitation (Level I)
In this two-week, full-time Level I Fieldwork students participate with practicing occupational therapists to experience first-hand the occupational performance effects of prevalent conditions in occupational therapy practice with adults who have physical disabilities. Students integrate knowledge and practice skills as they work along-side practitioners in inter-professional practice settings.
4.00 credit hours. Clinical. OTH.525, OTH.530, OTH.540, OTHC.565 (Required, Previous).

OTHC.630
Apprenticeship: Children and Adolescents (Level I)
In this semester long, full-time Level I Fieldwork students participate with practicing occupational therapists to experience first-hand the occupational performance effects of prevalent conditions in occupational therapy practice with children and adolescents. Students integrate knowledge and practice skills as they work along-side practitioners in inter-professional practice settings.
4.00 credit hours. Clinical. OTH.545, OTH.550, OTH.550L, OTH.555, OTH.560, OTHC.570 (Required, Previous.

OTHC.640
Level II Fieldwork I
Level II fieldwork is integral to entry-level education of occupational therapists, providing students opportunities to apply and deepen their skills for entry-level practice in settings similar to the one experienced on this fieldwork. Students complete the twelve-week fieldwork experience after successful completion of the previous four semesters of academic work and level I fieldwork experiences.
7.00 credit hours. Clinical. OTH.600, OTH.605, OTH.610, OTH.615, OTHC.630 (Required, Previous).

OTHC.645
Level II Fieldwork II
Level II fieldwork is integral to entry-level education of occupational therapists, providing students opportunities to apply and deepen their skills for entry-level practice in settings similar to the one experienced on this fieldwork. Students complete the twelve-week fieldwork experience after successful completion of the previous four semesters of academic work and level I fieldwork experiences.
7.00 credit hours. Clinical. OTH.620O, OTHC.640 (Required, Previous).

Physician Assistant Studies—Boston (PAS)

PAS.400
Clinical Anatomy and Physiology I
This is an immersive introduction to human anatomy and physiology from a clinical perspective. Students gain functional understanding of the body systems and the structure and functioning of the tissues that comprise them. Using real-life clinical scenarios, students gain knowledge to assess and diagnose pathologies. Imaging studies and laboratory values are introduced as they apply to anatomy and physiology.
3.00 credit hours. Lecture. BIO.151, BIO.152 (Required, Previous).

PAS.402
Pre-PA Pathway Seminar: Introduction to PA Education and the Profession
This course will introduce undergraduates enrolled in the pre-pa pathway to the physician assistant (PA) profession and prepare them for success in PA school. Students will be introduced to the profession's core competencies, medical terminology, and critical thinking skills. Through seminars, students will be exposed to various roles in health care and have the opportunity to interact with practicing PAs.
0.00 credit hours. Lecture.

PAS.403
Pre-PA Pathway Seminar: Introduction to PA Education and the Profession II
This course aims to prepare undergraduates in the pre-PA pathway for success in PA school. Students will be introduced to the profession's core competencies, critical thinking skills, and preparatory lectures for the application and interview process. Students will learn about the PA profession, strategies for academic success, and interact with practicing PAs to explore different aspects of the field.
0.00 credit hours. Lecture. PAS.402 (Required, Previous).

PAS.404
Pre-PA Pathway Seminar: Preparation for PA School
This course will prepare students for optimal success in the physician assistant (PA) Program. In this course, students will gain a better understanding of how to be successful as a graduate medical learner at MCPHS PA-Boston School of Physician Assistant Studies. The competency course will discus how learning and study strategies will evolve from undergraduate to graduate level. The course will introduce students to all necessary resources provided for academic success.
0.00 credit hours. Lecture.

PAS.405
Introduction to Genetics
A preliminary course for rising first-year PA students to introduce key concepts in the field of genetics in order to prepare students for their graded, graduate-level genetics course in their fall semester of the MPAS program.
0.00 credit hours. Lecture.

PAS.410
Clinical Anatomy and Physiology II
This course is an immersive introduction to human anatomy and physiology from a clinical perspective. Students gain a functional understanding of the systems of the body and the structure and function of the tissues that comprise them. Using real-life clinical scenarios, students gain the knowledge to assess and diagnose pathologies. Imaging studies and laboratory values are introduced as they apply to anatomy and physiology.
3.00 credit hours. Lecture. PAS.400 (Required, Previous).

PAS.500
Preparation for the Clinical Year
Preparation for the Clinical Year will introduce second year PA students to Clinical Rotations.? This course will familiarize students with topics related to the Clinical year including rules and protocols, the process of rotation scheduling, grading and preparation for academic expectations, and guidance on professional behaviors. Small Group work will prepare students for medical and professional situations and experiences
1.00 credit hours. Lecture. PAS.520, PAS.524, PAS.525, PAS.527, PAS.535 (Required, Previous).

PAS.501
Clinical Year Introductory Seminar II
Clinical Year Seminar sessions introduce the second year didactic PA students to Clinical Rotations. These sessions will familiarize the students with the rules and protocols, process of rotation scheduling, and expectations, grading and professionalism of the clinical year. This course also includes surgical scrub training and other coursework necessary for success in the clinical year.
0.00 credit hours. Lecture. PAS.520, PAS.524, PAS.525, PAS.527, PAS.535 (Required, Previous).

PAS.514
Principles of Professional Practice
The course introduces the PA profession. Topics include the history of the PA profession, scope of practice, professionalism, code of conduct and competencies. Ethical principles, including consent and confidentiality, will be discussed. Legal issues, reimbursement, medical errors, patient safety and cultural competence in providing care across different cultures and religions are presented.
2.00 credit hours. Lecture. PAS.515, PAS.516, PAS.517, PAS.518 (Required, Previous or Concurrent).

PAS.515
Genetics
Course discusses basic genetic principles/concepts at cellular-, chromosomal-, and nucleic acid-levels and provides fundamental understanding of the genetic diseases commonly encountered by PAs. Topics include: protein synthesis, human genome organization, gene expression and its regulation, epigenetics, genetic variation, DNA repair, patterns

of inheritance, mutations, metabolism errors, dysmorphology, cancer genetics, ethics of genetic testing, and gene therapy.
1.00 credit hours. Lecture.

PAS.516
Introduction to Psychiatry
Students examine psychiatric disorders including their epidemiology, pathophysiology, clinical presentation, differential diagnosis, natural history and treatment. Students further develop critical thinking skills by developing a differential diagnosis. Students also learn practical counseling skills focusing on patient centered care, including practical implementation of motivational interviewing principals.
2.00 credit hours. Lecture.

PAS.517
Human Physiology and Pathophysiology I
This course focuses on concepts of pathophysiology that are essential in understanding the alterations in normal physiological functions in response to disease processes. Topics include the fundamental concepts and processes of human pathophysiology such as cellular response to stress, inflammation, and diseases of the immune system, endocrine, heart, lungs, kidney, and blood disorders.
3.00 credit hours. Lecture.

PAS.518
Clinical Pharmacology I
This course emphasizes the basic principles of pharmacology, pharmacokinetics, pharmacodynamics, and dose response relationships along with an in-depth consideration of drugs affecting the autonomic, cardiovascular, renal, hematological, endocrine, and central nervous systems.
3.00 credit hours. Lecture.

PAS.520
Clinical Pharmacology II
A continuation of PAS 518 that provides an in-depth study of agents used to treat neurological, psychological, musculoskeletal, neoplastic, and respiratory disorders as well as agents used for the treatment of bacterial, fungal, and viral infectious diseases.
3.00 credit hours. Lecture. PAS.514,PAS.515, PAS.516, PAS.517, PAS.518 (Required, Previous).

PAS.523
Medical Interviewing
This course will teach PA students how to conduct and document a complete medical history and will introduce the focused history. The rules, norms, and ethics related to collecting and documenting medical information will be covered. Active learning exercises will illustrate the structure and function of the medical history.
1.00 credit hours. Lecture.

PAS.524
Gross Anatomy
This course is designed as a one-semester lecture-demonstration-discussion course that examines, human morphology and the fundamental relationships between the neurological, musculoskeletal, cardiovascular, gastrointestinal, respiratory, renal, and reproductive systems. More specific learning objectives for each region will be included in the course listing on Blackboard.
5.00 credit hours. Lecture.

PAS.524L
Gross Anatomy Lab
Students examine human anatomy and embryology through lectures and cadaver dissection. Relating this knowledge to future clinical applications, students present their findings to their classmates, improving communication skills. Radiographic images are examined to compare two-dimensional images to three-dimensional anatomical structures. This course provides a foundation for the study of clinical medicine in year two of the Program.
0.00 credit hours. Laboratory. PAS.524 (Required, Previous or Concurrent).

PAS.525
Diagnostic Methods
Physician Assistant students are introduced to the principles, appropriate use, and interpretation of various diagnostic tests/studies, including laboratory medicine and radiologic examinations. There is a focus on commonly utilized studies, techniques including palpation that aid in the diagnosis and management of illness, disease, and injury.

2.00 credit hours. Lecture.

PAS.525L
Diagnostic Methods Lab
The lab will teach palpation techniques to identify anatomical landmarks
0.00 credit hours. Laboratory.

PAS.527
Human Physiology and Pathophysiology II
This course focuses on concepts of pathophysiology that are essential in understanding the alterations in normal physiological functions in response to disease processes. Topics include central and peripheral nervous systems, musculoskeletal system, head and neck, infectious diseases, neoplasia, gastrointestinal tract, liver and gallbladder, pancreas, female and male genital systems, breast, urinary tract, skin, eye and nutrition.
3.00 credit hours. Lecture.

PAS.533
Evidence-Based Medicine Assistants II
This course will foster the PA student's understanding of the purpose and significance of health research as clinicians. Students will examine different types of study approaches and be able to select the most appropriate study type in any given clinical scenario. Ultimately, students will develop an appreciation of EBM and its significance and application in their everyday clinical career.
2.00 credit hours. Lecture.

PAS.534
Introduction to Public Health
Students receive an introduction to public health concepts and practice. An overview of the U.S. health care delivery system, epidemiological methods and application to control disease conditions, principles of environmental health, and social determinants of health is provided.
2.00 credit hours. Lecture.

PAS.535
Electrocardiography
Students analyze and interpret electrocardiogram (EKG) studies to aid in diagnosing multiple abnormalities, including myocardial infarction, ischemia, arrhythmias, conduction blocks and chamber hypertrophy.
2.00 credit hours. Lecture.

PAS.536
Simulation I
In this course, students will engage in didactic and simulation activities that promote communication, critical thinking, and clinical decision-making skills. Students will apply skills and knowledge learned from other curriculum courses such Medical Interviewing, Physical Exam, Diagnostic Methods, Clinical Management of the Patient and Clinical Medicine. Students will develop skills in medical documentation and oral presentation.
2.00 credit hours. Lecture. PAS.516, PAS.517, PAS.518, PAS.520, PAS.525, PAS.527, PAS.535 (Required, Previous); PAS.538, PAS.551, PAS.552 (Required, Previous or Concurrent).

PAS.537
Clinical Management of the Patient I
This course will teach students how to integrate the knowledge gained in pathophysiology, clinical medicine, physical exam and pharmacology to develop management plans for patients with various medical pathologies. This is the first of a two-semester curriculum.
2.00 credit hours. Lecture. PAS.517, PAS.518, PAS.520, PAS.525, PAS.527, PAS.535 (Required, Previous); PAS.538, PAS.551, PAS.552 (Required, Previous or Concurrent).

PAS.538
Physical Exam I with Lab
This course, which involves elements of didactic delivery of content as well as hands on lab instruction, provides experiences designed to develop patient physical examination skills and facilitate the synthesis of differential diagnoses. Instructional techniques include lectures, demonstrations, media presentations and small group exercises.
3.00 credit hours. Lecture. PAS.524 (Required, Previous).

PAS.540
Physical Exam II: Skills and Procedures

This course is a continuation of PAS 538 with an emphasis on learning to perform specialized physical examination skills as well as receiving exposure to common clinical/technical procedures that are requisite for practicing PAs. This course incorporates an associated weekly clinical laboratory.
3.00 credit hours. Lecture. PAS.538 (Required, Previous).

PAS.546
Simulation II
This course is a continuation of Simulation I. In this course, students will engage in didactic and simulation activities that advance communication, critical thinking, and clinical decision-making skills. Students will apply skills and knowledge learned from other curriculum courses such as Medical Interviewing, Physical Exam, Diagnostic Methods, Clinical Management of the Patient and Clinical Medicine.
2.00 credit hours. Lecture. PAS.526, PAS.538 (Required, Previous).

PAS.547
Clinical Management of the Patient II
This course will teach students how to integrate the knowledge gained in pathophysiology, clinical medicine, physical exam and pharmacology to develop management plans for patients with various medical pathologies.
2.00 credit hours. Lecture. PAS.537, PAS.538, PAS.551, PAS.552 (Required, Previous); PAS.553, PAS.554 (Required, Previous or Concurrent).

PAS.551
Clinical Medicine I
The Clinical Medicine I course fosters understanding of the epidemiology, etiology, history, signs, symptoms, differential diagnoses, diagnostic studies, treatment modalities, preventative medicine, and patient education for various topics. This course section focuses on the areas of Dermatology, Eye, Geriatrics, ENT, and Cardiology. Students will synthesize information to develop diagnostic skills and treatment plans.
5.00 credit hours. Lecture. PAS.517, PAS.518, PAS.520, PAS.525, PAS.527, PAS.535 (Required, Previous); PAS.538 (Required, Previous or Concurrent).

PAS.552
Clinical Medicine II
The Clinical Medicine II course fosters understanding of the epidemiology, etiology, history, signs, symptoms, differential diagnoses, diagnostic studies, treatment modalities, preventative medicine, and patient education associated with Pulmonology, Nephrology and Gastroenterology. Students will synthesize information to develop diagnostic skills and treatment plans.
5.00 credit hours. Lecture. PAS.517, PAS.518, PAS.520, PAS.525, PAS.527, PAS.535 (Required, Previous); PAS.538 (Required, Previous or Concurrent).

PAS.553
Clinical Medicine III
The Clinical Medicine III course fosters understanding of epidemiology, etiology, history, signs, symptoms, differential diagnoses, diagnostic studies, treatment modalities, preventative medicine, and patient education for the areas of women's health, infectious disease, the genitourinary, rheumatologic and musculoskeletal systems. Students will synthesize information to develop diagnostic skills and treatment plans.
5.00 credit hours. Lecture. PAS.517, PAS.518, PAS.520, PAS.525, PAS.527, PAS.538 (Required, Previous).

PAS.554
Clinical Medicine IV
This course fosters understanding of the epidemiology, etiology, history, signs, symptoms, differential diagnoses, diagnostic studies, treatment modalities, preventative medicine, and patient education associated with the areas of hematology, pediatrics, neurology and endocrinology. Students will synthesize information to develop diagnostic skills and treatment plans.
5.00 credit hours. Lecture. PAS.517, PAS.518, PAS.520, PAS.525, PAS.527, PAS.538 (Required, Previous).

PAS.580
Research
Course provides students with a better understanding of research, research design, and research methodology by engaging in a research project. Student activities may include project development, implementation, and/or analysis of results.
0.00 - 3.00 credit hours. Research.

PAS.590

Directed Study
Individual didactic study directed by faculty in an area of expertise.
1.00 - 6.00 credit hours. Lecture.

PASC.600
Internal Medicine Rotation
This Supervised Clinical Practice Experience (SCPE) provides clinical experience with common diseases and the manifestations of acute and chronic illnesses. Learning experiences include the traditional approach to direct, initial and comprehensive care for patients in inpatient or outpatient settings as well as continuity of care and disease and injury prevention and health promotion for the individual patient. Students interview and examine patients, synthesize information to identify problems and formulate and implement therapeutic plans.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.601
Pediatric Medicine Rotation
This Supervised Clinical Practice Experience (SCPE) provides an exposure to care of the child from birth through adolescence. The focus of the learning experience is on the assessment of normal growth and development and on the recognition and management of common childhood illnesses. Emphasis is on counseling of parents regarding immunizations, anticipatory guidance, well child checkups, nutrition, and common medical and psychosocial problems.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.602
Psychiatry Rotation
This Supervised Clinical Practice Experience (SCPE) is designed to provide an understanding of the behavioral components of health, disease and disability. Through exposure to patients presenting with a broad spectrum of psychiatric disorders in varied medical settings, students will develop history taking and mental status examination skills, classification skills utilizing DSM V criteria, be exposed to and evaluate different treatment modalities for varying presentations. The student will enhance their ability to recognize and categorize psychiatric disturbances and techniques of early intervention and psychiatric referral.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.603
Surgery Rotation
This Supervised Clinical Practice Experience (SCPE) will provide an introduction of students to patients of various ages with surgically managed disorders. Students will be exposed to the pre-operative evaluation and preparation of patients, intra-operative and postoperative care.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.604
Emergency Medicine Rotation
This Supervised Clinical Practice Experience (SCPE) is designed to provide the physician assistant student with exposure to common illnesses and injuries that necessitate emergency care. This clerkship emphasizes the development of the following skills: patient interview, physical examination, formulation of a differential diagnosis, ordering and interpreting of diagnostic studies, diagnosis and management of emergency illness and injury, and performance of related procedures.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.605
Women's Health Rotation
This Supervised Clinical Practice Experience (SCPE) is designed to expose the physician assistant student to the practice of women's health, which may include routine screening, contraception, prenatal and post-partum care, family planning and birth control, recognition and treatment of sexually transmitted disease, cancer detection and common obstetric and gynecologic conditions. Involvement in surgical procedures may also be provided.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.606
Elective Rotation I
This Supervised Clinical Practice Experience (SCPE) will provide clinical experience in a specialty of medicine. The purpose of this rotation is to allow students to explore more completely an area of interest in clinical medicine or surgery. Students will engage in all aspects of patient care from history and physical exam to development and implementation of treatment plans and patient follow-up.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.607
Family Medicine Rotation
This Supervised Clinical Practice Experience (SCPE) provides clinical experience with common diseases and the manifestations of acute and chronic illnesses. Learning experiences include the traditional approach to direct, initial and comprehensive care for patients across the lifespan in outpatient settings as well as continuity of care and disease and injury prevention and health promotion for the individual patient and the family. Students interview and examine patients, synthesize information to identify problems and formulate and implement therapeutic plans.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.608
Elective Rotation II
This Supervised Clinical Practice Experience (SCPE) will provide clinical experience in a specialty of medicine. The purpose of this rotation is to allow students to explore more completely an area of interest in clinical medicine or surgery. Students will engage in all aspects of patient care from history and physical exam to development and implementation of treatment plans and patient follow-up.
5.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.609
Elective Rotation-Non Clinical
Rotation provides experience in an area of the PA profession determined by the student and approved by the Director of Clinical Education. The purpose of this rotation is to allow students to explore an area of interest for their future employment. Rotation areas include medical research, teaching, public health, global health and other opportunities as approved by the Clinical Team.
5.00 credit hours. Clinical. PAS.501, PAS.540, PAS.546, PAS.547, PAS.553, PAS.554 (Required, Previous).

PASC.620
Graduate Seminar I
Graduate Seminar sessions follow the end of each of the nine five week rotation blocks. Graduate Seminars (GS) are a required component of each rotation and attendance at these sessions in mandatory. The two-day GS sessions include competency testing, end of rotation exams, enrichment learning activities, and didactic instruction and review sessions.
0.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.621
Graduate Seminar II
Graduate Seminar sessions follow the end of each of the nine five week rotation blocks. Graduate Seminars (GS) are a required component of each rotation and attendance at these sessions in mandatory. The two-day GS sessions include competency testing, end of rotation exams, enrichment learning activities, and didactic instruction and review sessions.
0.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

PASC.622
Graduate Seminar III
Graduate Seminar sessions follow the end of each of the nine five week rotation blocks. Graduate Seminars (GS) are a required component of each rotation and attendance at these sessions in mandatory. The two-day GS sessions include competency testing, end of rotation exams, enrichment learning activities, and didactic instruction and review sessions.
0.00 credit hours. Lecture. PAS.540, PAS.546, PAS.547, PAS.553, PAS.554. (Required, Previous).

Public Health (PBH)

PBH.206
Public Health Seminar
This course provides exposure to the BSPH degree and discipline of public health from a career planning perspective. Various paths will be explored, including global health, civil service, law, and industry. Strategies for graduate admissions preparation, including GRE, LSAT, GMAT, and MCAT exams will be introduced. Content includes pre-professional portfolio development. Speakers from public health-related fields will share their experiences.
1.00 credit hours. Lecture.

PBH.230
Peer Health Education

Students will learn strategies to empower and engage peers on decision-making related to wellness. Students will develop competencies in health promotion, peer-support, and leadership skills, and will receive training on topics related to health, wellness, and prevention. Students will then sit for the Certified Peer Educator (CPE) exam and earn the CPE credential from NASPA.
3.00 credit hours. Lecture. LIB.111 (Required, Previous).

PBH.250
Introduction to Public Health
This course introduces and provides exposure to the five core areas of public health, including biostatistics, environmental health sciences, epidemiology, healthcare organization and policy, and social and behavioral sciences. Students will gain knowledge of key terminology, common analytic measures, and the three core functions of public health: assessment, assurance, and policy development.
3.00 credit hours. Lecture.

PBH.260
Public Health Research Methods
This course is intended for public health students and others interested in health research. Students will complete a literature review, propose a research question, choose a study design, analyze and interpret data, and write a report about their findings. Upon course completion, students will have a thorough background in research methods and be prepared for conducting research in the future.
3.00 credit hours. Lecture. MAT.261 or permission of instructor (Required, Previous or Concurrent).

PBH.310O
Public Health Surveillance
This introductory surveillance course provides an overview of public health surveillance systems. Students learn about the public health surveillance process, including the design, implementation, and evaluation of public health surveillance programs. Course content covers basic epidemiologic concepts and planning considerations, sources and collection of data, analysis and interpretation of findings and communication as it relates to public health.
3.00 credit hours. Lecture. LIB.112 or permission of instructor (Required, Previous).

PBH.330
Introduction to Epidemiology
This course is designed to provide a foundation of epidemiologic terminology, concepts, and measures. Students will identify key sources of data, calculate basic epidemiology measures, and evaluate the strengths and limitations of epidemiologic reports. Additionally, students will gain exposure to the concepts of epidemiologic study design, association, and causality, as well as the epidemiologic approach to disease intervention.
3.00 credit hours. Lecture. MAT.261, PBH.250 or BIO.346 (Required, Previous).

PBH.335
Human Sexuality
This course provides exposure to the study of human sexuality, and encourages critical evaluation of societally constructed views of attractiveness, sex appeal, security, sexually normative behavior, and the psychological impact of love on human relationships. Lecture topics include anatomy, gender roles, communication in intimate relationships, contraception, abortion, pregnancy and childbirth, STIs, the CDC's HP2020, and use of sexuality in product advertisement.
3.00 credit hours. Lecture. PBH.250 or BIO.531, or permission of instructor (Required, Previous).

PBH.340
Environment and Public Health
This course explores the key areas of environmental public health and covers topics in the development and prevention of environmental health problems. Using the perspectives of population and community, students will gain an understanding of individual and community interactions with the environment, the impact on health of environmental changes agents, and specific applications of environmental public health concepts.
3.00 credit hours. Lecture.

PBH.350
Global Health
This interdisciplinary course examines social determinants of health in global context. Students examine public health infrastructure, global health delivery and health systems changes, equity, social justice, and opportunities for prevention and health promotion initiatives within and across borders. Such subjects as emerging and re-emerging infectious diseases, challenges of chronic illness, maternal health, water access, sanitation, and emergency preparedness are studied.

3.00 credit hours. Lecture. SSC.495 or PBH.250 (Required, Previous).

PBH.360
Health Data Collection and Management
This course introduces the collection, maintenance, compilation, cleaning, analysis and presentation of human health care data (including surveillance data from programs overseen by the Center for Disease Control). Students are introduced to data collection tools, data entry using EXCEL, variable management, data verification and descriptive statistics using a widely used statistical software package (STATA).
3.00 credit hours. Lecture. MAT.261, PBH.250 or BIO.346 (Required, Previous).

PBH.371
Field Epidemiology
This course will introduce students to the field of outbreak investigation as it applies to public health. Students will learn about outbreak investigation, surveillance, investigation methodologies and control and prevention strategies used in the field. A combination of lectures, hands on training in outbreak investigation and case studies will be used for instruction.
3.00 credit hours. Lecture.

PBH.375
Survey of Gerontology
This course seeks to educate students about the public health, social, psychological, biological, and cultural impacts of an increasingly aging population. As students learn about these aspects of aging, they will examine how changes in aging demographics impact healthcare delivery. They will also explore different cultural attitudes toward aging and how aging is portrayed by the media.
3.00 credit hours. Lecture. LIB.111 (Required, Previous).

PBH.377O
Introduction to Maternal and Child Health
The purpose of this course is to provide an overview of maternal and child health populations, factors that affect the health of these populations, and the policies, programs, and practices that support women, children, and families.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

PBH.380O
Aging, Place, and Health
Our societies are aging. Though much of this aging is the result of good public health practice, failure to plan for this longer life expectancy can present as a unique public health challenge. This course provides exposure to the epidemiology of aging, introduces relevant resources, and provides students an opportunity to introduce a policy that will positively impact elder populations.
3.00 credit hours. Lecture. LIB.111 (Required, Previous).

PBH.420
Community Health
This course introduces and applies public health perspectives and tools to community health issues. Students engage in problem-based learning using case studies; assess community health needs; identify public health resources; and develop health prevention, education, and promotion strategies. Students apply community health principles and acquire in-depth knowledge of specific health topic areas through group and individual projects.
3.00 credit hours. Lecture. PBH.250 (Required, Previous).

PBH.430
Infection Disease Epidemiology Research
This course introduces principles and methods of infectious disease (ID) epidemiology. Students will learn about spread and control of IDs, and develop an understanding of risk factors, causes and different modes of transmission. It will provide a basic understanding of epidemiologic tools used in studying IDs. Students will examine current issues in the field as it applies to public health.
3.00 credit hours. Lecture. PBH.250 or permission of instructor (Required, Previous).

PBH.432
Epidemiology of Chronic Diseases
It has been estimated that over 30 million deaths annually are due to chronic diseases, a number that is increasing. In this course, students will explore how epidemiologists study chronic diseases, risk factors for chronic diseases, and methods for preventing chronic diseases. Specific diseases and conditions that will be covered include: obesity, heart disease, cancer, diabetes, and neurological disorders.

3.00 credit hours. Lecture. LIB.111 (Required, Previous).

PBH.435
Public Policy and Public Health
Students will evaluate U. S. public health infrastructure, policymaking processes, and decision making. Within cultural, environmental, political, and economic contexts, they will investigate historical and contemporary public health problems, initiatives, controversies, and intervention strategies. Students will perform analysis of both US domestic and global public health performance and the consequences for human health and well being.
3.00 credit hours. Lecture.

PBH.440
Introduction to Sas Programming
This course introduces students to the basics of SAS programming. Students will learn to access and explore public health data and learn to analyze it using common data processing tasks. This course will prepare students to conduct basic descriptive and statistical analysis as it applies to public health research using SAS statistical software.
3.00 credit hours. Lecture. MAT.261 or permission of instructor (Required, Previous).

PBH.450A
ST: Peer Health Education
Special Topics course. Students will learn evidence-based strategies for empowering and engaging peers in healthy decision-making. Students will develop peer support, leadership, and health navigation skills, and receive training on a wide variety of health promotion and prevention topics. After completing this course, students will be eligible to take the Certified Peer Educator (CPE) exam and earn their CPE credential from BACCHUS Network
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

PBH.450AB
ST: Survey of Gerontology
Special Topics course. This introductory course provides exposure to the social, political, psychological, and biological impacts related to aging populations. The world is aging; those who are responsible for the care of our aging communities should understand how age-related changes can impact mobility, healthcare, the physical environment, cognitive functioning, and multi-morbidity. Students will also learn about research in the field that has led to better understanding predictors of healthy aging and prevention of age-related morbidity and premature mortality. The course will also explore different cultural attitudes toward aging and how aging is portrayed by the media.
3.00 credit hours. Lecture.

PBH.450AD
ST Field Epidemiology
Special topics course.
3.00 credit hours. Lecture.

PBH.450AH
ST: Introduction to Maternal and Child Health
Special Topics course. The purpose of this course is to provide an overview of maternal and child health populations, factors that affect the health of these populations, and the policies, programs, and practices that support women, children, and families.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

PBH.450D
ST Public Health Perspectives on Trauma: Infectious Diseases
Special topics course.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

PBH.450F
St: Healthcare Planning for Catastrophic Events
Special Topics course. Catastrophic events, such as hurricanes, oil spills, terrorist attacks and others, can challenge public health departments at every level and for many years. Not only is it important to plan for such events, but the aftermath can be devastating to survivor physical and mental health, to the environment on which we depend and to our economic health. All aspects of public health will be covered for some of the most damaging catastrophic events in the U.S. and beyond.
3.00 credit hours. Lecture.

PBH.450H

ST: Disability and Health Issues
Special topics course.
3.00 credit hours. Lecture. PBH.250 (Required, Previous).

PBH.450I
ST: Social Justice
Special Topics course. Social Justice is a multifaceted concept. The environments in which we live, work, and play continuously shape our opinions, attitudes, knowledge, skills, abilities, and especially our health outcomes. Students will be required to think critically about differential societal structures that shape access and trajectory. Discussion topics include health disparities, health equity, privilege, socioeconomic status, criminal justice, and ethnocentrism.
3.00 credit hours. Lecture. PBH.250 (Required, Previous).

PBH.450K
ST: Public Rhetoric
Special topics course.
3.00 credit hours. Lecture.

PBH.450L
ST: Advanced Political Science Infectous Diseases
Special topics course.
3.00 credit hours. Lecture.

PBH.450M
ST: Introduction to Health Law: Infectious Diseases
Special topics course.
3.00 credit hours. Lecture.

PBH.450R
ST: Community Based Participatory Research
Special Topics course. This course provides an introduction to the process of Community-Based Participatory Research (CBPR). Community-Based or Community-Engaged Research aims to assert a collaborative approach to research that places a critical emphasis on including members of the community in program planning and intervention development. Historical models have excluded stakeholder input and lacked the concepts of mutual respect and shared learning. Due to the lack of collaboration, many interventions have incorporated biases that have led to decreased effectiveness. Students will understand the importance of CBPR, and will demonstrate accepted methods for improving individual and community capacity. Lastly, students will discuss the importance of dissemination and translation of research findings that incorporate a community-engaged approach.
3.00 credit hours. Lecture.

PBH.450T
ST: Outbreak Investigation
Special Topics course. This course will introduce students to the field of outbreak investigation as it applies to public health research and practice. Students will learn about outbreak detection, surveillance, investigation methodologies and control measure strategies that are used in the field. Hands-on training using a public domain software in outbreak investigation and case-study discussions will be an integral part of this course, which will prepare students to plan and implement a simple outbreak investigation, and provide support to a more complex investigation.
3.00 credit hours. Lecture.

PBH.450U
ST: Occupational Health
Special Topics course. In this course, students will explore health and safety issues related to various types of work. Discussion will include how various professions interact to provide for the safety of workers and regulations that have been implemented to decrease work-related morbidity and mortality. Students will utilize epidemiological evidence to consider risk assessment of various professional responsibilities, and predictors of work-related unintentional injury.
3.00 credit hours. Lecture.

PBH.450W
ST: Chronic Disease Epidemiology
Special topics course.
3.00 credit hours. Lecture.

PBH.450X

ST: Program Evaluation
Special topics course.
3.00 credit hours. Lecture.

PBH.450Z
ST: Social Epidemiology
Special Topics course. Why is the life expectancy in some neighborhoods of Boston 30 years higher than others? Why do managers have fewer heart attacks than their employees? Why do racial and ethnic inequities in health outcomes persist? This course covers how epidemiologist study, understand, and try to intervene on the impact that social factors like income, work, and racism have on health.
3.00 credit hours. Lecture. PBH.330 (Required, Previous).

PBH.460
Field Placement
This course is a planned, supervised and evaluated field experience that provides students with the opportunity to synthesize, integrate, and apply basic skills and knowledge acquired in coursework and other learning experiences. Students employ theory and principles in a final project that approximates some aspect of professional practice in public health.
3.00 credit hours. Lecture.

PBH.480
Public Health Capstone Seminar
The public health capstone seminar is a culminating experience designed to synthesize the knowledge, skills, and abilities students have acquired during the entire course of the Public Health program. The seminar will include instructions for writing the capstone paper, strategies for professional presentations, creation of an academic curriculum vitae, preparation of IRB documents, and discussions about professional practices and ethics.
3.00 credit hours. Lecture. PBH.250, MAT.461 (Required, Previous).

PBH.532
Directed Study
This course provides faculty-directed, individualized study to a student wishing to explore a particular aspect of public health in greater detail. The student will work with a public health faculty member to design an appropriate course of study for the semester.
1.00 - 3.00 credit hours. Lecture.

PBH.701
Foundations of Graduate Study in Public Health
Addresses emerging issues in the science and practice of public health. Provides an overview and historical context for the field. Students learn about the 10 essential services to advance health equity. Examples will be provided of how public health may be delivered at the local, state, federal, and global levels. Strategies for graduate writing and student success will be introduced.
3.00 credit hours. Lecture.

PBH.705
Introduction to Environmental Health Sciences
Provides an overview of the major issues in environmental health. Students will learn basic techniques to assess, control, and prevent environmental health hazards.
3.00 credit hours. Lecture.

PBH.710
Policy and Leadership Advance Hlth Equity Management
Introduces students to the policy-making process including identifying a window of opportunity, key partners, the role of ethics, and evidence-based solutions to improve health in diverse populations. Students will learn strategies to advocate for policies and evaluate policies for their impact on health equity.
3.00 credit hours. Lecture.

PBH.732
Graduate Public Health Directed Study
Supervised study in public health involving a survey of existing knowledge, self-instructed or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study.
1.00 - 3.00 credit hours. Lecture.

PBH.740
Methods in Biostatistics and Epidemiology
The goal of this course is to teach students the fundamentals of epidemiology and biostatistics by combining epidemiological concepts with statistical modeling and analysis. This course covers epidemiological study designs, examining the association between exposure and disease, causation, an introduction to commonly used statistical software (Stata), and common statistical tests, models and distributions using a calculator and Stata.
4.00 credit hours. Lecture.

PBH.750
Community Health Science and Practice
Examines the theoretical and practical foundations of community-oriented public health. Introduces systems-thinking concepts as an orientation to community health practice. Explores community engagement and ethical considerations. Reviews the fundamentals of community health assessment and improvement approaches, including health promotion program selection and evaluation.
3.00 credit hours. Lecture.

PBH.755
Health Promotion and Education
This course outlines the history, evolution, and status of the practice of health education among groups of people who define themselves as a community. There is a focus on health behaviors, environmental influences, health policy, and economic and healthcare system issues in health promotion and disease prevention.
3.00 credit hours. Lecture.

PBH.760
Program Design and Evaluation of Public Health Interventions
Students will develop skills in the design and evaluation of public health programs. In particular, students will engage in problem-based learning to identify a public health issue, develop measurable goals and objectives to address the problem, create strategies to reach the desired improvements in health status, and establish a method to measure the success of the program.
3.00 credit hours. Lecture. PBH.701 (or equivalent) (Required, Previous).

PBH.765
Community Health Assessments
Reviews the theory and practice of community assessment in public health. Community assessment focuses on measuring a community's health status and its determinants. It also focuses on assessing a community's capacity to improve health. Qualitative and quantitative methods will be introduced.
3.00 credit hours. Lecture. PBH.701 (or equivalent) (Required, Previous); PBH.750 (Required, Previous or Concurrent).

PBH.770
Qualitative Research in Public Health
Reviews current theories, paradigms of inquiry, and approaches, along with importance of selecting an appropriate theoretical framework and reflecting on positionality, or the lens of the researcher. The role of qualitative research in the assessment and evaluation of public health problems and interventions is considered. Students work in interdisciplinary groups to apply concepts in the design and conduct of research.
3.00 credit hours. Lecture.

PBH.801
Community Organizing
Introduces concepts of community engagement, organization, and development for empowering communities to address the social determinants of health. Examines the role of public health practitioners, grassroots activists, and other community members in stimulating social, political, and economic approaches to promote community health. Provides skills for the creation of partnerships through coalition building and reviews strategies for public policy advocacy.
3.00 credit hours. Lecture.

PBH.805
Maternal and Child Health
Introduces the principles and practices of public health and maternal and child health. Students will examine the social determinants of health and development of women, infants, children, and adolescents.
3.00 credit hours. Lecture.

PBH.810

Principles of Public Health Emergency Preparedness
Introduces the concepts of public health emergency preparedness. Students will discuss complex public health responses at the local, state, and federal level. An emphasis will be placed on how public health fits into the National Response Framework and the National Preparedness System to prevent, respond to, recover from, and mitigate against natural disasters, acts of terrorism, and other man-made disasters.
3.00 credit hours. Lecture.

PBH.815
Mass Communication and Health Preparedness
Students will apply health marketing and communication principles to design a health communication campaign on a topic of their choosing. Students will use surveys or other techniques to develop health messages that inspire audiences to change behavior or take a desired action. An emphasis will be placed on critical thinking and "hands-on" learning of Web 2.0 technologies.
3.00 credit hours. Lecture. PBH.701 (Required, Previous).

PBH.820
Genetics and Public Health
This course will discuss the relationship between advances in genetics and genomics in the post-Human Genome Project era and public health. Basic principles of human inheritance and advances in genetic and genomic technology will be explored. The ethical, legal, and societal implications of these technological advances, and their influence on health promotion and disease prevention, will be examined.
3.00 credit hours. Lecture.

PBH.825
Public Health Law
Students will understand how and when the law can be used to implement public health policies and programs. Students will construct written arguments while analyzing how American law balances the rights of individuals with the interests of government and, where appropriate, analyze the ethics of policy choices. Prior experience or education in law is not required.
3.00 credit hours. Lecture.

PBH.830
Health Informatics
Through the Health Informatics course, students will examine technology's application in healthcare, with a focus on public health, explore the role of health professionals and better understand how to think like and interact with an informaticist. Students will learn how to develop and analyze business requirements to support design, development and implementation of systems that meet public health program needs and provide data to inform decision making. Prior experience or education in health informatics is not required.
3.00 credit hours. Lecture.

PBH.835
Plagues and Pandemics
By focusing on biological and public health issues related to infectious diseases, students analyze and apply knowledge regarding the etiology, symptoms, diagnosis, transmission, treatment and prevention of illnesses that are either newly emerging or resurfacing as global threats. Genetic diseases with high morbidity and/or mortality burden are also investigated. Concepts are studied through problem-based learning and case investigations.
3.00 credit hours. Lecture.

PBH.840
Health Equity
In this course, students will examine differences in health and health care receipt in human populations by various characteristics commonly associated with inequities. Published literature and research on disparities and inequities by gender, sexual identity, age, race/ethnicity, disability, and socioeconomic status will be discussed, followed by the development of health policies to address them.
3.00 credit hours. Lecture. PBH.701 (Required, Previous).

PBH.856E
ST: Public Health and Disability
Special Topics course. This course discusses disability conditions & current health issues that impact people living with varying ability levels. Students will explore critical socio-ecological issues including access, barriers, caregiving, early intervention, education, empowerment, employment, public policy, transportation, universal design, etc. Review history

of disability rights and concepts of ableism, discrimination, social determinants of health within the disability community, and self-advocacy
3.00 credit hours. Lecture.

PBH.856F
ST: Health Equity Epidemiology
Special Topics course. This course will fulfill the requirement of one of two course electives needed to complete the MPH program. Students will review and discuss selected articles and research studies focusing on equity in health care and health status in at-risk populations. A final project will consist of a literature review containing the four standard sections of a research paper (introduction, methods, results, discussion).
3.00 credit hours. Lecture.

PBH.856G
ST: Mental Health and Public Health
Special Topics course. This course reviews current theories, paradigms of inquiry, and approaches, including practical approaches, to mental health from a public health perspective. The role of public health professionals in the assessment and evaluation of mental health problems and interventions is considered. Students develop a semester-long presentation on a particular aspect of mental health in public that incorporates and analyzes themes discussed in class.
3.00 credit hours. Lecture.

PBH.890
Public Health Practice Experience
Provides field experience for all MPH candidates. Students will select a public health agency, healthcare facility, nonprofit organization, or other health-related site. Students must submit a proposal to their faculty advisor before registering. Students also will be evaluated by an on-site supervisor. A minimum of 120 clock hours is required.
2.00 credit hours. Lecture. PBH.701, PBH.750 (Required, Previous).

PBH.894
Literature Analysis and Certified in Public Health Exam
This course is first in a two-course sequence to complete the Integrative Learning Experience for the MPH Program. Under the guidance of a faculty mentor, students in this course will undertake a literature analysis and prepare for the Certified in Public Health exam.
3.00 credit hours. Lecture. PBH.701 (Required, Previous).

PBH.895
Advanced Research Analysis and Interpretation Preparedness
This course is a final step in completion of the MPH Program and addresses the four Evidence-Based Approaches to Public Health competencies established by CEPH. Students undertake a research project of their own design and prepare a research paper suitable for publication and/or professional presentation. Students choose between analyzing primary or secondary data and use statistical software for their analyses.
3.00 credit hours. Lecture. PBH.740, PBH.770 (Required, Previous).

PBH.896
Advanced Policy Solutions and Interventions
This course is the second course in a two-course sequence to complete the Integrative Learning Experience (ILE) for the MPH. Students in this course will evaluate policy solutions or interventions to address the scope of the problem they identified in the first part of the ILE. Their final intervention may take many forms, such as legislative, regulatory, or programmatic solution.
3.00 credit hours. Lecture. PBH.701 (Required, Previous).

PBH.899
Integrative Learning Experience Continued
This course is intended for students who have not successfully completed requirements of PBH.894 Literature Analysis and CPH Exam, PBH.895 Advanced Research Analysis and Interpretation, or PBH.896 Advanced Policy Analysis. Under a faculty mentor, students continue working on their integrative learning experience, to synthesize and integrate the foundational and concentration competencies learned throughout the MPH and translate theory into practice.
0.00 credit hours. Lecture. PBH.701 (or equivalent), PBH.750 (Required, Previous).

Pharmaceutical Economics and Policy (PEP)

PEP.801
Quantitative Methods in PEP

Students will cover the basic statistical techniques in analyzing data pertinent to epidemiology, biomedical, and other public-health related research. Topics include descriptive statistics, sampling, inferential statistics (hypothesis testing, parametric statistics, non-parametric statistics, among others), and elements of study design.
3.00 credit hours. Lecture.

PEP.802
Comparative Pharmaceutical Healthcare Systems
Students will learn to analyze and discuss the context in which therapeutics, both pharmaceutical and medical devices, are developed, regulated, marketed and accessed by patients both in the United States and around the world.
3.00 credit hours. Lecture.

PEP.804
Regression Analysis in PEP
Students will gain an understanding of regression analysis as it is applied to characterizing healthcare utilization patterns, safety and effectiveness of interventions. The course will introduce the process of exploratory data analysis, choosing the appropriate regression model to meet research goals, and of interpreting the findings for diverse audiences.
3.00 credit hours. Lecture. PEP.801 or DRA.807, DRA.809 (Required, Previous).

PEP.806
Pharmacoepidemiology Applications
Students will be introduced to the field of pharmacoepidemiology including the study designs, data sources and threats to study validity, including bias and confounding, that can limit the application of the pharmacoepidemiological knowledge. Using patient-level, observational data, students will obtain a foundation in using regression methods to gain insights on therapeutic outcomes in real-world data settings.
3.00 credit hours. Lecture. PEP.801 or DRA.807, DRA.809, PEP.804 (Required, Previous).

PEP.807
Introduction to Health Economics and Outcomes Research
Students will be introduced to Economic Evaluation (its relevance, the importance of timing of costs and effects, ways of eliciting patient treatment preferences measuring Health-Related Quality of Life, and varying approaches to modeling outcomes, etc.). Students will learn the reasons for using such techniques in various health care environments, including, but not limited to, pharmaceuticals.
3.00 credit hours. Lecture.

PEP.808
Metanalyses Applications
Students will learn the theory behind research synthesis, the methods, and their applications. Students will learn how to conduct a systematic review and a meta-analysis using case studies of public health issues. The course consists of lectures, computer exercises using STATA and CMA, and a meta-analysis project resulting in a paper draft. Students are highly encouraged to publish their papers.
3.00 credit hours. Lecture. DRA.809, PEP.801 or DRA.807 (Required, Previous).

PEP.809
Statistical Programming
This class is designed to give students the necessary tools to manage and/ or restructure a certain dataset before it can be analyzed using one of the statistical procedures. This course is essential for database management. Students can use SAS to analyze data for their poster presentations, thesis projects, peer-reviewed journal articles, and job internships.
3.00 credit hours. Lecture.

PEP.813
Pharmacoeconomic Applications
This course provides students with a review of the advanced methods applied to health economics and outcomes research. The course also explores current debates related to the evaluation of outcomes, cost, and the economic assessment of pharmaceuticals and medical devices.
3.00 credit hours. Lecture. PEP.801 or DRA 807, PEP.807, PEP.814 (Required, Previous).

PEP.814
Healthcare Decision Analysis
This is an advanced course in the methodologies and applications of decision analysis in health care. The course focuses on the use of decision analysis in pharmaceutical economics and policy research. The course provides the

student with the knowledge to conduct decision analysis studies in the economic evaluation of health care technologies and services.
3.00 credit hours. Lecture. PEP.801, PEP.807 (Required, Previous).

PEP.820
Market Access, Pricing and Reimbursement Of Drugs and Medical Devices
The purpose of this course is to provide students with an overview of the economic, regulatory and policy issues of market access, pricing and reimbursement of pharmaceuticals and medical devices in the US the global market.
3.00 credit hours. Lecture.

PEP.825
Health Service and Outcomes Research
Students will be introduced to Health Service and Outcome Research (basic and advanced study designs), compare health outcome measurements used in clinical trials and real-world situations. Students will examine the concept of heterogeneity of treatment effects in randomized controlled trials. Students will analyze health service studies and identify research areas in relation to drug life cycle and patient-reported outcomes (PROs).
3.00 credit hours. Lecture. DRA.809, PEP.801 or DRA.807 (Required, Previous).

PEP.830
Practicum in Pharmaceutical Business and Administrative Sciences
Students obtain field experience from an off-campus internship. This internship must be in an area of Pharmaceutical Economics & Policy (PEP). It is open to PEP graduate students who have completed at least two semesters of study (instructor permission required).
1.00 - 2.00 credit hours. Lecture.

PEP.831
Health Related Quality of Life
Students will be introduced to the theory, methods, and practice of Health-Related Quality of Life (HRQOL) and Patient Reported Outcomes (PRO) in clinical research and real-world evidence generation. Students will learn that valid, reliable, and useful measures are challenging to develop, and the resulting data are not analyzed in the same way as other measures of health status.
3.00 credit hours. Lecture. PEP.807 (Required, Previous or Concurrent).

PEP.840
Data Analysis and Presentation Capabilities in PEP
Students will learn the scientific writing process for different peer-reviewed article types, will present an article related to their research interests and will conduct a research project pertinent to their interests. The project entails creating an abstract, a paper and a poster.
3.00 credit hours. Lecture.

PEP.856I
ST: Patient Health Related Quality of LIfe and Reported Outcomes: Theory, Methods, and Practice
Special Topics course. Students will be introduced to the theory, methods, and practice of Health-Related Quality of Life (HRQOL) and Patient Reported Outcomes (PRO) in clinical research whether it be for a claim of symptom alleviation to appear in the package insert, input for a cost effectiveness model, or evidence of the humanistic value of a therapeutic intervention. Valid, reliable, and useful measures are neither developed in a day or analyzed in the same way as other measures of health status. Further, the impact of temporal, social, cultural, and psychological factors on the data and its method of collection make understanding and interpretation extremely complex and challenging.
3.00 credit hours. Lecture. PEP.807 (Required, Previous).

PEP.856J
ST: Data Analysis Using R Life and Reported Outcomes: Theory, Methods, and Practice
This course provides a comprehensive introduction to the R programming language, focusing on data manipulation, visualization, and basic statistical analysis. Students will gain practical skills to manage, analyze, and visualize data, preparing them for advanced research projects, professional data analysis tasks, and academic publications. The course emphasizes hands-on learning through coding exercises, real-world examples, and projects.
3.00 credit hours. Lecture.

PEP.870
Graduate Seminar in PEP
This course is a weekly seminar involving graduate students, department faculty, and invited speakers.
1.00 credit hours. Lecture.

PEP.880
MS Thesis Research in PEP
MS thesis research involves working with a chosen thesis advisor on the MS thesis. Faculty supervisor approval is required for registration.
1.00 - 3.00 credit hours. Lecture.

PEP.890
PhD Dissertation Research in PEP
PhD dissertation research involves working with a chosen dissertation advisor on the PhD dissertation. Faculty supervisor approval is required for registration.
1.00 credit hours. Lecture.

PEP.895
Graduate Study Extension
All thesis degree students are expected to remain continuously enrolled each semester, excluding summer semesters, until all requirements for the degree have been completed. Students maintain continuing registration by indicating PEP 895 Graduate Study Extension on the registration form and paying a fee. This course is not subject to tuition remission.
0.00 credit hours. Lecture. PEP.880 or PEP.890 (Required, Previous).

PEP.899
Directed Study in Pharmaceutical Economics and Policy
This course is a directed study with a chosen professor with the topic mutually agreed upon. It is intended to allow a student to pursue a topic more in depth than existing coursework allows. Instructor permission required.
1.00 - 3.00 credit hours. Lecture.

Pharmacy—Boston (PHB)

PHB.380
Personal and Professional Development I
This year-long course is the first in a series of courses that use a combination of instructional sessions and required co-curricular activities to guide the development of skills essential for a student's personal and professional development as a pharmacist. Students are required to complete assignments in an online portfolio and meet with an assigned faculty member to evaluate their progress.
0.00 credit hours. Lecture. PPB.210 (Recommended, Previous).

PHB.381
Personal and Professional Development I
This course is a continuation of PHB.380.
1.00 credit hours. Lecture. PHB.380 (Required, Previous).

PHB.480
Personal and Professional Development II
This year-long course is the second in a series of courses that use a combination of instructional sessions and required co-curricular activities to guide the development of skills essential for a student's personal and professional development as a pharmacist. Students are required to complete assignments in an online portfolio and meet with an assigned faculty member to evaluate their progress.
0.00 credit hours. Lecture. PHB.380, PHB.381 (Required, Previous).

PHB.481
Personal and Professional Development II
This course is a continuation of PHB.480.
1.00 credit hours. Lecture. PHB.380, PHB.381 (Required, Previous).

PHB.535
Introduction to Cannabis Studies for Professionals
The student will become familiar with the introductory principles of cannabis studies including but not limited to place in the current healthcare system, regulatory issues, pharmacognosy, chemistry, dosage formulation, introductory therapeutics and patient experience. The emphasis of the introductory course is to acquire knowledge of cannabis topics to assist counseling patients/users.
3.00 credit hours. Lecture. PPB.446, PSB.442, PSB.454 (Required, Previous).

PHB.536

Advanced Cannabis Studies for Professionals
The student will become familiar with the advanced principles of cannabis including but not limited to advanced therapeutic uses for specific clinical and safety considerations, kinetics, laboratory testing, patient monitoring and adherence. The emphasis of the advanced course is to develop skills necessary to work in interprofessional teams to create new treatment protocols based on specific concerns and products available.
3.00 credit hours. Lecture. PPB.446, PSB.442, PSB.454, PHB.535 (Required, Previous).

PHB.540
Digital Health for Healthcare Professionals
Students will become familiar with the introductory principles of digital health. They will gain knowledge and develop skills necessary to work in teams to create new products, applications and directions in healthcare. Students will explore solutions to real-life healthcare problems and present them at MCPHS Digital Health Symposium at the end of semester.
3.00 credit hours. Lecture. PPB.445, PPB.446, PSB.442, PSB.454 (Required, Previous); PPB.556 (Required, Previous or Concurrent).

PHB.560
Advanced Digital Health for Healthcare Professionals
The student will apply introductory concepts of digital health by working with faculty and preceptors on projects to improve healthcare outcomes. The emphasis is to gain practical knowledge of developing digital health field and skills necessary to work in interprofessional teams in creating new products, and services.
3.00 credit hours. Lecture. PHB.540 (Required, Previous).

PHB.580
Personal and Professional Development III
This year-long course is the third in a series of courses that use a combination of instructional sessions and required co-curricular activities to guide the development of skills essential for a student's personal and professional development as a pharmacist. Students are required to complete assignments in an online portfolio and meet with an assigned faculty member to evaluate their progress.
0.00 credit hours. Lecture. PHB.480, PHB.481 (Required, Previous).

PHB.581
Personal and Professional Development III
This course is a continuation of PHB.580.
1.00 credit hours. Lecture. PHB.480, PHB.481 (Required, Previous).

Physics and Radiopharmacy (PHY)

PHY.181
General Physics
A non-calculus presentation of classical physics for students in allied health programs. Topics include: Newton's Laws of Motion, work and energy, simple harmonic motion, and waves. Course also covers electricity, magnetism and atomic physics.
4.00 credit hours. Lecture. MAT.141 (Required, Previous).

PHY.270
Foundations of Physics I
In this introductory calculus-based course, students make an in-depth study of concepts, principles, and applications of physics drawn from classical mechanics. PHY 272L provides the associated laboratory for degree programs requiring it.
3.00 credit hours. Lecture. MAT.151 or MAT.171 (Required, Previous).

PHY.272L
Physics I Lab
This introductory calculus-based laboratory is taken concurrently with PHY 270 by students whose degree programs require physics with a laboratory component. Laboratory experiments include explorations of collisions in one dimension, constant acceleration, forces and torques in static equilibrium, vibrations and waves, and laminar fluid flow.
1.00 credit hours. Laboratory. MAT.151 or MAT.171 (Required, Previous); PHY.270 (Required, Previous or Concurrent).

PHY.274
Foundations of Physics II

In this introductory calculus-based course, students make an in-depth study of concepts, principles, and applications of physics drawn from electricity and magnetism (including electric circuits), and areas of classical mechanics more advanced than those covered in PHY 270.
3.00 credit hours. Lecture. PHY.270 or PHY.280 (Required, Previous).

PHY.274L
Foundations of Physics II Lab
In this introductory calculus-based physics course, students study concepts, principles and applications drawn from mechanics, electricity and magnetism, DC circuits, and ray and wave optics. Emphasis is placed on interpreting and solving problems, and on translating between verbal, pictorial, diagrammatic, symbolic mathematical, and graphical representations. Students develop the solid foundation required for a working knowledge of physics.
1.00 credit hours. Laboratory. PHY.270, PHY.272L (Required, Previous); PHY.274 (Required, Previous or Concurrent).

PHY.275
Physics for Medical Imaging
Students undertake an in-depth study of the physics required for careers in medical imaging. Topics studied include the essentials of kinematics and Newton's laws followed by a detailed study of electromagnetism (focused on sources of magnetic fields, magnetic forces and torques, electromagnetic induction, and magnetic properties of matter).
4.00 credit hours. Lecture. MAT.141 or MAT.150 or MAT.151 (Required, Previous).

PHY.280
Physics I
In this in-depth calculus-based course/laboratory, students study the concepts, principles, and applications of rigid body mechanics, mechanical vibrations and waves, sound, and mechanical properties of fluids and solids. Emphasis is placed on critical analysis, problem solving, pathways to solutions, and assessing mathematical results. Recommended as preparation for professional school admission tests (MCAT, OAT, and DAT).
3.00 credit hours. Lecture. MAT.151 or MAT.171 (Required, Previous); PHY.280L (Required, Previous or Concurrent).

PHY.280L
Physics I Lab
In this in-depth calculus-based course/laboratory, students study the concepts, principles, and applications of rigid body mechanics, mechanical vibrations and waves, sound, and mechanical properties of fluids and solids. Emphasis is placed on critical analysis, problem solving, pathways to solutions, and assessing mathematical results. Recommended as preparation for professional school admission tests (MCAT, OAT, and DAT).
1.00 credit hours. Laboratory. MAT.151 or MAT.171 (Required, Previous); PHY.280 (Required, Previous or Concurrent).

PHY.280R
Physics I Recitation
In this in-depth calculus-based course/laboratory, reactions are emphasized. Laboratory experiments develop manipulative skills in the classical methods of purification and separation of organic compounds.
0.00 credit hours. Recitation. PHY.280 (Required, Previous or Concurrent).

PHY.284
Physics II
In this in-depth calculus-based course, students study the concepts, principles and applications of electricity and magnetism, DC and AC circuits, ray and wave optics, atomic and nuclear physics. Emphasis is placed on critical analysis, problem-solving, pathways to solutions, and assessing mathematical results. This course is recommended as preparation for professional school admissions tests (MCAT and OAT).
3.00 credit hours. Lecture. PHY.280 (Required, Previous).

PHY.284L
Physics II Lab
This laboratory course takes experimental approaches to study the concepts, principles and applications of electricity and magnetism, circuits, ray and wave optics, atomic and nuclear physics. Emphasis is placed on knowledge application, lab hands-on skills, experiment results discussions, error analysis, critical thinking and problem-solving. This course is recommended as preparation for professional school admissions tests (MCAT and OAT).
1.00 credit hours. Laboratory. PHY.280, PHY.280L (Required, Previous); PHY.284 (Required, Previous or Concurrent).

PHY.530
Undergraduate Research Project

Research participation at the undergraduate level is offered to superior students in biology and microbiology. Emphasis is placed on teaching the methods and techniques used in solving research problems.
1.00 - 3.00 credit hours. Lecture.

Pharmacy Practice—Boston (PPB)

PPB.210
Introduction to Pharmacy
In this introductory, required course, students will explore how pharmaceutical care is delivered and the role of the pharmacist. Small group activities will foster critical thinking, problem solving, team work and communication skills. Students will learn medical terminology, concepts of cultural awareness, public health and medication safety. In addition, students will be introduced the variety of career pathways in pharmacy.
1.00 credit hours. Lecture. BIO.152, CHE.132 (Required, Previous).

PPB.210L
Introduction to Pharmacy Lab
In this introductory, required course, students will explore how pharmaceutical care is delivered and the role of the pharmacist. Small group activities will foster critical thinking, problem solving, team work and communication skills. Students will learn medical terminology, concepts of cultural awareness, public health and medication safety. In addition, students will be introduced the variety of career pathways in pharmacy
0.00 credit hours. Laboratory. PPB.210 (Required, Concurrent).

PPB.230
Introduction to Pharmaceutical Sciences
This course provides the foundation of basic physico-chemical properties of drug molecules and calculations associated with drug delivery and dosing. Additionally, the course prepares students for chemistry and calculations-based courses in the professional year of the pharmacy program.?
2.00 credit hours. Lecture. MAT.151, CHE.231 (Required, Previous); CHE.232 (Required, Previous or Concurrent).

PPB.325
Introduction to Practice Management I
Students are introduced to the concepts of pharmaceutical care, professionalism, and the role of the pharmacist in a variety of practice settings through lectures and simulated skill activities. Students will take on the role of the pharmacist and will learn principles of the pharmacist-patient communication. This course will prepare students for their Introductory Pharmacy Practice Experience (IPPE) rotations.
2.00 credit hours. Lecture. BIO.255, CHE.232, MAT.261, PPB.210, PSB.225 (Required, Previous); PPB.325L (Required, Previous or Concurrent).

PPB.325L
Introduction to Practice Management I Lab
Students are introduced to the concepts of pharmaceutical care, professionalism, and the role of the pharmacist in a variety of practice settings through lectures and simulated skill activities. Students will take on the role of the pharmacist and will learn principles of the pharmacist-patient communication. This course will prepare students for their Introductory Pharmacy Practice Experience (IPPE) rotations.
0.00 credit hours. Laboratory. BIO.255, CHE.231, CHE.232, MAT.261, PPB.210 (Required, Previous); PPB.325 (Required, Previous or Concurrent).

PPB.335
Introduction to Practice Management II
Students are introduced to the concepts of pharmaceutical care, professionalism, and the role of the pharmacist in a variety of practice settings. Students will also gain knowledge in preparation for their Introductory Pharmacy Practice Experience (IPPE) rotations as well as their integration into the Advanced Practice Management (APM) laboratory. Students will attend weekly lectures.
2.00 credit hours. Lecture. PPB.325 (Required, Previous).

PPB.335L
Introduction to Practice Management II Lab
Students are introduced to the concepts of pharmaceutical care, professionalism, and the role of the pharmacist in a variety of practice settings. Students will also gain knowledge in preparation for their Introductory Pharmacy Practice Experience (IPPE) rotations as well as their integration into the Advanced Practice Management (APM) laboratory. Students will attend weekly lectures.
0.00 credit hours. Laboratory. PPB.325 (Required, Previous); PPB.335 (Required, Concurrent).

PPB.345
Self-Care Pharmacotherapy
Students examine principles of selfcare pharmacotherapy in the treatment of common disease states and the use of over the counter kits for patient assessment. Utilizing a case-based approach, students will learn how to select appropriate selfcare pharmacotherapy regimens, monitor for the safe and efficacious use, determine therapeutic endpoints, and individualize treatment.
2.00 credit hours. Lecture. PPB.325, PSB.328 (Required, Previous); PPB.335, PSB.329 (Required, Previous or Concurrent).

PPB.386
Drug Information and Literature Evaluation I
This course introduces students to the principles and practices of drug information. Students will learn how to locate, evaluate, and communicate drug information from various sources to support clinical decision-making and patient care.
2.00 credit hours. Lecture.

PPB.414
Virology and Anti-infectives
Students will learn about the commonly used antibiotic, antiviral, and antifungal agents through an integration of the medicinal chemistry, pharmacology, and therapeutics of these agents. The therapeutic management, recognition, and prevention of important infectious diseases, antibiotic allergies and resistance, as well as immunization, will be discussed using a variety of problem-based and active-learning techniques.
4.00 credit hours. Lecture. PSB.441 and PSB.451 (Recommended, Previous).

PPB.419
Introductory Pharmacy Practice Experience I
Students engage in community-based professional experiences that support their personal and professional development and practice readiness. Utilizing the Pharmacists' Patient Care Process, evidence-based medicine, and Entrustable Professional Activities (EPAs), students participate in patient-care activities to further develop their knowledge, skills, and serve the outpatient community. Students are evaluated on their practice readiness by using EPAs and competency-based assessments.
2.00 credit hours. Clinical. PSB.320, PSB.329, PPB.335, PSB.338, PSB.354, PSB.359L, PSB.424, PHB.381 (Required, Previous).

PPB.430
Clinical Application of the Pharmacists' Patient Care Process
The current healthcare model emphasizes collaboration among a clinical team. As members of the healthcare team, pharmacists have an opportunity to improve the quality of patient care and optimize medication outcomes. Students will learn and apply the fundamental steps of PPCP through lectures and active learning that focus on critical thinking, communication skills, documentation, and patient care.
1.00 credit hours. Lecture. PPB.445, PPB.485, PSB.441, PSB.451 (Required, Previous).

PPB.435
Seminar I
This course involves small group case discussions on clinical topics. Students will apply the fundamental steps of the Pharmacist's Patient Care Process (PPCP) through case exercises focusing on critical thinking, communication skills, pharmacotherapeutic exploration, cultural awareness, and evidence-based patient care. Students are expected to draw upon their drug literature evaluation skills to answer patient care drug information questions
1.00 credit hours. Lecture. PSB.328, PSB.329 (Required, Previous); PPB.445, PPB.485 (Required, Concurrent).

PPB.436
Seminar II
This is a continuation of Seminar I involving small group case discussions and presentations on clinical topics. Students will apply the fundamental steps of PPCP through case exercises focusing on critical thinking, communication skills, exploration of pharmacotherapeutics, cultural awareness, and evidence-based patient care. Students are expected to draw upon their drug literature evaluation knowledge to present journal club.
1.00 credit hours. Lecture. PPB.435, PPB.445, PPB.485 (Required, Previous); PPB.414, PPB.446 (Required, Concurrent).

PPB.445
Therapeutics I

This is the first of four courses that are sequenced over four semesters. Students will learn fundamental pharmacotherapeutic and disease state management principles. Students will integrate therapy of diseases in a team-taught, multidisciplinary approach. The students will apply and integrate knowledge from the Drug Action sequence.
3.00 credit hours. Lecture. PSB.328, PSB.329 (Required, Previous); PPB.435, PSB.463, PPB.485 (Required, Previous or Concurrent).

PPB.446
Therapeutics II
This course is a continuation of a sequence of courses that addresses the principles of pharmacotherapeutics and the functional consequences of major diseases (see PPB 445 description). The sequence of topics is closely adapted to those concurrently taught in PSB 442 and 454. Integrated patient cases bridge science and practice.
3.00 credit hours. Lecture. PPB.419, PPB.445, PPB.485, PSB.441, PSB.451 (Required, Previous); PPB.414, PSB.430, PSB.442, PSB.454 (Required, Previous or Concurrent).

PPB.485
Drug Literature Evaluation
Students retrieve, evaluate, and apply medical and pharmacy literature. Assignments develop the student's skills in applying literature to clinical problem solving.
3.00 credit hours. Lecture. PSB.424 (Required, Previous); PPB.435, PPB.445 (Required, Concurrent).

PPB.486
Drug Information and Literature Evaluation II
This course focuses on the key components of drug literature to support evidence-based practice in pharmacy. Students will learn to assess the validity, reliability, and applicability of clinical research. Emphasis will be placed on understanding study design, statistical analysis, and the interpretation of research findings.
3.00 credit hours. Lecture.

PPB.502
OTC Drugs/Self Care
Students learn about nonprescription medications, herbs, vitamins, homeopathic products, and medical and parapharmaceutical devices used by patients for self-treatment and disease-state monitoring in such common illnesses as cough and cold, dermatological and gastrointestinal disorders, pregnancy, and analgesia.
3.00 credit hours. Lecture. PSB.441, PSB.451 (Required, Previous).

PPB.510
Clinical Pharmacokinetics
This course is a continuation of Pharmacokinetics I with discussion of the influence of the physiochemical factors on the bioavailability of drugs and their in vivo performance. It includes the kinetics of drug disposition following administration by intravenous infusion, intravenous bolus, and oral multiple dosing; discusses the pharmacokinetics of drugs that follow a two-compartment model and the principles of nonlinear kinetics; and involves clinical applications of pharmacokinetic principles and factors that contribute to the variability in the pharmacokinetics of selected drugs.
3.00 credit hours. Lecture. PSB.430 (Required, Previous).

PPB.519
Introduction to Pharmacy Practice Experience II
Students engage in institutional-based professional experiences that support their personal and professional development and practice readiness. Utilizing the Pharmacists' Patient Care Process, evidence-based medicine, and Entrustable Professional Activities (EPAs), students participate in patient-care activities to further develop their knowledge, skills, and serve the inpatient community. Students are evaluated on their practice readiness by using EPAs and competency-based assessments.
1.00 credit hours. Clinical. PPB.414, PPB.436, PPB.446, PSB.430, PSB.442, PSB.454, PHB.480 (Required, Previous).

PPB.521
Culinary Applications for Health Promotion and Disease State Management
Student will become familiar with principles nutrition, practice of food organization and culinary techniques. Students will learn culinary choices and skills to implement best practices for health promotion to improve chronic disease state management. Students will explore science-based evidence for making healthy choices for patients. Students will identify strategies to educate patients to implement personalized food choices.
3.00 credit hours. Lecture.

PPB.525
Cardiovascular Pharmacotherapy

The prevention and management of cardiovascular disease is among the first therapeutic areas that embrace evidence based on medical practice. The students will utilize a case-based approach to discuss the pharmacotherapies and public health efforts in the management and prevention of different cardiovascular diseases. It is intended for students who are interested in further developing their knowledge base in cardiovascular pharmacotherapy.
3.00 credit hours. Lecture. PPB.555 (Required, Previous).

PPB.526
Common Threads: Pain and Addiction
Students will be introduced to principles related to pain management and addiction medicine with emphasis on how these may overlap in clinical practice. Students will learn practical approaches to the management of pain and addiction that promote patient-centered care. This course will also develop clinical problem-solving skills necessary to effectively serve as a member of an interprofessional team.
3.00 credit hours. Lecture. PPB.555 (Required, Previous); PPB.556 (Required, Concurrent).

PPB.527
Interpretation of Lab Data
The student will delineate and identify commonly used laboratory tests and interpret their results in diagnosing and monitoring diseases. By relating tests to the patient's overall condition, the student will employ the principles of monitoring and determining drug effectiveness and toxicity in assessing patient outcomes.
3.00 credit hours. Lecture. PPB.414, PSB.442, PSB.454 (Required, Previous).

PPB.528O
Medication Safety
Students will be exposed to pertinent topics in patient and medication safety and will focus on issues surrounding the provision of safe, high quality patient care in inpatient and outpatient settings. A culture of medication safety will also be examined to improve and increase the quality of care provided by interdisciplinary teams of healthcare professionals. Students will apply medication safety concepts during online group discussions and group presentations and will complete online lectures, learning activities, and assignments to enable application of course concepts.
3.00 credit hours. Lecture. PPB.414, PSB.442, PSB.454 (Required, Previous).

PPB.529
Ambulatory Care Pharmacy Practice
This course will introduce pharmacy students to the various roles and disease states pharmacists encounter in ambulatory care. Students will develop patient-specific pharmaceutical care plans, and be required to present a patient case using primary literature and current guidelines to support their clinical pharmacotherapeutic plans. In addition, they will create a patient education tool applicable to their patient case.
3.00 credit hours. Lecture. PPB.445, PPB.446, PPB.555 (Required, Previous).

PPB.530
Undergraduate Research Project
Research participation at the undergraduate level is offered, with emphasis on developing methods and techniques to conduct research.
1.00 - 3.00 credit hours. Lecture.

PPB.532
Directed Study
This course provides faculty-directed study to an individual student wishing to explore a particular aspect of a pharmacy practice-related topic in greater detail. Emphasis is placed on analysis of the pharmacy and medical literature.
1.00 - 3.00 credit hours. Lecture.

PPB.533
Pharmacotherapeutics of Women's Health
This interdisciplinary women's health professional elective is designed to expose students to the health and social issues faced by women throughout their lifespan. Through lecture, in-class case discussions, outside class reading assignments, and poster presentation, students will evaluate and apply evidence-based medicine to discuss and develop comprehensive treatment plans for female patients throughout the lifespan.
3.00 credit hours. Lecture. PPB.555 (Required, Previous); PPB.556 (Required, Concurrent).

PPB.534
Clinical Care for the Aging Patient
Students will be exposed to the health and social issues faced by the geriatric population in this blended-format professional elective. Through classroom and online activities, students will evaluate and apply evidence-based

medicine to discuss and develop comprehensive treatment plans for patients. This 3-credit professional elective includes three hours of class time divided between online and campus-based lectures/activities.
3.00 credit hours. Lecture. PPB.446, PPB.485 (Required, Previous); PPB.556 (Required, Previous or Concurrent).

PPB.535
Herbal Supplements
The course reviews trends, epidemiology, manufacturing practices, regulations, and pharmaceutics, as well as resources in the contemporary use of herbal supplements. An evidence-based approach is used to discuss clinical and therapeutic uses of herbal supplements and their roles in the treatment of diverse conditions. Adverse reactions, contraindications and precautions of specific herbal supplements are addressed.
3.00 credit hours. Lecture. PSB.442 (Required, Previous).

PPB.536
Oncology
Students will discuss oncology topics, including the different cancers and medications used in their treatment as well as the role of the pharmacist in the care of patients with cancer. They will debate ethical and financial considerations as well as international concerns in the field of oncology. Students will apply literature assessment skills to formulate rational, evidence-based treatment decisions.
3.00 credit hours. Lecture. PPB.556 (Required, Concurrent).

PPB.537
Veterinary Pharmacy
Introduces veterinary pharmaceuticals and their use in veterinary medicine. The application of drug therapy to large, small, and exotic animals to obtain optimum therapeutic outcomes and the opportunity to provide veterinary pharmacy services in a community or hospital setting are emphasized. Additional emphasis is placed on selection of appropriate drugs and drug regimens for selected species for common disease states. Both over-the-counter and prescription medications are studied.
3.00 credit hours. Lecture. PPB.414, PSB.430, PSB.454 (Required, Previous).

PPB.538
Global Infectious Diseases
An interdisciplinary course designed to expose students to a broad range of topics in global infectious diseases. The course provides a specific focus on topics in travel medicine in the context of global infectious disease. In addition to pharmacotherapeutics, the public health, cultural, socio-political, psychosocial, and pharmacoeconomic aspects of global infectious diseases are also addressed. Students apply interdisciplinary concepts through participation in service-learning, as well as small group discussions and presentations. The service-learning component is designed to provide students with a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection.
3.00 credit hours. Lecture. PPB.414, PSB.454 (Required, Previous).

PPB.539
Advanced Topics in Neurology and Psychiatry
Students will learn more in-depth knowledge regarding the major neurologic and psychiatric diseases and the medications utilized in their treatment. Information on medication management of these illnesses will be discussed and relevant journal articles evaluated within each class. Students will apply evidence-based medicine principles to the conditions reviewed and the methods by which they are treated.
3.00 credit hours. Lecture. PPB.446, PPB.485 (Required, Previous); PPB.556 (Required, Concurrent).

PPB.540E
Complementary and Alternative Medicine
Provides an overview of various alternative healing practices such as homeopathy and Chinese, chiropractic, Ayurvedic, and Shamanic medicine. Concepts of the health-belief system, administration and monitoring of therapy, and socioeconomic issues are explored for each discipline through lectures and experiential presentations from practitioners.
3.00 credit hours. Lecture. BIO.151 (Required, Previous).

PPB.540K
ST: Pharmacy Communications Laboratory
Special Topics course. This course is designed as a communication skills support offering for preparation with the Doctor of Pharmacy Progression Interview. Instruction is focused on the development of both written and oral communication skills, applicable to practice in healthcare settings. Students receive instruction in the areas of literature

synthesis, oral presentation development, and communication-related strategies. The course provides students with an opportunity to explore real-world scenarios.
0.00 credit hours. Lecture.

PPB.541
Clinical Pharmacy Research
This course enables students to develop an understanding of the scope, purpose, and methods behind clinical pharmacydriven research projects. The didactic portion of this course covers the basics of designing a study. The practical portion allows students, to work with a clinical pharmacist to participate in a research project sponsored by the MGH pharmacy department.
3.00 credit hours. Lecture. PPB.335, PSB.320, PSB.329, PSB.338, PSB.354, PSB.359L, PSB.424 (Required, Previous).

PPB.545
Advanced Practice Management I
This first part of the overall Advanced Practice Management course emphasizes the pharmacist as the primary provider of pharmaceutical care. Didactic and laboratory experiences focus on advanced aspects of pharmacy practice, including patient counseling, physical exams, managerial applications, compliance with legal requirements, exploring complex patient care issues, and self-directed learning.
3.00 credit hours. Lecture. PPB.335, PPB.414, PPB.419, PPB.430 or PPB.435, PSB.442, PSB.454 (Required, Previous); PPB.502, PPB.510, PPB.551, PPB.555 (Required, Previous or Concurrent).

PPB.545L
Advanced Practice Management I Lab
This first part of the overall Advanced Practice Management course emphasizes the pharmacist as the primary provider of pharmaceutical care. Didactic and laboratory experiences focus on advanced aspects of pharmacy practice, including patient counseling, physical exams, managerial applications, compliance with legal requirements, exploring complex patient care issues, and self-directed learning.
0.00 credit hours. Laboratory. PPB.335, PPB.414, PPB.419, PSB.442, PSB.454 (Required, Previous); PPB.545 (Required, Previous or Concurrent).

PPB.546
Advanced Practice Management II
Second part of the Advanced Practice Management course. Builds on knowledge and skills acquired in part one of this course. Emphasizes the pharmacists as the primary provider of pharmaceutical care. Didactic and laboratory experiences focus on advanced aspects of pharmacy practice, including patient counseling, physical exams, managerial applications, compliance with legal requirements, exploring complex ethical and patient care issues, and self-directed learning.
3.00 credit hours. Lecture. PPB.502, PPB.545, PPB.551, PPB.555 (Required, Previous); PPB.552, PPB.556 (Required, Previous or Concurrent).

PPB.546L
Advanced Practice Management II Lab
Second part of the Advanced Practice Management course. Builds on knowledge and skills acquired in part one of this course. Emphasizes the pharmacists as the primary provider of pharmaceutical care. Didactic and laboratory experiences focus on advanced aspects of pharmacy practice, including patient counseling, physical exams, managerial applications, compliance with legal requirements, exploring complex ethical and patient care issues, and selfdirected learning.
0.00 credit hours. Laboratory. PPB.545 (Required, Previous); PPB.546, PPB.552, PPB.556, PSB.411 (Required, Previous or Concurrent).

PPB.548
Critical Care Pharmacotherapy
The course will expose students to pharmacotherapeutic challenges in critically ill patients and expand their knowledge of the pharmacist's role in caring for patients with these issues. Short online presentations and in class patient cases will be used to discuss drugs and landmark clinical trials related to commonly encountered ICU disease states. An ICU field trip will also be scheduled.
3.00 credit hours. Lecture. PPB.551 (Required, Previous).

PPB.551
Advanced Seminar I

This series involves case presentations followed by discussion of the presented material using the problem-based learning approach. Cases, journal clubs, and consults provide the opportunity for in-depth exploration of pharmacotherapeutic topics. Elements of clinical practice are incorporated into the small-group discussion to duplicate a real-life clinical environment.
1.00 credit hours. Lecture. PPB.445, PPB.485 (Required, Previous); PPB.555 (Required, Concurrent).

PPB.552
Advanced Seminar II
This series involves case presentations followed by discussion of the presented material using the problem based learning approach. Cases, journal clubs, and consults provide the opportunity for in-depth exploration of pharmacotherapeutic topics. Elements of clinical practice are incorporated into the small group discussion to duplicate a real life clinical environment.
1.00 credit hours. Lecture. PPB.551 (Required, Previous); PPB.556 (Required, Concurrent).

PPB.555
Advanced Therapeutics I
This is the third of four courses that are sequenced over four semesters. Students will integrate and apply pharmacological and biopharmaceutical principles on an advanced level. Using evidence-based medicine, the student will focus on individualizing drug therapy and solving complex medication-related problems in the treatment of selected disease states in oncology, nephrology, cardiology, and gastroenterology.
4.00 credit hours. Lecture. PPB.414, PSB.430, PSB.442, PSB.454 (Required, Previous); PPB.502, PPB.510, PPB.545, PPB.551 (Required, Concurrent).

PPB.556
Advanced Therapeutics II
Continuation of Advanced Therapeutics I. This is the last of four courses that are sequenced over four semesters. Students will integrate and apply pharmacological and biopharmaceutical principles on an advanced level. Using evidence-based medicine, the student will focus on individualizing drug therapy and solving complex medication-related problems in the treatment of selected disease states in pediatrics, pulmonary medicine, geriatrics, neurology, psychiatry, endocrinology, and dermatology.
4.00 credit hours. Lecture. PPB.502, PPB.510, PPB.545, PPB.551, PPB.555 (Required, Previous); PPB.546, PPB.552 (Required, Concurrent).

PPB.600
Principles of Pharmaceutical Care
Introduces students to the concept of pharmaceutical care and the pharmacist's responsibility for ensuring optimal healthcare outcomes for the patients he or she serves. This course is designed to prepare students for future pharmacotherapeutic courses. Clinical skills focused on include collection, organization, and evaluation of the patient and drug information needed to render optimal pharmaceutical care recommendations; physical assessment skills; oral and written healthcare communications; and clinical problem solving.
3.00 credit hours. Lecture.

PPB.619
IPPE Community Elective
This course will provide students with pharmacy practice experience using active learning in a community practice setting with an opportunity to continue the development of basic practice skills and to interface with patients and healthcare providers. In addition, the rotation will focus on providing students with work force readiness skills in communications, problem solving, conflict resolution, and accountability.
1.00 credit hours. Clinical. PPB.419 (Required, Previous or Concurrent).

PPB.623
Pharmacotherapeutics I Postbaccalaureate to Doctor of Pharmacy Pathway
This sequence of courses addresses the principles of pharmacotherapeutics and functional consequences of major diseases. Discussion focuses on therapeutic problem solving and the evaluation of treatment strategies commonly used in clinical practice. Emphasis includes selection of appropriate treatment regimens and monitoring parameters; assessment of adverse drug reactions, drug interactions, and drug-induced diseases; determination of therapeutic endpoints and goals; and individualization of therapy based on pharmacokinetic and pharmacodynamic principles as well as pharmacoeconomic considerations. This series of courses builds on concepts and knowledge in a stepwise approach. In the advanced course sequences, discussion focuses on more complex therapeutic problem solving and utilizes knowledge gained previously.
5.00 credit hours. Lecture. PPB.672, PPB.681 (Required, Previous); PPB.623A (Required, Previous or Concurrent).

PPB.623A
Pharmacotherapeutics I Practice
This series of courses engages students in the provision of pharmaceutical care. It involves small-group case discussions and experiential coursework. Students will present and discuss patient care activities from their practice sites that correspond to topics and concepts learned in the pharmacotherapeutic course series. Cases, journal clubs, and pharmacy consults are discussed using audio and/or textual online discussion boards. One oral patient case presentation is made by students each semester on campus. Students are expected to spend a minimum of five hours each week conducting patient care activities at the practice sites. These activities are reviewed by a faculty preceptor.
0.00 credit hours. Lecture. PPB.623 (Required, Previous or Concurrent).

PPB.625
Pharmacotherapeutics II Nontraditional
This sequence of courses addresses the principles of pharmacotherapeutics and functional consequences of major diseases. Discussion focuses on therapeutic problem- solving and the evaluation of treatment strategies commonly used in clinical practice. Emphasis includes selection of appropriate treatment regimens and monitoring parameters, assessment of adverse drug reactions, drug interactions and drug-induced diseases, determination of therapeutic endpoints and goals, and individualization of therapy based on pharmacokinetic and pharmacodynamic principles as well as pharmacoeconomic considerations. This series of courses builds on concepts and knowledge in a stepwise approach. In the advanced course sequences, discussion focuses on more complex therapeutic problem solving and utilizes knowledge gained previously.
6.00 credit hours. Lecture. PPB 623, PPB.623A (Required, Previous); PPB.625A (Required, Concurrent).

PPB.625A
Pharmacotherapeutics II Practice
This series of courses engages students in the provision of pharmaceutical care. It involves small-group case discussions and experiential coursework. Students will present and discuss patient care activities from their practice sites that correspond to topics and concepts learned in the pharmacotherapeutic course series. Cases, journal clubs, and pharmacy consults are discussed using audio and/or textual online discussion boards. One oral patient case presentation is made by students each semester on campus. Students are expected to spend a minimum of five hours each week conducting patient care activities at the practice sites. These activities are reviewed by a faculty preceptor.
0.00 credit hours. Lecture. PPB.625 (Required, Previous or Concurrent).

PPB.633
Pharmacotherapeutics III Postbaccalaureate to Doctor of Pharmacy Pathway
This sequence of courses addresses the principles of pharmacotherapeutics and functional consequences of major diseases. Discussion focuses on therapeutic problem- solving and the evaluation of treatment strategies commonly used in clinical practice. Emphasis includes selection of appropriate treatment regimens and monitoring parameters, assessment of adverse drug reactions, drug interactions and drug-induced diseases, determination of therapeutic endpoints and goals, and individualization of therapy based on pharmacokinetic and pharmacodynamic principles as well as pharmacoeconomic considerations. This series of courses builds on concepts and knowledge in a stepwise approach. In the advanced course sequences, discussion focuses on more complex therapeutic problem solving and utilizes knowledge gained previously.
6.00 credit hours. Lecture. PPB.623A, PPB.625, PPB.625A (Required, Previous); PPB.623, PPB.633A (Required, Previous or Concurrent).

PPB.633A
Pharmacotherapeutics III Practice
This series of courses engages the students in the provision of pharmaceutical care. It involves small group case discussions and experiential coursework. Students will present and discuss patient care activities from their practice sites that correspond to topics and concepts learned in the pharmacotherapeutic course series. Cases, journal clubs and pharmacy consults are discussed using audio and/or textual online discussion boards. One oral patient case presentation is presented by students each semester on-campus. Students are expected to spend a minimum of 5 hours each week conducting patient-care activities at the practice sites. These activities are reviewed by a faculty preceptor.
0.00 credit hours. Lecture. PPB.633 (Required, Previous or Concurrent).

PPB.668
Advanced Pharmacy Practice Experience
The Advanced Pharmacy Practice Experience consists of a four-week, full time, clinical rotation (160 hours total) under the supervision of an MCPHS University preceptor. Clinical rotation may begin after the successful completion of PPB633 and PPB633A. Clinical rotation must be scheduled and completed within 1 year of completion of PPB633 and PPB633A.

3.00 credit hours. Clinical. PPB.623, PPB.623A, PPB.633, PPB.633A, PPB.625, PPB.625A (Required, Previous).

PPB.668A
Pharmacotherapeutics IV Practice
This course is a continuation of PHA I, II, and III Practice and Seminar. This course further engages students in the provision of pharmaceutical care at their practice sites. More complex and extensive patient care activities are expected and evaluated by faculty preceptors. Practice site activities are presented to small groups using online discussion boards. Students are expected to spend a minimum of 10 hours each week conducting patient-care activities at the practice sites. Students are required to present one formal presentation on campus.
4.00 credit hours. Lecture. PPB.623A, PPB.625A, PPB.633A (Required, Previous).

PPB.672
Drug Literature Resources and Evaluation
This course focuses on three specific aspects relative to the medical literature: retrieval methods, evaluation techniques and clinical application. The types of medical literature are presented, compared and contrasted with regard to their applicability to clinical problem solving. Clinical situations and drug related problems are presented throughout the course to illustrate the application of the literature as a primary component of the clinical problem-solving process.
3.00 credit hours. Lecture. PPB.600, PSB.421 (Required, Previous).

PPB.681
Clinical Pharmacokinetics
This course involves clinical applications of pharmacokinetic principles. Emphasis is placed on identification of actual and theoretical factors that contribute to variability's in pharmacokinetic parameters and associated pharmacological responses. Several dosing methods are critically explored, contrasted, and applied using a case history approach.
2.00 credit hours. Lecture. PPB.600 (Required, Previous).

PPBC.601
Inpatient Adult Patient Care
Students engage in adult inpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include acute disease-state management utilizing the Pharmacists' Patient Care Process, population health and wellness promotion for diverse patient populations, person-centered care using evidenced-based medicine, and communicating with and educating healthcare professionals and patients. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Clinical. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411 (Required, Previous).

PPBC.602
Hospital/Health Systems Pharmacy
Students engage in inpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include acute and chronic disease-state management utilizing the Pharmacists' Patient Care Process; supporting transitions of care; providing diverse patient-population care; dispensing system and safety management; pharmacy practice management; and identifying/ addressing social determinants of health, when possible. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Clinical. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411 (Required, Previous).

PPBC.603
Ambulatory Care
Students engage in outpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include disease-state management utilizing the Pharmacists' Patient Care Process at the point of prescribing; population health; person-centered care using evidenced-based medicine and incorporating social determinants of health; and communicating with/educating diverse patient populations and healthcare professionals. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Clinical. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411 (Required, Previous).

PPBC.604
Community Pharmacy
Students engage in outpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include disease-state management utilizing the Pharmacists' Patient Care Process at the point of prescription fulfillment; population health; person-centered care, communication, and education for diverse patient populations; dispensing system and safety management, and outpatient pharmacy

management. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Clinical. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411 (Required, Previous).

PPBC.605
APPE Direct Patient Care Elective
This elective course permits exploration of and/or advanced study in areas of professional interest in a patient care setting. The course structure provides students the opportunity to: (1) mature professionally, (2) secure the breadth and depth of experiences needed to achieve the practice-ready educational outcomes, and (3) explore various sectors of practice. Both of the two 6-week electives may be in a patient care setting.
6.00 credit hours. Clinical. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411 (Required, Previous).

PPBC.606
APPE Non-Patient Care Elective
These courses offer students experiences in which they communicate with patients, professionals, and peers; identify clinical problems; and formulate solutions. Clinical clerkship represents a full academic year (1,440 hours) of clinically oriented rotations offered primarily at off-campus sites. All rotations are six weeks in length. Required rotations: internal medicine, institutional pharmacy practice, ambulatory care, and community pharmacy practice. Elective rotations: chosen from such areas as medication therapy management, medication reconciliation, administration, cardiology, critical care medicine, drug information, emergency medicine, gastroenterology, home healthcare, infectious disease, neonatology, nephrology, neurology, oncology/hematology, obstetrics/gynecology, pediatrics, poison information, and psychiatry.
6.00 credit hours. Clinical. PPB.502, PPB.519, PPB.545, PPB.546, PPB.551, PPB.552, PSB.411, PSB.432 (Required, Previous).

PPBC.690
Ambulatory Care
Students engage in outpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include disease-state management utilizing the Pharmacists' Patient Care Process at the point of prescribing; population health; person-centered care using evidenced-based medicine and incorporating social determinants of health; and communicating with/educating diverse patient populations and healthcare professionals. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism
4.00 credit hours. Clinical. PPB.633, PPB.633A (Required, Previous).

PPBC.691
Community Pharmacy
Students engage in outpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include disease-state management utilizing the Pharmacists' Patient Care Process at the point of prescription fulfillment; population health; person-centered care, communication, and education for diverse patient populations; dispensing system and safety management, and outpatient pharmacy management. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism
4.00 credit hours. Clinical. PPB.633, PPB.633A (Required, Previous).

PPBC.692
Hospital/Health Systems Pharmacy
Students engage in inpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include acute and chronic disease-state management utilizing the Pharmacists' Patient Care Process; supporting transitions of care; providing diverse patient-population care; dispensing system and safety management; pharmacy practice management; and identifying/ addressing social determinants of health, when possible. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism
4.00 credit hours. Clinical. PPB.633, PPB.633A (Required, Previous).

PPBC.693
Inpatient Adult Patient Care
Students engage in adult inpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include acute disease-state management utilizing the Pharmacists' Patient Care Process, population health and wellness promotion for diverse patient populations, person-centered care using evidenced-based medicine, and communicating with and educating healthcare professionals and

patients. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
4.00 credit hours. Clinical. PPB.633, PPB.633A (Required, Previous).

PPBC.700
NAPLEX Review Modules and Board Review Library Services
Students in the final year of the PharmD program will complete a series of on-line NAPLEX review modules and regularly scheduled assessments in preparation for the NAPLEX licensure exam. Students will also attend and participate in a Board Review program and complete a mandatory diagnostic exam during the last APPE rotation.
0.00 credit hours. Lecture.

PPBC.700B
NAPLEX Readiness
This multi-semester course engages students in focused exams and content review sessions designed to ensure development of competencies to the level needed to achieve first time success on the NAPLEX.
0.00 credit hours. Lecture.

PPBC.700C
NAPLEX Readiness
This multi-semester course engages students in focused exams and content review sessions designed to ensure development of competencies to the level needed to achieve first time success on the NAPLEX.
0.00 credit hours. Lecture.

Pharmacy Practice—Worcester/Manchester (PPW)

PPW.330
Introduction to Patient Care I
A course designed to introduce pharmacy practice principles of patient care. Topics for discussion include an introduction to: prescription and medical terminology, basic pharmaceutical calculations, interprofessional education, pharmacy references, patient counseling, major drug categories, basic concepts of patient care and the patient care process, communication and professionalism.
3.00 credit hours. Lecture.

PPW.331
Introduction to Patient Care II
The second course in this sequence continues exploring and applying pharmacy practice principles. Course elements: 1) discussing and engaging in communication, calculations, medical and prescription terminology, abbreviations, and definitions, and the patient care process 2) promoting professionalism, by developing organizational, citizenship, and leadership skills, 3) applying learned skill sets in patient care activities and 4) completing immunization certification activities.
2.00 credit hours. Lecture. PSW.350, PPW.330 (Required, Previous).

PPW.333
Introduction to Patient Care III with Lab
This is the third course in a series designed to continue exploring patient care in various pharmacy practice settings. Students will participate in active learning strategies that emphasize the role of the pharmacist in pharmacy operations, immunizations, interprofessional communications, and the medication use system. The course introduces Entrustable Professional Activity (EPA) simulating community and institutional practice settings.
2.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous).

PPW.333L
Introduction to Patient Care III Lab
This is the third course in a series designed to continue exploring patient care in various pharmacy practice settings. Students will participate in active learning strategies that emphasize the role of the pharmacist in pharmacy operations, immunizations, interprofessional communications, and the medication use system. The course culminates in an Entrustable Professional Activity (EPA) simulating community practice.
0.00 credit hours. Laboratory.

PPW.340
U.S. Healthcare and Public Health Systems
This course examines U.S. health systems and contemporary reimbursement models for person-centered and population-based care. Cause-and-effect patterns of health and disease in large populations are explored, and

initiatives that advance public health and wellness are discussed. Through application-based activities, students will analyze factors influencing healthcare delivery and outcomes such as access to healthcare and social determinants of health.
3.00 credit hours. Lecture.

PPW.340A
ST: Introduction to the U.S. Healthcare Delivery System
Special Topics course.
2.00 credit hours. Lecture.

PPW.347
Health Literacy for Pharmacists
This course examines and applies concepts of health literacy including populations at risk, print and internet materials, health literacy assessment tools, writing in plain language, communication skills, cultural literacy, and vaccine literacy. This course will educate and prepare students to assess appropriateness of materials, methods of communication, and cultural awareness for patients with a wide level of health literacy levels.
2.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PPW.411, PSW.301, PSW.312, PSW.312L, PSW.313, PSW.325 (Required, Previous); PPW.333, PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous or Concurrent).

PPW.348
Self Care Therapeutics/ Pharmacotherapeutics I
This course examines the principles and application of nonprescription and prescription drug therapy for common disease states. Utilizing a case-based approach and the steps from the Pharmacists' Patient Care Process, students learn how to select appropriate pharmacotherapy that is patient-centered. Emphasis will be placed on the role of the pharmacist in determining the appropriate use of nonprescription medications.
3.00 credit hours. Lecture. PSW.385 (Required, Concurrent).

PPW.355
Drug Interactions
This drug interactions elective will provide a general overview of the various types of drug interactions that commonly occur in clinical practice, outlining the major mechanisms of interaction and the major classifications of drugs. Discussions will focus on pharmacokinetic and pharmacodynamic drug interactions as well as interactions involving the biotransformation pathways. Patient case studies are used to help the student apply learned information in practice and to illustrate clinical evidence, mechanism, importance, and management of drug interactions.
2.00 credit hours. Lecture.

PPW.356
Holistic Approach to Disease-Free Living
This elective course is designed to educate students on disease prevention and wellness. The course will focus on areas of nutrition, fitness, and mindset. Students will also be introduced to techniques used in making lifestyle changes or helping patients make lifestyle changes.
2.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous).

PPW.357
Koru Mindfulness Meditation for Stress Reduction
Koru Mindfulness is an evidence-based curriculum that teaches mindfulness, meditation, and stress management. During this course, students will practice mindfulness and stress reduction techniques to become more present and reduce time spent worrying. Research has shown that students who take Koru Mindfulness felt less stressed, grew more mindful, slept better, and had more self-compassion. Daily meditation homework will be assigned.
2.00 credit hours. Lecture. PPW.401, PPW.402, PPW.412, PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PPW.360
Pharmacy Law
This course introduces the student to the state and federal regulations that govern the practice of pharmacy. Topics include but are not limited to the Food, Drug, and Cosmetic Act; the Controlled Substances Act; the Omnibus Budget Reconciliation Act; the Poison Prevention Act; and the Health Insurance Portability and Accountability Act, as well as specific state rules and regulations.
2.00 credit hours. Lecture.

PPW.363
Drugs of Abuse
Examines the pharmacology, pathophysiology, and pharmacotherapy of selected drugs of abuse. Students gain in-depth exposure to the illnesses and injuries sustained by drugs of abuse. Emphasizes understanding the pharmacology and pathophysiology of these drugs on the human body, the pharmacotherapy of possible toxicologic emergencies, and the determination of individual therapeutic endpoints.
2.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous).

PPW.370
Directed Study
Individual study directed by a faculty member in an area of her/his expertise. Faculty-assisted instruction using existing or previously known data and information. Eligible students must have earned a cumulative minimum 2.7 grade point average and completed or is enrolled in all required courses consistent with their current academic standing.
2.00 credit hours. Lecture.

PPW.371
Introduction to Biotechnology Industry
Introduction to the pharmaceutical industry with focus on the biotechnology industry. Students learn about the development of clinical trials, drug approval processes and novel therapies including gene therapy, cell based therapies and stem cell based therapies.
2.00 credit hours. Lecture.

PPW.371H
ST: Pharmacotherapy of HIV Infection
Special Topics course. This course will introduce students to basic principles in the pharmacotherapy of HIV infection, including drug-specific issues (adverse effects, proper dosing and regimen selection) as well as patient compliance and medication safety.
2.00 credit hours. Lecture.

PPW.371JJ
ST: Acute and Critical Care Medicine
Special Topics course. This course is an introduction to acute and critical care pharmacy practice. Students will learn how to apply the Pharmacist's Patient Care Process to the hospitalized adult patient. Students will also be able to describe the pharmacist's roles and responsibilities as a member of a multidisciplinary care team. Instructors will share first-hand accounts of their hospital practice experience and provide readings and instructional materials to facilitate student learning.
2.00 credit hours. Lecture.

PPW.371K
ST: Fundamentals of Aging
Special Topics course. This course will introduce general concepts regarding the biomedical principles of aging, social/behavioral issues, ethical considerations, approaches to geriatric assessment, adverse drug events, and polypharmacy. Students will identify common problems and controversies encountered when treating elderly patients as well as implement strategies to minimize their occurrence through a combination of face-to-face and online activities.
2.00 credit hours. Lecture.

PPW.371M
The Patient Behind the Pills: Lessons in Effective Patient Care
This course provides students with tools to improve their patient interaction skills as healthcare practitioners. Students will learn communication techniques, such as motivational interviewing, in an effort to help patients reach their healthcare goals. Students will interact with various experts in different patient populations to help them learn about and determine the specific healthcare needs and beliefs that can affect that populations' healthcare outcomes.
2.00 credit hours. Lecture.

PPW.371O
Best Practices for Safe Medication Use
This course will expose students to medication safety topics using flipped classroom approach. Faculty will utilize audio/video technology to introduce content to students prior to the class session. Class time will be used for interactive activities with faculty and students. Students will learn best practices that promote safety and optimize patient outcomes.
2.00 credit hours. Lecture.

PPW.371PP
ST: Concepts in Pediatric Pharmacotherapy
Special Topics course.
2.00 credit hours. Lecture.

PPW.371QQ
ST: Advanced Pharmacotherapy: Reproductive and Gender Pharmacotherapy
Special Topics course. This course discusses advanced level pharmacotherapy for reproductive and gender health. Through interactive lectures, cases, and simulated patient encounters, students will develop the clinical skills and cultural competency necessary to provide inclusive, patient-centered care to individuals seeking reproductive and gender health services. Students will earn a national certificate that permits pharmacists to prescribe contraception with successful completion of the course.
2.00 credit hours. Lecture.

PPW.371W
ST: Ambulatory Care Health
Special Topics course. This hybrid course focuses on the core chronic disease states in ambulatory care. The online portion will be didactic in nature and focus on pharmacotherapy and disease state management. The hands-on component will build on pharmacist patient care skills.
2.00 credit hours. Lecture.

PPW.372A
ST: Oral Communications for Pharmacy
Special Topics course.
3.00 credit hours. Lecture.

PPW.372D
ST: Expository Writing-World Religions
Special Topics course.
3.00 credit hours. Lecture.

PPW.373
ST: Oncology Pharmacy
Special Topics course. This course will introduce Doctor of Pharmacy candidates to oncology pharmacy. Students will learn about activities of oncology pharmacists, contemporary oncology patient care, cancer drug development, commonly used anti-neoplastics, use of herbal therapies in cancer therapy, cancer prevention, and current trends in cancer pharmacotherapy. Students will gain experience in assessing oncology patient cases, and analyzing clinical trials of cancer therapy.
2.00 credit hours. Lecture.

PPW.376
Advanced Applications in Self Care
This course will examine the principles and application of over the counter drug therapy in the treatment of common disease states. Emphasis will be placed on the role of the pharmacist in determining the appropriate use of OTC medications. Utilizing a case base approach students will learn how to select appropriate over the counter drug regimens, monitor for the safe and efficacious use of drugs, determine therapeutic endpoints, and individualize over the counter drug therapy.
2.00 credit hours. Lecture. PPW.401, PPW.402, PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PPW.378
Pharmacy Administration and Pharmacoeconomics
An overview of the complexities of pharmacy administration, pharmacoeconomics and patient health outcomes assessment in various pharmacy practice settings.
2.00 credit hours. Lecture. PPW.340, PPW.350 (Required, Previous).

PPW.379
Drug Literature Evaluation and Informatics I
This course introduces retrieval methods, evaluative techniques, and application of the various forms of primary, secondary, and tertiary medical and pharmacy literature. In small and large group settings, utilizing a student-centered approach, students actively develop the skills needed to apply the literature to patient care issues.

2.00 credit hours. Lecture. PPW.330 (Required, Previous); PPW.331 (Required, Previous or Concurrent).

PPW.381
Introduction to the Care of Pediatric Patients
This elective course provides an introduction to pediatric healthcare, emphasizing the developmental, medical, and therapeutic needs of children. Students will explore pediatric disease prevention, common illnesses, barriers to care, and family-centered care. The course aims to enhance students' understanding of the unique aspects of pediatric healthcare, preparing them to work effectively with young patients and their families.
2.00 credit hours. Lecture.

PPW.384
Drug Literature Evaluation and Informatics II
This course provides application of concepts introduced in Drug Literature Evaluation and Informatics I, including retrieval, appraisal, and summary of biomedical literature. Students will apply these skills to patient cases in small and large group settings using a student-centered approach.
1.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous).

PPW.401
Intermediate Pharmacy Practice Experience
Students engage in community-based professional experiences that support their personal and professional development and practice readiness. Utilizing the Pharmacists' Patient Care Process, evidence-based medicine, and Entrustable Professional Activities (EPAs), students participate in patient-care activities to further develop their knowledge, skills, and serve the outpatient community. Students are evaluated on their practice readiness by using EPAs and competency-based assessments.
4.00 credit hours. Clinical. PPW.330, PPW.331, PPW.333, PPW.340, PPW.379, PSW.312, PSW.313, PSW.360, PSW.362 (Required, Previous).

PPW.402
Intermediate Pharmacy Practice Instiutional Pharmacy
Students engage in community-based professional experiences that support their personal and professional development and practice readiness. Utilizing the Pharmacists' Patient Care Process, evidence-based medicine, and Entrustable Professional Activities (EPAs), students participate in patient-care activities to further develop their knowledge, skills, and serve the outpatient community. Students are evaluated on their practice readiness by using EPAs and competency-based assessments.
4.00 credit hours. Clinical. PPW.330, PPW.331, PPW.333, PPW.340, PPW.379, PSW.312, PSW.313, PSW.360, PSW.362 (Required, Previous).

PPW.403
Preparation and Application Thru IPPE
The course engages students in activities that support the knowledge and skills acquired during the first professional year. Students continue to develop their clinical reasoning skills through patient case discussions, practicing calculations, and interpreting biostatistics. The course is a progression requirement for the didactic curriculum in the second professional year.
1.00 credit hours. Lecture. PPW.330, PPW.331, PPW.333, PPW.340, PPW.348, PPW.360, PPW.378, PPW.379, PPW.384, PSW.311, PSW.312, PSW.312L, PSW.313, PSW.325, PSW.335 (Required, Previous).

PPW.411A
Student Personal and Professional Development I
This is the first course in the Personal and Professional Development series, designed to foster the development of skills and attributes intended to advance students' professional, personal, and career development with practical application opportunities. Students will reflect on their experiences and achievements through maintaining portfolios, engaging in co-curricular activities, and participating in intentional discussions with faculty advisors.
0.00 credit hours. Lecture.

PPW.411B
Student Personal and Professional Development I
This is the first course in the Personal and Professional Development series, designed to foster the development of skills and attributes intended to advance students' professional, personal, and career development with practical application opportunities. Students will reflect on their experiences and achievements through maintaining portfolios, engaging in co-curricular activities, and participating in intentional discussions with faculty advisors.
1.00 credit hours. Lecture.

PPW.412A
Student Personal and Professional Development II
This is the second course in the Personal and Professional Development series, designed to continue to foster the development of skills and attributes intended to advance students' professional, personal, and career development with practical application opportunities. Students continue to reflect on their experiences and achievements through maintaining portfolios, engaging in co-curricular activities, and participating in intentional discussions with faculty advisors.
0.00 credit hours. Lecture. PPW.333, PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous or Concurrent).

PPW.412B
Student Personal and Professional Development II
This is the second course in the Personal and Professional Development series, designed to continue to foster the development of skills and attributes intended to advance students' professional, personal, and career development with practical application opportunities. Students continue to reflect on their experiences and achievements through maintaining portfolios, engaging in co-curricular activities, and participating in intentional discussions with faculty advisors.
1.00 credit hours. Lecture. PPW.333, PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous or Concurrent).

PPW.412C
Student Personal and Professional Development II
This second course in the Student Personal and Professional Development series is designed to prepare students for their professional responsibilities as students and ultimately as pharmacists. Self-awareness, leadership, advocacy, cultural sensitivity, and professionalism will be discussed and applied via various activities. Documentation of experiences via Portfolios and for participation in Co-Curricular activities will continue.
1.00 credit hours. Lecture. PPW.333, PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous or Concurrent).

PPW.413A
Student Personal and Professional Development III
This third course in the Student Personal and Professional Development series is designed to continue to prepare students for their professional responsibilities as students and pharmacists. Students will work through simulated patient cases, applying communication skills, self-awareness, leadership, advocacy, and professionalism, utilizing clinical reasoning in a group setting and presenting patient care plans individually. Portfolio documentation of experiences will continue.
0.00 credit hours. Lecture. PPW.401, PPW.402, PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous); PPW.412, PPW.445, PPW.453, PSW.470, PSW.475 (Required, Previous or Concurrent).

PPW.413B
Student Personal and Professional Development III
This third course in the Student Personal and Professional Development series is designed to continue to prepare students for their professional responsibilities as students and pharmacists. Students will work through simulated patient cases, applying communication skills, self-awareness, leadership, advocacy, and professionalism, utilizing clinical reasoning in a group setting and presenting patient care plans individually. Portfolio documentation of experiences will continue.
0.00 credit hours. Lecture. PPW.401, PPW.402, PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous); PPW.412, PPW.445, PPW.453, PSW.470, PSW.475 (Required, Previous or Concurrent).

PPW.413C
Student Personal and Professional Development III
This third course in the Student Personal and Professional Development series is designed to continue to prepare students for their professional responsibilities as students and pharmacists. Students will work through simulated patient cases, applying communication skills, self-awareness, leadership, advocacy, and professionalism, utilizing clinical reasoning in a group setting and presenting patient care plans individually. Portfolio documentation of experiences will continue.
1.00 credit hours. Lecture. PPW.401, PPW.402, PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous); PPW.412, PPW.445, PPW.453, PSW.470, PSW.475 (Required, Previous or Concurrent).

PPW.414
NAPLEX Readiness
The course engages students in activities designed to encourage self-assessment and supports preparation for the pharmacy licensure exam.
1.00 credit hours. Lecture.

PPW.440
Patient Care Seminar I
Students will apply knowledge and skills acquired during the first professional year Drug Literature Evaluation courses, to answer patient case based questions and synthesize recommendations from primary literature. Utilizing a case-based approach and steps from the Pharmacists' Patient Care Process, students will be taught and assessed on general patient assessment skills/techniques that will align with the Pharmacotherapeutics series
1.00 credit hours. Lecture. PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous).

PPW.445
Patient Care Seminar II with Lab
This course is the 2nd in a three part series applying knowledge and skills acquired during the first professional year (Drug Literature and Informatics I and II) to answer case based questions and synthesize recommendations from primary literature using the steps from the Pharmacists' Patient Care Process. General patient assessment skills/techniques will be discussed and align with the Pharmacotherapeutics series.
2.00 credit hours. Laboratory, Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PPW.448
Patient Care Seminar III Lab
This course is the 3rd in a three-part series applying knowledge and skills acquired during the first and second professional year to answer case-based questions and synthesize recommendations using evidenced based medicine and the steps from the Pharmacists' Patient Care Process. Students will complete activities to prepare for advanced pharmacy practice experiences and an objective structured clinical examination.
1.00 credit hours. Laboratory, Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PPW.450
Pharmacotherapeutics II
This sequence of courses examines the principles and application of rational drug therapy in the treatment of the common disease states. Utilizing a case-based approach, students learn how to select appropriate drug regimens based on patientspecific data and pharmacokinetic principles of specific drugs and disease states, monitor for the safe and efficacious use of drugs, determine therapeutic endpoints, and individualize drug therapy.
4.00 credit hours. Lecture. PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous).

PPW.453
Pharmacotherapeutics III
This sequence of courses examines the principles and application of rational drug therapy in the treatment of the common disease states. Utilizing a case-based approach, students learn how to select appropriate drug regimens based on patient-specific data and pharmacokinetic principles of specific drugs and disease states, monitor for the safe and efficacious use of drugs, determine therapeutic endpoints, and individualize drug therapy.
6.00 credit hours. Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PPW.457
Pharmacotherapeutics IV
This sequence of courses examines the principles and application of rational drug therapy in the treatment of the common disease states. Utilizing a case-based approach, students learn how to select appropriate drug regimens based on patientspecific data and pharmacokinetic principles of specific drugs and disease states, monitor for the safe and efficacious use of drugs, determine therapeutic endpoints, and individualize drug therapy.
6.00 credit hours. Lecture. PPW.348, PPW.384, PPW.453, PSW.335, PSW.385 (Required, Previous).

PPW.460
Pharmacy Ethics
This course reviews the ethics rules and principles and their application to pharmacy practice. Students will explore the rules and principles via online lectures. Students will engage in decision making and practice professionalism during class case-study discussions.
2.00 credit hours. Lecture. PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous).

PPW.461
Acute and Critical Care Pharmacy Practice
Students will learn how to apply the Pharmacist's Patient Care Process to hospitalized adult patients and describe the pharmacist's roles and responsibilities as a member of a multidisciplinary acute/critical care team. Students will also hone their oral communication and literature evaluation skills by defending and justifying drug therapy decisions via group presentations.

2.00 credit hours. Lecture. PPW.348, PPW.450 (Required, Previous); PPW.453 (Required, Previous or Concurrent).

PPW.465
Clinical Reasoning
This course is designed to further develop students' problem-solving and clinical reasoning skills to support experiential and practice readiness. Application opportunities utilize a systematic process of obtaining person-specific information, interpreting diagnostic and clinical data, and making pharmacotherapeutic decisions that are person-centered and evidence-based. Self-awareness, leadership, and professionalism are fostered through team engagement, collaboration, and reflection.
1.00 credit hours. Lecture. PPW.445, PPW.453, PSW.470, PSW.475 (Required, Previous); PPW.448, PPW.457, PSW.485 (Required, Concurrent).

PPW.481
Concepts in Pediatric Pharmacotherapy
This elective course uses a comprehensive teaching approach to explore applied pediatric and neonatal drug therapy concepts with the intent of building a general knowledge base that can be applied to various practice settings. Students will learn to identify and address medication-related issues in pediatrics.
2.00 credit hours. Lecture.

PPW.491
Pharmacotherapeutics II
This sequence of courses examines the principles and application of rational drug therapy in the treatment of the common disease states. Utilizing a case-based approach, students learn how to select appropriate drug regimens based on patient specific data and pharmacokinetic principles of specific drugs and disease states, monitor for the safe and efficacious use of drugs, determine therapeutic endpoints, and individualize drug therapy.
8.00 credit hours. Lecture. PPW.348 (Required, Previous).

PPW.550
Graduate Project Capstone
Students develop a pharmacy-related project linked to optimizing patient outcomes and/or advancing pharmacy profession. Students work collaboratively and utilize creative and critical thinking skills to investigate, analyze, and communicate data. Students also perform self- and peer evaluations to identify professional strengths and weaknesses. The course represents an Entrustable Professional Activity (EPA) simulating a pharmacist approach to answering a healthcare-related problem.
0.00 - 1.00 credit hours. Lecture. PPW.448, PPW.457, PSW.473, PSW.485 (Required, Previous).

PPWC.500
APPE Inpatient Adult Patient Care
Students engage in adult inpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include acute disease-state management utilizing the Pharmacists' Patient Care Process, population health and wellness promotion for diverse patient populations, person-centered care using evidenced-based medicine, and communicating with and educating healthcare professionals and patients. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Lecture. PPW.445, PPW.448, PPW.453, PPW.457, PSW.470, PSW.473, PSW.475, PSW.485 (Required, Previous).

PPWC.501
APPE Ambulatory Care
Students engage in outpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include disease-state management utilizing the Pharmacists' Patient Care Process at the point of prescribing; population health; person-centered care using evidenced-based medicine and incorporating social determinants of health; and communicating with/educating diverse patient populations and healthcare professionals. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Lecture. PPW.445, PPW.448, PPW.453, PPW.457, PSW.470, PSW.473, PSW.475, PSW.485 (Required, Previous).

PPWC.502
APPE Hospital/Health Systems Experience III
Students engage in inpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include acute and chronic disease-state management utilizing

the Pharmacists' Patient Care Process; supporting transitions of care; providing diverse patient-population care; dispensing system and safety management; pharmacy practice management; and identifying/ addressing social determinants of health, when possible. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Lecture. PPW.445, PPW.448, PPW.453, PPW.457, PSW.470, PSW.473, PSW.475, PSW.485 (Required, Previous).

PPWC.503
APPE Community Experience IV
Students engage in outpatient-based experiences that support practice-readiness, interprofessional team-readiness, and personal/professional development. Experiences include disease-state management utilizing the Pharmacists' Patient Care Process at the point of prescription fulfillment; population health; person-centered care, communication, and education for diverse patient populations; dispensing system and safety management, and outpatient pharmacy management. Evaluation includes Entrustable Professional Activities, Leadership, Communication, Self-Awareness, and Professionalism.
6.00 credit hours. Lecture. PPW.445, PPW.448, PPW.453, PPW.457, PSW.470, PSW.473, PSW.475, PSW.485 (Required, Previous).

PPWC.504
APPE Patient Care Elective Experience V
This elective course permits exploration of and/or advanced study in areas of professional interest in a patient care setting. The course structure provides students the opportunity to: (1) mature professionally, (2) secure the breadth and depth of experiences needed to achieve the practice-ready educational outcomes, and (3) explore various sectors of practice.
6.00 credit hours. Lecture. PPW.445, PPW.448, PPW.453, PPW.457, PSW.470, PSW.473, PSW.475, PSW.485 (Required, Previous).

PPWC.505
APPE Non-Patient Care Elective Experience V
This elective course permits exploration of and/or advanced study in areas of professional interest in a non-patient care setting. The course structure provides students the opportunity to: (1) mature professionally, (2) secure the breadth and depth of experiences needed to achieve the practice-ready educational outcomes, and (3) explore various sectors of practice.
6.00 credit hours. Lecture. PPW.445, PPW.448, PPW.453, PPW.457, PSW.470, PSW.473, PSW.475, PSW.485 (Required, Previous).

Pharmaceutical Sciences—Boston (PSB)

PSB.210
Macroeconomics
This macroeconomics course provides a foundation for understanding fiscal and monetary policies in a free market. Major course topics include supply-and-demand analysis, inflation, unemployment, and gross national product.
3.00 credit hours. Lecture.

PSB.215
Microeconomics
The student will be introduced to the principles of microeconomics which focus primarily on the basic theories of supply and demand as they relate to individuals and to individual business. Also, the student will examine how the forces of supply and demand affect decisions regarding the production and marketing of goods and services.
3.00 credit hours. Lecture.

PSB.225
Anatomy and Physiology for Pharmacy
Students will learn about the principles of basic human anatomy and physiology as they relate to Pharmacy. Students will analyze and appraise the human body maintenance of normal functions, with emphasis on important physiological drug targets.
3.00 credit hours. Lecture. BIO.151, BIO.152 (Required, Previous).

PSB.230
Introduction to Pharmaceutical Sciences
This course provides the foundation of basic physico-chemical properties of drug molecules and calculations associated with drug delivery and dosing. Additionally, the course prepares students for chemistry and calculations-based courses in the professional year of the pharmacy program.

2.00 credit hours. Lecture. MAT.151 or MAT.171, CHE.231 (Required, Previous); CHE.232 (Required, Previous or Concurrent).

PSB.235
Introduction to Pharmaceutical Business
Introduces student to the fundamentals of business and provides them with an understanding of the differences between pharmaceutical business and other types of business. The student gains understanding of the different segments of pharmaceutical business and the functions within a business.
3.00 credit hours. Lecture.

PSB.238
Introduction to Life Sciences and Medical Device Organizations
Students will be introduced to the structure and operations of life science and medical device companies. Students will learn about value creation in these types of healthcare businesses at all stages of the business life cycle: startup, clinical development, commercialization and maintenance/exit strategy. The student will explore the contribution of each key function within the business to that value creation.
3.00 credit hours. Lecture.

PSB.240
Introduction to Health Policy Regulatory Affairs
Students will be introduced to health policy, the process for developing and analyzing policy and the implications on processes, responsibilities and ethical obligations for health professionals. Students will get an overview of the regulatory environment for healthcare, including the role of the FDA, and the manner in which regulations are developed and enforced.
3.00 credit hours. Lecture. PSB.235 or HCM.245 (Required, Previous).

PSB.301
Pharmacology for Allied Health Professionals
An introductory course designed to familiarize students with commonly used drugs, their mechanisms of action, indications and major adverse effects. The course follows a disease-based format and includes pharmacotherapy of cardiovascular, CNS, endocrine, bacterial and malignant conditions. Principles of drug administration and pharmacokinetics are also presented.
3.00 credit hours. Lecture. BIO.152, CHE.232 or BIO.360 (Required, Previous).

PSB.320
Introduction to Healthcare Delivery
Introduces the complex areas of health care delivery from public policy perspectives. Lecture and classroom discussions provide interdisciplinary approaches to difficult political, social and economic issues that confront health care practitioners and the public.
3.00 credit hours. Lecture.

PSB.322
Pharmacy Law I and Healthcare Delivery
The course introduces health care delivery from pharmacy perspectives and introduces state and federal regulations that govern the practice of pharmacy. Topics include but are not limited to the US healthcare system, drug development, public health, healthcare economics, health insurance, FDCA, Controlled Substances Act; the OBRA'90; as well as specific state laws, regulations and policies affecting the practice of pharmacy.
3.00 credit hours. Lecture.

PSB.326
Principles of Anatomy and Physiology I
Students learn the anatomical structure and physiological functioning of the human body through a regional exploration of tissues, their corresponding cellular make up, and organ systems. This is the first course of a two-course sequence that includes foundational level information, which is necessary for further understanding of subsequent material on organ activity in the maintenance of normal body functions.
3.00 credit hours. Lecture. BIO.151, BIO.152, CHE.232 (Required, Previous).

PSB.327
Principles of Anatomy and Physiology II
Students learn the anatomical structure and physiological processes of the cardiovascular, immune, urinary, reproductive, endocrine, and respiratory systems. This is the second course of a two-course sequence that includes

foundation level material) which is necessary for further understanding of subsequent material on organ function, normal and diseased. Students will analyze and appraise the human body maintenance of normal functions
3.00 credit hours. Lecture. PSB.326 (Required, Previous).

PSB.328
Physiology/Pathophysiology I
This comprehensive course deals with the principles of mammalian physiology and a basic understanding of human anatomy. It emphasizes the maintenance of normal functions and various abnormalities or stresses within the systems.
4.00 credit hours. Lecture. BIO.151 or BIO.110, BIO.152 or BIO.210 (Required, Previous); CHE.232 or CHE.110 (Required, Previous or Concurrent).

PSB.329
Physiology/Pathophysiology II
This is a continuation of the principles of mammalian physiology, human anatomy, and elements of pathology presented in PSB.328. It includes discussions of the following systems: cardiovascular, respiratory, gastrointestinal, renal, metabolic, and reproductive.
4.00 credit hours. Lecture. PSB.328 (Required, Previous).

PSB.331
Biochemistry I
The physical-chemical properties of the major classes of biomolecules are studied with particular emphasis on the relationship between these properties and the structure and function of biomolecules.
3.00 credit hours. Lecture. CHE.232, BIO.152 (Required, Previous).

PSB.332
Biochemistry II
The metabolic processes of the expression of genetic material, energy production and storage, and synthesis of biomolecules are studied. Proper nutrition is examined utilizing the processes that integrate and regulate metabolism.
3.00 credit hours. Lecture. PSB.331 (Required, Previous).

PSB.335
Pharmaceutical Technology
Describes the different stages of drug formulation and explores different pharmaceutical excipients, preformulation testing, and different pharmaceutical unit operations, with an emphasis on quality assurance and GMP. The course provides an overview of animal testing and manufacturing scale-up. Applications of theories are emphasized through group projects, research, and active participation in discussions.
3.00 credit hours. Lecture. PSB.340 (Required, Previous).

PSB.337
Medical Biochemistry I
The physical-chemical properties of the major classes of biomolecules are studied with particular emphasis on the relationship between these properties and the structure and function of biomolecules with particular focus to pharmacy students.
3.00 credit hours. Lecture. CHE.232, BIO.152 (Required, Previous).

PSB.338
Medical Biochemistry II
The metabolic processes of the expression of genetic material, energy production and storage, and synthesis of biomolecules are studied. Examples from clinical biochemistry will be presented to illustrate the effects of metabolic malfunction and to understand how altered cell biochemistry is the basis for pathophysiologic conditions.
3.00 credit hours. Lecture. PSB.337 (Required, Previous).

PSB.339
Essentials of Medical Biochemistry
Students will learn the foundational aspects of biochemistry, primary metabolism and energy pathways, cell and molecular biology, biotechnology, and protein formulation and stability in a clinical context.
3.00 credit hours. Lecture. BIO.152, CHE.232 (Required, Previous).

PSB.340
Pharmaceutics I
A study of the mathematical, physico-chemical, and biological principles concerned with the formulation, preparation, manufacture, and effectiveness of pharmaceutical dosage forms.

4.00 credit hours. Lecture. CHE.232, PHY.270, MAT.152 or MAT.172 (Required, Previous).

PSB.341
Pharmaceutics II
This course is a continuation of Pharmaceutics I, PSB 340.
3.00 credit hours. Lecture. PSB.340 (Required, Previous).

PSB.346
Physico-Chemical Properties of Drug Molecules
This course reviews the basic physico-chemical principles as applied to small-molecule drug development, the pharmacological activities of such drugs, and their mechanisms of action in various disease states. Focuses on an understanding of organic functional groups and absorption, metabolism, distribution, and excretion of drugs. Drug-receptor interactions will be explored using selected examples.
3.00 credit hours. Lecture. PSB.332 (Required, Previous).

PSB.349
Dosage Forms and Drug Delivery Systems
Students will learn of the physical, chemical and biological principles involved in formulation, preparation and effectiveness of pharmaceutical dosage forms and delivery systems. Students will be introduced to general considerations in the design of dosage forms including liquid, semi-solid, solid and sterile including solid modified-release and novel drug delivery systems.
3.00 credit hours. Lecture. CHE.232 (Required, Previous).

PSB.350L
Industrial Pharmacy Lab
Students develop pharmaceutical-industry hands-on skills, including optimizing formula and formulation processes, testing the quality of final dosage forms, and communicating the experimental results using proper scientific terminology
1.00 credit hours. Laboratory. PSB.341 (Required, Previous).

PSB.353
Pharmaceutical Calculations I
Students will perform calculations pertinent to pharmacists in traditional and specialized practice settings including research. Calculations will include: interpretation Latin terms, differentiating between prescription components, distinguishing measurements systems and conversions from one to another and calculating dose regimens based on age, body weight or surface area.
2.00 credit hours. Lecture. CHE.232 (Required, Previous); PSB.349 (Required, Concurrent).

PSB.354
Pharmaceutical Calculations II
Students will learn the calculations performed by pharmacists in traditional as well as in specialized practice settings and within operational and research areas in industry, academia and government. Pharmaceutical Calculations II is a continuation of Pharmaceutical Calculations I.
2.00 credit hours. Lecture. PSB.353 (Required, Previous).

PSB.359L
Pharmaceutical Dosage Forms Lab
The students will learn fundamental concepts related to non-sterile compounding including extemporaneous compounding for pediatric, geriatric or patients with special disease conditions. Students will acquire knowledge of active pharmaceutical ingredients and pharmaceutical functions of excipients used in each formulation. Students will also learn about container suitability, product stability, beyond use date, dosage form uniformity, and maintaining quality control records.
1.00 credit hours. Laboratory. PSB.353, PSB.349 (Required, Previous); PSB.354 (Required, Concurrent).

PSB.363
Foundations of Drug Actions
The students will be introduced to the sciences of pharmacology and medicinal chemistry. Students will learn how various functional groups change drug affinity and how physio-chemical properties of a drug molecule affect its actions. The effects of ligands on cell signaling will be examined as well as a study of dose-response curves.
1.00 credit hours. Lecture. PSB.328, PSB.337 (Required, Previous).

PSB.370
Analytical Methods in Pharmacology and Toxicology I

In this laboratory-based course, students will be introduced to and given the opportunity to perform standard molecular, biochemical, and analytical techniques used in drug discovery and developmental research.
2.00 credit hours. Lecture. BIO.255, CHE.232 (Required, Previous)

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PSB.371
Analytical Methods in Pharmacology and Toxicology II
This course is a continuation of PSB.370 focusing on students' performance of standard molecular biology and animal-handling techniques commonly used in drug discovery and developmental research.
2.00 credit hours. Lecture. PSB.370 (Required, Previous).

PSB.375
Fundamentals of Drug Development
The student will become familiar with physical, chemical, and biological principles underlying the discovery of drug molecules and the design, manufacture, and testing of pharmaceutical products.
4.00 credit hours. Lecture. BIO.210 or BIO.152, CHE.132 or CHE.210 or PSB.340 (Required, Previous).

PSB.376
Pharmaceutical Marketing
Students will be introduced to commercial and pharmaceutical marking as a functional area of the business enterprise. Students will explore analytical and managerial problem-solving in market research, market planning, and distribution. They will learn to apply the four P's of marketing.
3.00 credit hours. Lecture.

PSB.377
Management Principles
Students will be introduced to the principles and practices of management in a variety of healthcare settings, including hospitals, outpatient settings, integrated systems and managed care organizations. Also, students will focus on the current strategic and operational management techniques used by professionals in the provision of healthcare services. Student learning will be facilitated through lectures, case studies and contemporary articles.
3.00 credit hours. Lecture.

PSB.380
Data Analysis
This course covers statistical techniques in a business setting featuring case studies and conceptual exercises. Statistical topics include effective use of numerical and graphical summaries, estimation, hypotheses testing, confidence intervals and regression. The course will integrate the use of Excel and PowerPoint in the homework problems, student presentations and exams. Professional literature and computer software are integrated into the course.
3.00 credit hours. Lecture. MAT.261 (Required, Previous).

PSB.401
Pharmacology Toxicology Seminar I
In this seminar-based course, students will be introduced to the reading, evaluation, analysis, interpretation, and presentation of scientific literature as it relates to pharmacology and toxicology.
1.00 credit hours. Lecture. BIO.260 (Required, Previous).

PSB.402
Pharmacology/Toxicology Seminar II
A continuation of PSB 401 in which students will read, evaluate, analyze, interpret and present scientific literature as it relates to Pharmacology and Toxicology. This course is intended to be taken concurrently with Analytical Methods of Pharmacology and Toxicology I (PSB370) to integrate conceptual knowledge with practical experience.
1.00 credit hours. Lecture. PSB.401 (Required, Previous); PSB.370 (Required, Previous or Concurrent).

PSB.403
Pharmacology/Toxicology Seminar III
This course is a continuation of PSB 402 in which students will read, evaluate, analyze, interpret, and present scientific literature as it relates to pharmacology and toxicology. This course is intended to be taken concurrently with Analytical Methods of Pharmacology and Toxicology II (PSB 371) to integrate conceptual knowledge with practical experience.
1.00 credit hours. Lecture. PSB.370, PSB.402 (Required, Previous); PSB.371 (Required, Previous or Concurrent).

PSB.404
Pharmacology/Toxicology Seminar IV

A continuation of PSB 403 in which students will read, evaluate, analyze, interpret and present scientific literature as it relates to Pharmacology and Toxicology.
1.00 credit hours. Lecture. PSB.403 (Required, Previous).

PSB.410
FDA and Regulatory Affairs
This course introduces the regulatory, legal, and strategic aspects of pharmaceutical regulation and law through readings, lectures, and discussion. It explores the U.S. Food and Drug Administration and its authority over the Federal Food, Drug, and Cosmetic Act. Topics include prescription drugs, over-the-counter drugs, biologic, device, and cosmetics approval and regulation.
3.00 credit hours. Lecture. PSB.320 or PSB.420 (Required, Previous).

PSB.411
Pharmacy Law
This course examines state and federal legal requirements associated with pharmacy practice and operations including regulation of pharmacy personnel, pharmacies, pharmacy departments, controlled substances, dispensing functions, and prospective drug review and counseling.
3.00 credit hours. Lecture. PPB.325, PPB.335 (Required, Previous).

PSB.412
Medical Patients Rights and Professionals Liabilities
This course facilitates identification and analysis of medical patients' legal rights from the beginning to the end of life, and health care providers' corresponding legal responsibilities.
3.00 credit hours. Lecture.

PSB.415
Financial Accounting
This course introduces the principles and practices of modern accounting. Lectures and classroom discussion provide a basic understanding of how business transactions are recognized and how this information is used in making business decisions. Accounting rules, measures, formulas, ratios, and techniques are covered in this overview course.
3.00 credit hours. Lecture.

PSB.416
Managerial Accounting
With financial accounting as a foundation, the student will become familiar with the accounting principles, concepts, and techniques that are used by healthcare providers to guide them in decision making. In this context, the student will focus on topics such as cost-revenue relationships, cost systems, and the preparation and analysis of budgets.
3.00 credit hours. Lecture.

PSB.418
Pharmacoeconomics
This course introduces students to economics in healthcare delivery with an emphasis on the selection of drug therapy and formulary management. Covers various pharmacoeconomic quantitative methods, including decision analysis and quality-of-life assessment.
3.00 credit hours. Lecture. MAT.261, PSB.210 or SSC.210 (Required, Previous).

PSB.420
Pharmaceutical Analysis
This course introduces the hypothesis and practice of drug analysis. It covers the preparation of drug samples for analysis, developing and validating different analytical methods and detection and analysis of drug metabolites and degradation products. Lab experiments are planned to help students apply the techniques learned in class and build their hands-on skills.
3.00 credit hours. Lecture. CHE.232 (Required, Previous).

PSB.420L
Pharmaceutical Analysis Lab
Introduces the hypothesis and practice of drug analysis. Covers the preparation of drug samples for analysis, developing and validating different analytical methods. Covers detection and analysis of drug metabolites and degradation products. Lab experiments are planned to help students apply the techniques learned in class and build their hands-on skills.
0.00 credit hours. Laboratory. CHE.232 (Required, Previous); PSB.420 (Required, Previous or Concurrent).

PSB.421
Pharmacoepidemiology
Pharmacoepidemiology is introduced through concepts and methods used to measure the source, diffusion, and use of drugs in populations. Emphasis is placed on determining pharmaceutical care outcomes and identifying potential or real drug-use problems.
2.00 credit hours. Lecture.

PSB.422
Pharmacy Law II
The course introduces state and federal regulations that govern the practice of pharmacy from an institutional perspective. Topics include but are not limited to the USP 795, 797 & 800, controlled substance diversion, inventory management, drug shortages and recalls, HIPAA, compounding vs manufacturing, prescription screening, and CQI.
1.00 credit hours. Lecture. PSB.322 (Required, Previous).

PSB.424
Research Methods in Pharmacoepidemiology
Pharmacoepidemiology is introduced through concepts and methods developed in epidemiology to measure the source, diffusion, and use of drugs in populations. Emphasis is placed on determining pharmaceutical care outcomes and identifying potential or real drug-use problems.
2.00 credit hours. Lecture. PPB.325, PSB.328, PSB.337, PSB.349 (Required, Previous).

PSB.429
Operations Management
The student will become familiar with the role that operations management plays in the efficient delivery of goods and services both in the domestic and global environments. Also, the student will learn how to use comprehensive approaches to address operational and supply chain issues. These approaches will include tools and methods that include Six Sigma, EOQ, and Value Stream Mapping.
3.00 credit hours. Lecture.

PSB.430
Pharmacokinetics
This course is a study of absorption, distribution, metabolism, and elimination (ADME) processes using mathematical models. Emphasis is placed upon determination of pharmacokinetic parameters from blood/urine data following administration of single or multiple doses of drugs by various routes. Additionally, the course includes topics on the influence of physiological, physiochemical and formulation factors on the bioavailability of drugs.
3.00 credit hours. Lecture. PSB.340 (Required, Previous).

PSB.434
Managed Healthcare: Administration Management
The student will become familiar with the evolution of managed health care and the forces that have driven this phenomenon. In addition, the student will focus on the various types of managed care organizations and the issues (public policy and market performance) that continue to shape this delivery of health care.
3.00 credit hours. Lecture. PSB.320 or permission of instructor (Required, Previous).

PSB.440
Molecular Biotechnology
This course reviews molecular and cellular biology and emphasizes the application of recombinant DNA technology to present day biotechnology. The course reviews both theoretical and practical aspects of recombinant protein expression, vaccine design and gene therapy.
3.00 credit hours. Lecture. PSB.332, BIO.260 or BIO.332 (Required, Previous).

PSB.441
Medicinal Chemistry I
The student studies the effect of drug chemical functional groups on its physiochemical properties, biological activity, and kinetics. Autonomic nervous system, cardiovascular and anti-inflammatory drugs are considered in detail. Integrated with PSB 451.
3.00 credit hours. Lecture. PSB.338 (Required, Previous); PSB.451 (Required, Previous or Concurrent).

PSB.442
Medicinal Chemistry II

The course is a continuation of PSB 441. The student studies topics of drugs acting on the central nervous system, endocrine hormones and selected drug classes that act peripherally, including anticancer, H-1 antagonists, peptic ulcer and local anesthetics. Integrated with PSB 454.
3.00 credit hours. Lecture. PSB.441 (Required, Previous); PSB.454 (Required, Previous or Concurrent).

PSB.444
Organizational Development
A thorough review of organizational development and improvement practices is the basis for this course, including the roles and values of such corporate attributes as training and resource development, culture, planning and strategy implementation. The focus of lectures and materials is on the identification of organizational strengths and weaknesses as well as their remedy.
3.00 credit hours. Lecture.

PSB.445
Sales of Pharmaceuticals and Medical Products
This course explores sales and selling strategies for medical products in a regulated environment, including selling/negotiation techniques and sales agreements, emphasizing the special concerns of FDA regarding promotional material, advertisement, and sales collateral in a regulated environment, including off-label uses.
3.00 credit hours. Lecture. MAT.261, PSB.210 (Required, Previous).

PSB.446
Healthcare Finance
A thorough understanding of the principles and concepts of finance as they apply to the health care industry is provided. The course utilizes financial tools and strategies to understand the business of the health care environment.
3.00 credit hours. Lecture.

PSB.447
Fundamentals of Business Law
Introduces students to the study of law as it relates to business organizations. Explores all aspects of the court system and judicial process, including torts, contracts, employment, etc. Emphasis on relationship between the law and ethics.
3.00 credit hours. Lecture.

PSB.450
Pharmaceutical Biotechnology
Students learn the fundamental principles and concepts in recombinant DNA technology and its application to pharmaceuticals. Students apply these principles to the design and use of therapeutic proteins, vaccines, and nucleic acids, including small interfering RNA (siRNA), antisense molecules, and gene therapy in various disease states. Students learn about federal regulatory issues relating to these biotechnological products.
3.00 credit hours. Lecture. PSB.332 or PSB.338 (Required, Previous); PSB.441, PSB.451 (Required, Concurrent).

PSB.451
Pharmacology I
The student is introduced to the science of pharmacology, with emphasis on the basic principles of pharmacology, factors modifying drug responses and dose-response relationships. The mechanisms of action, effects, uses, contraindications and interactions of drugs affecting the autonomic nervous system, cardiovascular and renal systems will be examined including eicosanoids. Integrated with PSB.441.
4.00 credit hours. Lecture. PSB.329 (Required, Previous); PSB.441 (Required, Concurrent).

PSB.452
Pharmacokinetics
This course will provide an overview of absorption, distribution, metabolism, and elimination (ADME) processes using mathematical models. Emphasis is placed upon determination of pharmacokinetic parameters from blood/urine data following administration of single or multiple doses of drug by various routes. Additionally, the course includes topics on the influence of physiological, physicochemical and formulation factors on the bioavailability of drugs.
3.00 credit hours. Lecture. PSB.340 (Required, Previous).

PSB.454
Pharmacology II
This course is a continuation of PSB.451. The student studies the mechanisms of action, effects, uses, contraindications and interactions of drugs affecting the central nervous system, immune, endocrine and gastrointestinal systems. In addition, cancer chemotherapy will be presented. Integrated with PSB.442.
4.00 credit hours. Lecture. PSB.451 (Required, Previous); PSB.442 (Required, Previous or Concurrent).

PSB.456
Entrepreneurship
This course introduces students to the process of developing, financing, growing and exiting a business venture. The course includes how to protect intellectual capital, how to raise capital, both in the private and public markets, how to value a company for a sale or merger. The role of venture capitalists, investment bankers and angels as a source of capital is discussed.
3.00 credit hours. Lecture.

PSB.457
Pharmacognosy
The student will understand and discuss natural products from plants and their manufacture, assay, and use in humans. The themes to be emphasized include the procedures of chemical characterization (extraction, isolation, and analysis of plant constituents) and the pharmacological methods to study the medicinal properties of plants (pharmacodynamics and pharmacokinetics of plant constituents).
3.00 credit hours. Lecture. PSB.442, PSB.454 (Required, Previous).

PSB.458
Pharmaceutics Seminar
Students develop abilities to search, evaluate literature and deliver presentations. Includes presentations from visiting scientists from local pharmaceutical and biotechnology companies on the latest developments in the pharmaceutical field.
1.00 credit hours. Lecture. PSB.335 (Required, Previous or Concurrent).

PSB.460
Principles of Toxicology I
This lecture-based course is designed to introduce the student to the discipline of toxicology with an emphasis on its application to basic science research. The principles of toxicology, including non-organ-targeted and organ system-targeted toxicity, will be discussed, as well as the mechanisms of toxicity; toxicokinetics; chemical carcinogenesis; and genetic, liver, and kidney toxicity.
3.00 credit hours. Lecture. PSB.327 and PSB.332 or BIO.152 and BIO.360 (Required, Previous).

PSB.461
Principles of Toxicology II
This course is a continuation of PSB 460 and will present topics such as cardiovascular, hematological and respiratory toxicology. Additionally, other areas of toxicology will be presented and discussed as well as direct applications in the field of toxicological research.
3.00 credit hours. Lecture. PSB.460 (Required, Previous).

PSB.462
Basic Pharmacology I
This lecture course is designed to introduce the student to the science of pharmacology, with emphasis on its application to basic science research. Principles of pharmacology, including pharmacokinetic and pharmacodynamic relationships, will be discussed, as well as the effects of drugs on the autonomic nervous system, cardiovascular system, renal system, and eicosanoids.
3.00 credit hours. Lecture. PSB.327 (Required, Previous).

PSB.463
Drug Action I
The students will be introduced to the basis of a drug's action based on its pharmacophore and binding target. The mechanisms of action, effects, uses, contraindications and interactions of drugs used in the treatment of cardiovascular and renal diseases will be examined. Students will gain an understanding of how structural changes affect drug properties.
4.00 credit hours. Lecture. PSB.363 (Required, Previous).

PSB.464
Basic Pharmacology II
A continuation of Basic Pharmacology I (PSB 462) presenting effects of drugs on the central nervous system, respiratory and endrocrine systems. Additionally, antibiotics, antivirals, antifungals as well as cancer chemotherapy and antiasthmatics will be presented.
3.00 credit hours. Lecture. PSB.462 (Required, Previous).

PSB.465
Drug Action II
Students will be introduced to the basis of a drug's action based on its pharmacophore and binding target. The mechanisms of action, effects, uses, contraindications and interactions of drugs used in the treatment of pain and respiratory, endocrine, gastrointestinal and neurological diseases will be examined. Students will gain an understanding of how structural changes affect drug properties.
4.00 credit hours. Lecture. PSB.463 (Required, Previous).

PSB.522
Pharmacy Law III
The course examines the state and federal legal requirements associated with pharmacy practice and operations including regulation of pharmacy personnel, pharmacies, pharmacy departments, controlled substances, dispensing functions, and prospective drug review counseling.
1.00 credit hours. Lecture. PSB.422 (Required, Previous).

PSB.530
Undergraduate Research Project
Research participation is provided at the undergraduate level for superior students, with emphasis on the methods and techniques of research. Offered at the discretion of the division.
1.00 - 3.00 credit hours. Lecture.

PSB.532
Directed Study
Provides faculty-directed study to an individual student wishing to examine a particular topic in pharmacology in greater detail. Emphasis is placed on the student's analysis of the scientific literature. Faculty-assisted instruction in all areas of pharmacology is available.
1.00 - 3.00 credit hours. Lecture.

PSB.535
Senior Research Project/Internship
Research participation is provided at the undergraduate level for superior students, with emphasis on the methods and techniques of research.
5.00 credit hours. Laboratory.

PSB.540
Principles of Clinical Research
Students will examine the principles and practices necessary for the ethical conduct of human clinical research. Regulations, methodology, procedures, documentation, and reporting essential for compliance with good clinical practice (GCP) guidelines will be discussed. Students will apply these principles to a project and classroom exercises. Roles of multidisciplinary healthcare professionals and opportunities in the clinical setting and biopharmaceutical industry will be identified.
3.00 credit hours. Lecture. PSB.454 (Required, Previous).

PSB.541
Principles of Pharmacoeconomics and Research Outcomes
This course provides an overview of pharmacoeconomics (PE) and outcomes research (OR) concepts and methodologies and aims to provide future practitioners with the knowledge and skills needed to understand and utilize information from PE and OR studies in the decision making process.
3.00 credit hours. Lecture.

PSB.542
Fundamentals of the BioPharmaceutical Industry
Students develop an understanding of the Pharmaceutical Industry to enable them to contrast the impact of various positions which support the Drug Development Pathway. Students will be provided with a realistic overview of industry operations through experts including pharmacists, healthcare executives and scientists who will highlight the diversity of potential roles.
3.00 credit hours. Lecture. PSB.337 or PSB.375 (Required, Previous).

PSB.550F
ST: Professional Development Seminar

Special Topics course. In this course students will develop skills for workplace success by addressing topics students need to know when transitioning from campus to the workplace using case examples, activities, exercises, and online videos. Topics will include self-management skills, workplace basics, relationships and career planning tools.
3.00 credit hours. Lecture.

PSB.550G
ST: Introduction to Project Management
Special Topics course. This course is designed for students who may focus their careers in project management, and learn formal project management tools and techniques. The focus will be on learning and experiencing how to connect a project to an organization's mission and goals. There will be a focus on how to plan, schedule and budget projects and manage a temporary team.
3.00 credit hours. Lecture.

PSB.560
PHCB Internship
Students will have the opportunity to do an unpaid internship in the health care industry which will expose them to real world business situations in their area of study. Students will apply knowledge and techniques learned in the classroom to areas such as Marketing, Accounting, Finance, Operations and General Business in a hands on environment.
3.00 credit hours. Lecture.

PSB.563
Drug Action III
The students will be introduced to the basis of a drug's action based on its pharmacophore and binding target. The mechanisms of action, effects, uses, contraindications and interactions of drugs used in the treatment of psychiatric, inflammatory, autoimmune diseases and cancer will be examined. Students will gain an understanding of how structural changes affect drug properties.
3.00 credit hours. Lecture. PSB.465 (Required, Previous).

PSB.710
Principles of Pharmaceutical Science
Students will learn and receive an overview of the fundamental principles and concepts in pharmaceutical sciences and their applications in the areas of pharmacology, medicinal chemistry, and pharmaceutics.
3.00 credit hours. Lecture.

PSB.712
Systems Pharmacology I
This course examines the physiology of the cardiovascular, renal, respiratory and immune systems, the pathophysiological basis of diseases affecting these systems and the drugs used to treat these conditions. The focus will be on understanding how the pathophysiology translates into identifying drug targets and how a drug's mechanisms of action address the pathophysiology.
3.00 credit hours. Lecture.

PSB.713
Systems Pharmacology II
This course examines the physiology of the central nervous, endocrine, reproductive and gastrointestinal systems, the pathophysiological basis of diseases affecting these systems and the drugs used to treat these conditions. The focus will be on understanding how the pathophysiology translates into identifying drug targets and how a drug's mechanisms of action addresses the pathophysiology.
3.00 credit hours. Lecture.

PSB.715
Clinical Toxicology
Students will learn the foundations of clinical toxicology with a particular emphasis on common poisons/overdoses and their corresponding antidotes/treatments. Students will apply knowledge by analyzing and solving case studies in an online discussion board.
3.00 credit hours. Lecture. BIO.210, PSB.338, PSB.328, and PSB.329 or permission of instructor, CHE.232, BIO.360 (Required, Previous).

PSB.718
Drug Discovery and Development

This course will explore the steps involved in identifying and developing a novel therapeutic agent. Various processes that identify lead compounds and the optimization of lead compounds into potential therapeutic agents through preclinical studies will be examined.
3.00 credit hours. Lecture.

PSB.732
Graduate Directed Study
Supervised faculty-directed study to an individual student involving a survey of existing knowledge, self-instructed, or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study. Emphasis is placed on the student's analysis of the scientific literature.
3.00 credit hours. Lecture.

PSB.750
ST: Pharmaceutical Particulate Science
Special Topics course. Students will learn fundamental principles and concepts in pharmaceutical particulate science and its applications in the areas of solid dosage forms and pharmaceutical powder aerosol delivery systems.
3.00 credit hours. Lecture. PSB.341 or permission of instructor (Required, Previous).

PSB.755
Cosmetic and Personal Care Products
Students will learn the fundamental knowledge, to the development and commercialization of novel personal care products including advances in raw materials, cosmetic actives, formulations and characterization, clinical assessment and compendium standards in hair, skin, color cosmetics, dental hygiene, and contact lens cleansers. They will also acquire some laboratory skills related to this science.
3.00 credit hours. Lecture. PSB.341, PSB.359L, PSB.710 (Required, Previous).

PSB.760
Fundamentals of Pharmaceuticals
This course examines the fundamentals of where drugs come from and how they can interact with various systems of the human body. Emphasis on the more commonly utilized drugs, such as: opioids, amphetamines, NSAIDS, birth control, etc., will be discussed.
3.00 credit hours. Lecture.

PSB.761
Active Pharmaceutical Ingredients for Regulatory Science
This course analyzes the structural elements of active pharmaceutical agents to understand their mechanisms of action in various disease states. How the active pharmaceutical agent interacts with its receptor, in addition to understanding absorption, metabolism, distribution and excretion of drugs will be discussed.
3.00 credit hours. Lecture.

PSB.762
Generic Drug and Biosimilar Development
This course examines the basic scientific and regulatory concepts of generic drug and biosimilar product development and approval. Emphasis is placed on FDA-approval of generic drug (small molecule) and biological products (large molecule), including reference, generic and biosimilar products
3.00 credit hours. Lecture.

PSB.763
CMC: Chemistry, Manufacturing, and Control
The students will learn to examine advanced, specific areas and practical aspects of CMC with special emphasis on in depth analysis of emerging issues in manufacturing regulations, various strategies for specifications settings, CMC regulatory filing, and GMP. Subjects include ICH Quality guidelines, pharmaceutical development, analytical development, and Pharmaceutical Specifications development. Key topics will be presented during each session.
3.00 credit hours. Lecture.

PSB.764
Clinical Research Protocol Design and Research Methods
This course covers principles necessary for developing and designing clinical research protocols and proposals. Topics include clinical trial design, Phase I, II and III clinical research studies, literature searches, meta-analysis, tissue banking, surveys, medical device studies, quality of life studies, registries, investigator brochure and grant applications. Students will review research methodology and will present examples of research protocols for discussion.
3.00 credit hours. Lecture.

PSB.765
Clinical Research Coordination
This course reviews GCP principles with an explanation and analysis of selected portions of regulations, applicable to clinical research during the new drug approval process. Students will learn the requirements for the successful conduct of clinical research through a case study approach. Each session will expand on the application of regulations, IRB requirements and role of the sponsor and investigator.
3.00 credit hours. Lecture.

PSB.766
GLP, GCP, GMP
This course reviews the good practices required for quality, safety, and efficacy of medicinal products that are set by regulatory agencies (U.S. FDA and International) for pharmaceutical manufacturing, non-clinical laboratory and clinical studies. Students will learn the real-world challenges through case studies. Topics covered include methods, facilities and controls for manufacture, processing, packaging, and conducting non-clinical and clinical research studies.
3.00 credit hours. Lecture.

PSB.773
Pharmacovigilance
A study of principles governing the pharmacovigilance processes. Concepts covered include regulations, terminology, safety functions, case processing, safety documents, signal detection, signal analysis and risk management applicable to pharmacovigilance.
3.00 credit hours. Lecture.

PSB.801
Research Internship
9.00 - 12.00 credit hours. Lecture.

PSB.802
Chemistry of Macromolecules
This course covers the structure, stability, properties, isolation, purification, identification, and synthesis of proteins. Bases of theoretical and experimental approaches to conducting protein-binding studies are considered in detail.
3.00 credit hours. Lecture.

PSB.807
Unit Operations
This course imparts a firm understanding of various industrial operations used in the manufacturing of pharmaceutical dosage forms in order to lay a foundation for other courses dealing with the specific aspects of dosage form development and manufacture.
3.00 credit hours. Lecture.

PSB.808
Advanced Physical Pharmacy I
This course provides analysis of the theory of physical chemical properties, such as solubility, diffusion, dissolution, interfacial phenomena, and rheology, and their application in the development of dosage forms.
3.00 credit hours. Lecture.

PSB.815
Drug Metabolism
The metabolism of drugs and other foreign compounds is considered. Emphasis is placed on those substances that are of therapeutic importance. Phase I and Phase II metabolism, hepatic and intestinal drug metabolism, pharmacogenetics variability, active metabolites and toxicity, drug-drug and herbal-drug interactions, in vitro systems, in-vivo methods, and inducers of CYP450 isozymes are all considered in depth.
3.00 credit hours. Lecture.

PSB.818G
Laboratory Rotations
Provides new graduate students opportunities to gain preliminary hands-on experience in laboratory techniques and to identify an area of research of potential interest.
1.00 credit hours. Laboratory.

PSB.818L

Laboratory Rotations
Provides new graduate students opportunities to gain preliminary hands-on experience in laboratory techniques and to identify an area of research of potential interest.
0.00 credit hours. Laboratory.

PSB.819
Graduate Seminar
This seminar is required for all graduate students in the pharmaceutical sciences and offered each semester.
0.00 credit hours. Lecture.

PSB.819G
Graduate Seminar
This seminar is required for all graduate students in the pharmaceutical sciences and offered each semester.
1.00 credit hours. Lecture.

PSB.820
Advanced Medicinal Chemistry I
The rational utilization of drug structure-activity relationships in the design of new drugs is considered. Specific topics include enzyme inhibition as a tool to develop new therapeutic agents and the AIDS virus as a potential target for drug design.
3.00 credit hours. Lecture.

PSB.821
Advanced Medicinal Chemistry II
This course is designed to enhance graduate students foundational and advanced knowledge in Medicinal Chemistry towards various approaches of drug design. Special emphasis will be given to computer aided drug design.
3.00 credit hours. Lecture. PSB.820 (Required, Previous).

PSB.822
Advanced Medicinal Chemistry III
Medicinal Chemistry graduate students (in the PhD program) will apply fundamental principles to the understanding and design of emerging and future drugs. Drug development of agents to treat viral infections such as HIV and HBV, and Diabetes Mellitus will be given special emphasis.
3.00 credit hours. Lecture. PSB.820 (Required, Previous).

PSB.825
Controlled Drug Delivery
This course is a study of the principles involved in the formulation of various controlled-release drug dosage forms and mechanisms responsible for drug release. The emphasis is placed on the oral, opathalmic, nasal, pulmonary, transdermal, vaginal, wound care and drug device combination.
3.00 credit hours. Lecture.

PSB.826
Novel Drug Delivery Systems
The study of the principles involved in the formulation of various controlled-release drug dosage forms and mechanisms of drug release from such dosage forms. The emphasis is placed on transdermal and peptide/protein drug delivery systems.
3.00 credit hours. Lecture.

PSB.835
Advanced Pharmacokinetics
This course is an advanced study of pharmacokinetic principles pertaining to ADME processes as they apply to mammillary and other complex pharmacokinetic models. It emphasizes the utility of multicompartment concepts in the analysis of blood/urine data following the administration of the drug by intra- and extravascular routes.
3.00 credit hours. Lecture.

PSB.841
Advanced Pharmacology: Receptor Pharmacology
The pharmacological response is examined as the interactions between the physico-chemical properties of a drug and the body tissues. Explores the interactions of drugs with whole tissues and individual receptors. Emphasis is placed on the analysis of ligand-binding data.
3.00 credit hours. Lecture.

PSB.843
Advanced Pharmacology: Neuropharmacology
This course is designed to present basic and applied neuropharmacology in a functional context, emphasizing the biochemistry of selected neurotransmitters. Their roles in various diseases will be discussed as well as animal models and tests used to study these diseases.
3.00 credit hours. Lecture. PSB.713 (Required, Previous).

PSB.845
Advanced Pharmacology: Anti-Cancer Drugs
Students will evaluate the pharmacology of conventional and novel targeted antineoplastic agents. The focus of learning is on the use of in-vitro and in-vivo models in anti-neoplastic drug discovery and in understanding the underlying mechanisms of cytotoxicity and resistance through journal club discussions, assigned readings and peer presentations.
3.00 credit hours. Lecture.

PSB.847
Graduate Biochemistry
A course designed to present basic and advanced topics in molecular biology and biochemistry.
3.00 credit hours. Lecture.

PSB.851
Bio-organic Chemistry
This course reviews the organic chemistry of biological catalysts including the essentials of enzymatic reactions. Emphasizes enzyme and coenzyme structure and functions, mechanisms of action and modes of inhibition.
2.00 credit hours. Lecture.

PSB.855
Care and Use of Laboratory Animals
Provides information for the graduate student on the various animal welfare agencies and the proper care and use of laboratory animals involved in scientific experimentation.
1.00 credit hours. Lecture.

PSB.856B
Advanced Pharmacology: Neuropharmacolog y
A course designed to present basic and applied neuropharmacology in a functional context, emphasizing the anatomical and biochemical basis or treatment or neurological disorders.
3.00 credit hours. Lecture.

PSB.856D
ST: Technical and Scientific Writing
Special Topics course.
2.00 credit hours. Lecture.

PSB.856J
ST: GCP, GLP, GMP
Special Topics course. This course reviews the good practices required for quality, safety and efficacy of medicinal products that are set by regulatory agencies (U.S.FDA and international) for pharmaceutical manufacturing, non-clinical laboratory and clinical studies. Students will learn the real-world challenges through case studies. Topics covered include methods, facilities and controls for the manufacture, processing, packaging, and conducting nonclinical and clinical research studies.
3.00 credit hours. Lecture.

PSB.856P
ST:Synchronization,Purification, and Analysis of Biologic Drugs
Special Topics course. This course will explore the steps involved in the development of biologic and biotherapeutic products. Historical perspectives of biologics and an overview of the value chain of biologic drug development will be discussed. Students will gain an understanding of how the operational elements of biotechnology development and the interdependency of specialty skills are synchronized to maximize the probability of success..
3.00 credit hours. Lecture.

PSB.856Q

ST: Computer-Aided Drug Design and Development
Special Topics course. Students will gain a foundational understanding of computer-aided drug design and development, including artificial intelligence, machine learning, structural modeling, and molecular dynamics. Various stages of drug discovery and development will be discussed, focusing on applying computational techniques from early drug discovery to the drug formulation process. Students will learn about modern computational methods including hands-on project experience in these areas.
3.00 credit hours. Lecture.

PSB.856R
ST: Advanced Laboratory Techniques
Special Topics course. This will be the first in a two-course sequence that introduces advanced techniques in chemical synthesis and characterization applicable to organic, inorganic and organometallic compounds. Students will perform synthetic techniques including working under inert atmosphere and handling moisture-sensitive reagents. Developing methods that could be used for analysis of compounds on the HPLC and GC/MS will be taught. Students will perform characterization of compounds using NMR, IR, MS, HPLC, GC/MS and UV-VIS spectroscopy.
3.00 credit hours. Lecture. CHE.232, CHE.234L (Required, Previous); CHE.714, CHE.714L (Required, Concurrent).

PSB.860
Chromatography
This course discusses the practical application of chromatography with emphasis on liquid chromatography, reviewing the theory and basic principles of chromatography as a separation tool, and techniques of method development and validation.
2.00 credit hours. Lecture.

PSB.861
Chromatography Laboratory
This lab provides experience in the development and validation of the HPLC method for the analysis of pharmaceuticals by evaluating the effects of molecular structures and the selection of columns and mobile phases in the practical development of the HPLC method.
1.00 credit hours. Laboratory. PSB.860 (Required, Previous or Concurrent).

PSB.870
Practicum in Pharmaceutical, Regulatory, And Applied Sciences
Student participates in a practicum at an off-campus site in the student's major field of study. Student submits a proposal of the practicum's goals and objectives to the Program Director for approval prior to start of practicum. At practicum's conclusion, student and practicum site coordinator submit reports to the Program Director regarding the student's activities and performance.
1.00 - 3.00 credit hours. Research.

PSB.872
Special Problems in Pharmaceutical Science
A student may be permitted by the Graduate Dean to undertake a less extensive investigation than that of the PhD dissertation or to participate in a field study program at an off-campus site. This investigation / field study program is conducted in the areas of the student's major or minor field of study and is open to all doctoral graduate students having completed at least two years of doctoral study and two semesters of research credits. Students are expected to prepare a proposal including the nature of the fieldwork, the study objective, the field study site, the fieldwork supervisor, and other topics related to the student's major/minor field of study. The proposal is to be approved by the student's Graduate Advisory Committee several months prior to beginning the program. At the conclusion of the field study program, the student and field supervisor submit a report to the Graduate Advisory Committee and the Dean of Graduate Studies. A cumulative maximum of 2 semester hours may be applied toward the graduate degree. The amount of credit awarded for a special problem is subject to review by the Graduate Advisory Committee and the Dean of Graduate Studies. This course is not subject to tuition remission.
1.00 - 2.00 credit hours. Lecture.

PSB.880
Research
Four (4) semester hours required for the master's degree and 7 or 8 semester hours required for the doctorate, including 1 seminar hour. In no case shall more than 3 research credits be taken until after the proposal has been approved by the Graduate Advisory Committee and the Dean of Graduate Studies.
1.00 - 4.00 credit hours. Lecture.

PSB.885

Capstone Clinical Investigation and Development
The capstone project course is the culmination of the MS in Clinical Investigation and Development at MCPHS. Upon successful completion of the capstone, students will demonstrate mastery of the curriculum, core competencies in the clinical investigation and development field. Students will complete a comprehensive project selected at the beginning of the course.
3.00 credit hours. Lecture.

PSB.886
Capstone Regulatory Science
The capstone project course is the culmination of the MS in Regulatory Sciences at MCPHS. Upon successful completion of the capstone, students will demonstrate mastery of the curriculum, core competencies in the regulatory sciences field. Students will complete a comprehensive project selected at the beginning of the course.
3.00 credit hours. Lecture.

PSB.895
Graduate Study Extension
All degree students are expected to remain continuously enrolled each semester, excluding summer semesters, until all requirements for the degree have been completed. Students maintain continuing registration by indicating PSB 895 Graduate Study Extension on the registration form and paying a fee. This course is not subject to tuition remission.
0.00 credit hours. Lecture.

Pharmaceutical Sciences—Worcester/Manchester (PSW)

PSW.300
Pharmaceutical Biochemistry I
A study of the structure, physical/chemical properties, function, and interactions of molecules found in biological systems: amino acids, peptides, and proteins; nucleotides and nucleic acids; carbohydrates; lipids; and hybrid molecules.
2.00 credit hours. Lecture.

PSW.301
Pharmacetuical Biochemistry II
This second course in the Pharmaceutical Biochemistry series focuses on the metabolism of life's essential macromolecules including major reactions of proteins, lipids, carbohydrates, and nucleic acids in biological systems, and how energy is derived from or used to form these molecules. The course also provides an overview of molecular biology, focusing on processes involving DNA, RNA, and Protein.
2.00 credit hours. Lecture. PSW.300 (Required, Previous).

PSW.304
Introduction to Pharmaceutical Sciences
This course introduces first year students to fundamental principles that underlie all pharmaceutical science disciplines. The course introduces calculations, chemistry and pharmacology concepts that will prepare the student for medicinal chemistry, pharmaceutics and pharmacology courses in the PharmD curriculum.
1.00 credit hours. Lecture.

PSW.311
Pharmaceutics I Pharmacokinetics I
Introduction to drug delivery systems and the physical and chemical properties of drugs that can be applied to pharmacy practice.
3.00 credit hours. Lecture.

PSW.312
Pharmaceutical Calculations
Calculations required to determine the correct dosage of medication based on individual patient needs and characteristics as well as quantities of ingredients necessary to prepare extemporaneously compounded prescriptions are taught in this course.
2.00 credit hours. Lecture. PSW.311 (Required, Previous).

PSW.312L
Pharmaceutics II Lab
This course will provide students with the requisite skills in the preparation of non-sterile compounded products (including solutions, gels, ointments, suppositories, capsules, tablets, and troches), as well as sterile compounded preparations.

1.00 credit hours. Laboratory. PPW.330, PPW.340, PPW.360, PSW.300, PSW.311, PSW.350 (Required, Previous); PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous or Concurrent).

PSW.313
Pharmacokinetics/Biopharmaceutics
The students will be introduced to the principles of biopharmaceutics and pharmacokinetics, and how they affect dosage regimen design and therapeutic efficacy evaluations.The impact of the physical and chemical nature of drugs and dosage forms will be studied as they relate to the absorption, distribution, metabolism and elimination.
3.00 credit hours. Lecture. PSW.311 (Required, Previous).

PSW.325
Introduction to Human Physiology/Pathophysiology
This course is the first in a series focused on comparative study of organ system functions and their relationship to the etiology, pathogenesis, and clinical manifestation of human diseases. Students will learn pathophysiological fundamentals, cell communication and dysfunction, peripheral and central nervous system function and dysfunction, muscle and motor function and dysfunction, and immunological system function and dysfunction. - Also fix Prerequisites: Successful completion of all preceding required courses, Co-requisites: Concurrent enrollment in all required courses.
3.00 credit hours. Lecture. PPW.330 (Required, Previous).

PSW.335
Human Physiology/Pathophysiology I
This course is the second in a series focused on comparative study of organ system functions and their relationship to the etiology, pathogenesis, and clinical manifestation of human diseases. Students will learn reproductive, gastrointestinal, hepatobiliary, and renal systems function and dysfunction. Students will learn fluid and acid-base balance in the human body.
3.00 credit hours. Lecture. PPW 331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous); PPW.333, PPW.348 (Required, Previous or Concurrent).

PSW.348
Advanced Pharmaceutical Compounding Implementation, and Evaluation
This course teaches the student, many facets of the pharmaceutical compounding process, from initial assessment of the patient needs, through physical preparation of, and billing of the final product. In the laboratory students will use specific equipment to aid in the preparation of various dosage forms, and become proficient in the billing and required record keeping of these preparations.
2.00 credit hours. Lecture.

PSW.349
Health Program Planning, Implementation, And Evaluation
This course focuses on the program planning model utilized to develop, implement, and evaluate community health programs. Students will complete a needs assessment and design a health intervention intended to meet the needs of a specific community population. Students will learn about program evaluation and create an evaluation plan that could be used to assess the outcomes of the intervention.
2.00 credit hours. Lecture.

PSW.350
Service and Care in the Community
An introduction to the concepts and practice of service, care, and responsibility. Students perform community service and meet in seminars to discuss the work they are doing, thus combining and integrating service and learning.
1.00 credit hours. Lecture.

PSW.353
Drug Discovery and Translational Medicine
This course considers issues that impact drug discovery and translational medicine. Translational medicine is the laboratory and clinical research needed to advance a chemical or biological entity "from bench to bedside". Students are required to participate in classroom and online discussions of readings that complement the lectures and textbook assignments and to complete in-class presentations and written review assignments.
2.00 credit hours. Lecture. PSW.300, PSW.301, PSW.313, PPW.397 (Required, Previous).

PSW.355
Directed Study

Individual study directed by a faculty member in an area of her or his expertise. Faculty-assisted instruction using existing or previously known data and information. Eligible students must have earned a cumulative minimum 2.7 grade point average and have completed or be enrolled in all required courses consistent with their current academic standing.
2.00 credit hours. Lecture.

PSW.361
The Pharmacological Basis of Drug Development
Students will learn the pharmacological aspects involved in drug development and the animal models used to test these drugs. Primary emphasis is on understanding the criteria that make the model valid and conducting a literature survey of animal models for a disorder. Required course for students enrolled in Classical and Clinical Pharmacology concentration and elective for PharmD students if offered.
2.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous).

PSW.365L
ST: Medicinal Chemistry Research
Special Topics course. Students will use the skills learned in previous organic chemistry and biochemistry courses (as well as during their previous PSW.355 Directed Study in analyzing early drug development data, performing physicochemical calculations, and using predictive chemical modeling) and apply them to an original project in drug discovery and drug optimization. Each student will synthesize novel compounds using multistep organic synthesis techniques. Following purification and characterization, each student will submit their final products for biological screening. The capstone requirement of the course will be the presentation of each student's efforts in poster format.
2.00 credit hours. Laboratory.

PSW.365M
ST: Virtual Experimental Pharmacology
Special Topics course. Students will use computer software simulations to perform virtual classical in vivo and in vitro pharmacology experiments. Students will observe the action of representative drugs at the organ system level or intact animal level. Students will learn and perform graphical analysis of data to gain an in-depth appreciation of the dose-response relationship, drug-antagonist interactions, and receptor subtypes.
2.00 credit hours. Lecture.
PSW.365N

ST; Medical Cannabis
Special Topics course. This course will introduce doctor of pharmacy students to the medical uses of cannabis, commonly known as "medical marijuana", from a scientific perspective. Students will explore cannabis, cannabinoid, and endocannabinoid: pharmacology and fundamental science concepts, differences between cannabis and cannabinoids, therapeutics, and ethical, social, and legal complexities.
2.00 credit hours. Lecture.

PSW.365T
ST: Cosmeceuticals and Skin Care Products
Special Topics course. The Cosmeceuticals and Skin Care Products course will introduce the principles of skin sciences, skin types, cosmetic formulation development, cosmeceuticals in skin care application, and regulations in cosmetics development. The course will also provide students an opportunity in literature research and presenting their findings in the classroom.
2.00 credit hours. Lecture.

PSW.365U
ST: Rx Prevention
Special Topics course. Students will use and enhance skills learned in required PharmD courses to build expertise around behaviors that improve bodily function and promote preventive health care. Students will have opportunities to recognize, understand, and practice strategies for helping patients achieve good health through health promotion, specifically around deprescribing, nutrition, fall prevention, and reducing risk of cancer, diabetes, cardiovascular disease, and osteoporosis.
2.00 credit hours. Lecture.

PSW.368
Experimental Cancer Research
Major differences between normal and tumor tissues will be discussed. The lecture content will establish the intellectual framework necessary for understanding cancer research and treatment. Students will be assigned literature-based topics that they will develop and critically evaluate in stages.

2.00 credit hours. Lecture. PSW.311 (Required, Previous).

PSW.369
Pharmaceutical Nanotechnology
The goal of this course is to introduce students to the science of pharmaceutical nanotechnology with an added emphasis on its clinical application. The course has three integrated aspects; in-class course experience in the (1) scientific basis (2) clinical application of nanotechnology/nanomedicine; and (3) project-based theoretical approach to nanoparticle design/formulation.
2.00 credit hours. Lecture.

PSW.371
Research Project
Independent research directed by a faculty member in an area of her/his expertise. The student's work will generate new data or knowledge or apply significantly new methodologies to analyze previously published data.
2.00 credit hours. Lecture.

PSW.377
Cosmeceuticals and Skin Care Products
This course will introduce the principles of skin sciences, skin types, cosmetic formulation development, cosmeceuticals in skin care application, and regulations in cosmetics development. The course will also provide students an opportunity in literature research and presenting their findings in the classroom.
2.00 credit hours. Lecture.

PSW.385
Pharmacology, Toxicology, and Medicinal Chemistry I
A review of organic functional groups, stereochemistry, acid/base chemistry and reaction mechanism, introduction to pharmacodynamics, drug discovery, the drug approval process, mechanism of drug action, drug receptor/enzyme interactions, drug metabolism, drug toxicity, and drug safety evaluation and risk assessment.
3.00 credit hours. Lecture. PPW.331, PPW.378, PPW.379, PSW.301, PSW.312, PSW.313, PSW.325 (Required, Previous).

PSW.413
Applied Clinical Pharmacokinetics
This is an application course building on basic principles of Pharmacokinetics covered in the previous year. Dose adjustments required to assure safety and efficacy for specific population subgroups will be covered. Furthermore, specific drugs spanning a cross-section of clinically monitored drug classes (i.e. commonly used and low-therapeutic-index drugs) will be addressed.
1.00 credit hours. Lecture. PPW.445, PPW.453, PSW.470, PSW.475 (Required, Previous); PPW.448, PPW.457, PSW.473, PSW.485 (Required, Previous or Concurrent).

PSW.435
Physiology/Pathophysiology II Toxicology II
This course is the third in a series focused on comparative study of organ system functions and their relationship to the etiology, pathogenesis, and clinical manifestation of human diseases. Students will learn endocrine system function and dysfunction; and control of vascular tone and associated pathophysiology.
1.00 credit hours. Lecture. PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous).

PSW.445
Pharmacology, Medicinal Chemistry, and Toxicology II
This course is the second in the series of Pharmacology, Toxicology, and Medicinal Chemistry series, and involves a coordinated approach for learning structure-activity relationships, mechanism of drug action, and toxicity profiles for selected classes of drugs for common disease states.
2.00 credit hours. Lecture. PPW.348, PPW.384, PSW.335, PSW.385 (Required, Previous).

PSW.470
Human Physiology/Pathophysiology III Pathophysiology
This course is the fourth in a series focused on comparative study of organ system functions and their relationship to the etiology, pathogenesis, and clinical manifestation of human diseases. Students will learn functions and associated pathophysiology in the following systems: A) cardiovascular: control of coronary circulation, cardiac contractility; B) respiratory; C) muscle and D) somatosensory.
2.00 credit hours. Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PSW.473
Pharmacogenomics
This study of Pharmacogenomics builds on concepts introduced in courses encountered during earlier semesters, such as Pharmacology and Pharmacotherapeutics. Students will examine the factors responsible for differing responses of individuals to specific drug therapy. This includes analyses of genomic polymorphisms and their implications for pharmacotherapy. Students will be equipped to integrate these factors into the Pharmacists' Patient Care Process.
2.00 credit hours. Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445, PSW.475 (Required, Previous).

PSW.475
Pharmacology, Medicinal Chemistry, and Toxicology III
This course is the third in the series of Pharmacology, Toxicology, and Medicinal Chemistry, and involves a coordinated approach for learning structure-activity relationships, mechanism of drug action, and toxicity profiles for selected classes of drugs for common disease states.
7.00 credit hours. Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445 (Required, Previous).

PSW.485
Pharmacology, Toxicology, and Medicinal Chemistry IV
This course is the fourth in the series of Pharmacology, Toxicology, and Medicinal Chemistry, and involves a coordinated approach for learning structure-activity relationships, mechanism of drug action, and toxicity profiles, for selected classes of drugs for common disease states. Emphasis is on drugs affecting the central nervous system, some neuro/psychiatric disorders and oncology.
3.00 credit hours. Lecture. PPW.440, PPW.450, PPW.460, PSW.435, PSW.445, PSW.475 (Required, Previous).

Physical Therapy (PTH)

PTH.310
Functional Anatomy
Students learn to utilize kinesiological process to analyze movement and modify movement for more optimal performance. This course is divided into four main sections: 1) Introduction to movement analysis, 2) movement of lower extremity, trunk/spine, 3) movement of upper extremity, and 4) wrist.
3.00 credit hours. Lecture. BIO.210 (Required, Previous).

PTH.501
Physical Therapy as a Profession
Students learn about the profession of physical therapy, the scope of practice, and to apply the Core Values of the APTA. This course will also serve as an introduction to clinical reasoning in physical therapy. The frameworks and types of clinical reasoning are explored and applied to patient scenarios. The characteristics of experts and novices will be explored through current literature to enhance the understanding of the developmental nature of clinical reasoning skill. Students will explore their own thinking and practice skills of self-reflection.
1.00 credit hours. Lecture.

PTH.510
Foundations of PT Management I
This course is designed to provide a basic practical understanding of patient management skills used in physical therapy practice, including infection control, the use of a medical record and documentation, oral and written communication, vital signs, body mechanics, transfer techniques, range-of-motion exercises, guarding techniques for patient ambulation, and the measurement of assistive devices.
3.00 credit hours. Lecture.

PTH.510L
Foundations of PT Management I Lab
This course is designed to provide a basic practical understanding of patient management skills used in physical therapy practice, including infection control, the use of a medical record and documentation, oral and written communication, vital signs, body mechanics, transfer techniques, range-of-motion exercises, guarding techniques for patient ambulation, and the measurement of assistive devices.
0.00 credit hours. Laboratory.

PTH.515
Foundations of PT Management II
Topics include the anatomical and physiological responses to physical agent modalities including the appropriate selection and application of these modalities to meet specific patient needs. Students will become competent in the selection, application, and proper documentation of commonly used electrotherapeutic modalities, as well as thermal and mechanical agents. Theories underlying these patient interventions are explored in detail. An additional focus of

this course is the integration of these modalities into the overall physical therapy plan of care. Prerequisite: Successful completion of DPT Year I Fall semester.
3.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.515L
Foundations of PT Management II Lab
0.00 credit hours. Laboratory. PTH.515 (Required, Concurrent).

PTH.520
Clinical Medicine and Pathology I
Students will acquire foundational knowledge of the pathological processes of major body systems, including immune, hematological, hemodynamic, cardiovascular, cardiopulmonary, integumentary, gastrointestinal, genitourinary, hepatobiliary, renal, genitourinary, endocrine, and lymphatic. General medicine, laboratory medicine, and pathophysiology as related to patient conditions that impact physical therapy management will be addressed.
3.00 credit hours. Lecture.

PTH.521
Movement and Structure I
This course covers the structure and function of the typical and impaired musculoskeletal system. Typical anatomy and biomechanics are examined in context of patient cases with common musculoskeletal problems to understand tissue and organ stressors, involvement of other systems, disease processes, aging, and environmental interactions that result in physiological responses that may lead to or exacerbate pathology, impairment, or dysfunction.
4.00 credit hours. Lecture.

PTH.521L
Movement and Structure I Lab
0.00 credit hours. Laboratory. PTH.521 (Required, Concurrent).

PTH.522
Movement and Structure II
This course covers structure and function of the typical and impaired musculoskeletal system. Students are introduced to concepts of typical movement control and observational movement analysis. Typical anatomy and biomechanics are examined in the context of patient cases. Movement control, structure, and function will be integrated within a task-oriented approach to developing a holistic plan of care across the lifespan.
4.00 credit hours. Lecture.

PTH.522L
Movement and Structure II Lab
0.00 credit hours. Laboratory. PTH.522 (Required, Concurrent).

PTH.523
Structure and Movement III
This course covers typical and impaired neuromuscular, cardiovascular, pulmonary, and other systems. Building upon concepts of typical motor control and observational movement analysis and introducing atypical movement patterns across the lifespan. Motor control, structure, and function will be integrated within a task-oriented approach to developing a holistic plan of care across the lifespan
4.00 credit hours. Lecture.

PTH.525
Clinical Medicine and Pathology II
Students will learn foundational knowledge of pathological processes of major body systems. General medicine, laboratory medicine and pathophysiology as related to patient conditions that impact physical therapy management will be addressed. This second course will focus the Musculoskeletal diagnoses.
2.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.530
Clinical Human Anatomy
Students will learn normal anatomy, function, and pathology with emphasis on the skeletal, articular, and muscular systems. Students will use a regional approach to study surface anatomy, range of motion, and clinical palpation. In the laboratory experience, students will study human anatomy preparations and anatomy models.
6.00 credit hours. Lecture.

PTH.530L
Clinical Human Anatomy I Lab
Students will learn normal anatomy, function, and pathology with emphasis on the skeletal, articular, and muscular systems. In this first course, students will focus on lower body anatomy. Students will use a regional approach to study surface anatomy, range of motion, and clinical palpation. In the laboratory experience, students will study human anatomy preparations and anatomy models.
0.00 credit hours. Laboratory.

PTH.540
Evidence for PT Practice I
Students are introduced to the foundation of scientific inquiry in physical therapy including library search methods, establishment of research questions, research methods, research ethics, and AMA format. Prerequisite: DPT student
2.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.541
Examination and Evaluation I
This course presents conceptual models emphasizing a patient-centered approach for clinical decision-making and management for patients with musculoskeletal dysfunction across the lifespan. Students are introduced to psychosocial, psychomotor, and communication aspects of interacting with patients. Students are introduced to the concepts of evidence-based practice in musculoskeletal care including diagnosis, prognosis, and psychometric studies.
4.00 credit hours. Lecture.

PTH.541L
Examination and Evaluation I Lab
0.00 credit hours. Laboratory. PTH.541 (Required, Concurrent).

PTH.542
Examination and Evaluation II
This course presents conceptual models emphasizing a patient-centered approach for clinical decision-making and management for patients presenting with musculoskeletal dysfunction across the lifespan. Basic concepts in patient data collection of the musculoskeletal system are presented, including patient history, assessment of range of motion, pain, basic muscle performance, posture, body mechanics, and functional movement analysis.
4.00 credit hours. Lecture.

PTH.542L
Examination and Evaluation II Lab
0.00 credit hours. Laboratory. PTH.542 (Required, Concurrent).

PTH.543
Examination and Evaluation III
Concepts in the examination and evaluation of the neuromuscular, cardiovascular, and pulmonary system are presented. Students will apply the concepts of evidence-based practice to guide prioritization and selection of assessment. Patient documentation and clinical reasoning and professional communication continue to be developed. Discussion of related body systems and structures will be included and their impact on physical therapy care.
4.00 credit hours. Lecture.

PTH.545
Evidence for PT Practice II
Students are introduced to the concepts of scientific inquiry as related to clinical practice and clinical outcomes. Students use current PT literature to explore the use of best research evidence and outcomes measurement applying critical appraisal techniques. Prerequisite: Successful completion of DPT Year I Fall semester.
2.00 credit hours. Lecture. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.652 (Required, Previous).

PTH.550
Evidence Based Practice II
Students are introduced to the concepts of scientific inquiry as related to clinical practice and clinical outcomes. Students use current PT literature to explore the use of best research evidence and outcomes measurement applying critical appraisal techniques.
2.00 credit hours. Lecture.

PTH.552
PT in the Acute Care Environment

This course is designed to prepare physical therapy students to safely manage patients in acute and critical care settings. The course will focus on integrative analysis of multiple disease processes (spanning all practice patterns: musculoskeletal, neuromuscular, cardiovascular, pulmonary, and integumentary) and their respective medical and surgical management that is relevant to physical therapy management.
2.00 credit hours. Lecture. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.590 (Required, Previous).

PTH.552L
PT in the Acute Care Environment Lab
This course is designed to prepare physical therapy students to safely manage patients in acute and critical care settings. The course will focus on integrative analysis of multiple disease processes (spanning all practice patterns: musculoskeletal, neuromuscular, cardiovascular, pulmonary, and integumentary) and their respective medical and surgical management that is relevant to physical therapy management.
0.00 credit hours. Laboratory.

PTH.554
Lifespan Motor Control
The course will examine neural, behavioral, and physical mechanisms that contribute to the control of movement in humans (motor control) over the lifespan. The focus will be on motor control in healthy persons across the lifespan. The course also will examine factors that influence the learning of new motor skills (motor learning) as a result of practice and/or experience.
3.00 credit hours. Lecture. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.652 (Required, Previous).

PTH.556
Human Gait
This course will cover the examination, evaluation, and beginning treatment interventions for human gait and balance. The focus will be on gait analysis and will include standardized measures. Students will explore control mechanisms, including pattern generators, motor and sensory mechanisms, cognitive systems, and nonneural contributions to locomotion. Task-oriented mobility interventions such as body weight support treadmill training will be introduced. In the lab portion of this course, students learn the skills of gait analysis using visual, mechanical, and technology assisted methodologies.
2.00 credit hours. Lecture. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.652 (Required, Previous).

PTH.556L
Human Gait Lab
This course will cover the examination, evaluation, and beginning treatment interventions for human gait and balance. The focus will be on gait analysis and will include standardized measures. Students will explore control mechanisms, including pattern generators, motor and sensory mechanisms, cognitive systems, and nonneural contributions to locomotion. Task-oriented mobility interventions such as body weight support treadmill training will be introduced. In the lab portion of this course, students learn the skills of gait analysis using visual, mechanical, and technology assisted methodologies.
0.00 credit hours. Laboratory. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.585 (Required, Previous).

PTH.558
Clinical Kinesiology
This course is designed to study normal movement through the analysis of muscle and joint function. Emphasis will be placed on the analysis of major joints and regions of the body. The laboratory portion of this course is designed to provide the student with the clinical skills of goniometry and manual muscle testing to assess joint mobility and muscle performance.
3.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.558L
Clinical Kinesiology Lab
This course is designed to study normal movement through the analysis of muscle and joint function. Emphasis will be placed on the analysis of major joints and regions of the body. The laboratory portion of this course is designed to provide the student with the clinical skills of goniometry and manual muscle testing to assess joint mobility and muscle performance.
0.00 credit hours. Lecture.

PTH.560
Standardized Measurement in PT Practice

Students will learn information about measurement in physical therapy. Topics to be covered include measurement levels, reliability, validity, sensitivity and specificity of standardized measurements in physical therapy. Specific measurement tools at different levels of the International Classification of Functioning, Disability and Health (ICF) will be covered.
2.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.560L
Standardized Measurement PT Practice Lab
Students will learn information about measurement in physical therapy. Topics to be covered include measurement levels, reliability, validity, sensitivity and specificity of standardized measurements in physical therapy. Specific measurement tools at different levels of the ICF will be covered across the four practice patterns. Prerequisite: Successful completion of DPT Year I Fall semester.
0.00 credit hours. Laboratory. PTH.560 (Required, Concurrent).

PTH.561
Interventions I
This course introduces students to intervention selection, planning, and implementation. Students will learn a systematic approach to collecting patient data and performing basic movement analysis that will then inform the prioritization, selection, and prescription of evidence-based therapeutic interventions. Interventions will span across health conditions, body structure/function impairments, activity limitations, and participation restrictions, with consideration of relevant psychosocial patient factors.
4.00 credit hours. Lecture.

PTH.561L
Interventions I Lab
0.00 credit hours. Laboratory. PTH.561 (Required, Concurrent).

PTH.562
Interventions II
This course builds on PTH 561 introducing students to selection, planning, implementation and evaluation of evidence-based therapeutic exercise for patients with musculoskeletal conditions of the upper extremity, spine and pelvis.
4.00 credit hours. Lecture.

PTH.562L
Interventions II Lab
0.00 credit hours. Laboratory. PTH.562 (Required, Concurrent).

PTH.563
Interventions III
Students will learn a systematic approach to collecting patient data and performing basic movement analysis that will then inform the prioritization, selection, and prescription of evidence-based therapeutic interventions. Interventions will span across health conditions, body structure/function impairments, activity limitations, and participation restrictions, with consideration of relevant psychosocial patient factors across the lifespan
4.00 credit hours. Lecture.

PTH.565
Cardiopulmonary Patient Management
This course covers physical therapy management of patients needing cardiovascular and pulmonary care. The laboratory component presents examination skills and clinical applications of physical therapy intervention. The lecture part of the course includes the etiology, pathology, and prognosis of common cardiopulmonary conditions. Medical, surgical, and physical therapy management for these conditions will be addressed in both lecture and laboratory sessions.
3.00 credit hours. Lecture. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.652 (Required, Previous).

PTH.565L
Cardiopulmunary Patient Management
This course covers physical therapy management of patients needing cardiovascular and pulmonary care. The laboratory component presents examination skills and clinical applications of physical therapy intervention. The lecture part of the course includes the etiology, pathology, and prognosis of common cardiopulmonary conditions. Medical, surgical, and physical therapy management for these conditions will be addressed in both lecture and laboratory sessions.
0.00 credit hours. Lecture.

PTH.570
Integrated Clinical Education I
This first course provides students with opportunities to synthesize and integrate content from concurrent courses to patient encounters in clinical settings. The focus of this course will be professional communication and behavior, and the application of clinical skills learned in concurrent courses. This is accomplished through seminars, reflection, service learning, learning activities, case studies, and observation.
2.00 credit hours. Lecture.

PTH.575
Integrated Clinical Education II
This second course provides students with opportunities to synthesize and integrate content from concurrent and previous courses to patient encounters in clinical settings. The focus of this course will be professional communication and behavior, and the application of clinical skills learned in concurrent and previous courses. This is accomplished through seminars, reflection, service learning, learning activities, case studies and observation
2.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.580
Professional Issues in PT Practice I
Students will learn about the roles and responsibilities of a physical therapist within the healthcare system. Methods of healthcare delivery and issues of access, availability, and financial coverage will be examined.
1.00 credit hours. Lecture. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.652 (Required, Previous).

PTH.581
Professional Issues in PT I
Students are introduced to and examine issues related to the role and responsibilities of the physical therapist in working with our diverse patient population in professional practice. Effective communication, cultural humility, ethical and moral decision-making, the role of empathy and challenging bias, and other professional issues are covered. Guiding documents of the APTA are used as tools for this course.
2.00 credit hours. Lecture.

PTH.585
Neuroscience
Students learn basic neuroanatomy and neurophysiology with an emphasis on issues that have clinical relevance to physical therapy rehabilitation. Emphasis will be placed on developing an understanding of the neural control of the human body. Pathological processes of the neurological system will be covered as related to patient conditions that impact physical therapy.
4.00 credit hours. Lecture. PTH.501, PTH.510, PTH.520, PTH.530, PTH.570 (Required, Previous).

PTH.585L
Neuroscience Lab
Students learn basic neuroanatomy and neurophysiology with an emphasis on issues that have clinical relevance to physical therapy rehabilitation. Emphasis will be placed on developing an understanding of human performance and motor control.
0.00 credit hours. Laboratory. PTH.652 (Required, Concurrent).

PTH.590
Therapeutic Exercise
Students will focus on the role of therapeutic exercise as an intervention utilized by physical therapists. Students will become skilled in exercise prescription and execution of exercise to address impairments, functional limitations and participation restrictions seen across the lifespan. The role of exercise as a tool in prevention programs is explored.
2.00 credit hours. Lecture. PTH.515, PTH.525, PTH.540, PTH.558, PTH.560, PTH.575, PTH.652 (Required, Previous).

PTH.590L
Therapeutic Exercise Lab
Students will focus on the role of therapeutic exercise as an intervention utilized by physical therapists. Students will become skilled in exercise prescription and execution of exercise to address impairments, functional limitations and participation restrictions seen across the lifespan. The role of exercise as a tool in prevention programs is explored as well.
0.00 credit hours. Lecture. PTH.590 (Required, Previous or Concurrent).

PTH.601

Clinical Imaging
This course will introduce students to diagnostic imaging principles and techniques as applied to physical therapy assessment and management. The course will emphasize radiographic anatomy, common normal variants, and pathological and traumatic conditions. In addition to standard radiographic techniques, other imaging techniques, such as CT scan, nuclear medicine, angiography, magnetic resonance imaging, and ultrasound imaging, will be addressed.
2.00 credit hours. Lecture.

PTH.610
Musculoskeletal Patient Management I
Students learn the theoretical basis and clinical application of examination, assessment, diagnosis, prognosis, and intervention for musculoskeletal conditions that are commonly encountered by physical therapists, with application to the lumbo-sacral spine and lower extremity. In the lab portion of this course, students develop decision-making and reasoning processes that enhance their examination skills, differential diagnosis, and clinical application of interventions.
3.00 credit hours. Lecture. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.650 (Required, Previous).

PTH.610L
Musculoskeletal Patient Management I Lab
Students learn the etiology and pathology of common orthopedic disorders of the lower extremities. Medical, surgical, and physical therapy management will be discussed. Students learn the theoretical basis and clinical application of examination, assessment, diagnosis, prognosis, and intervention for conditions that are commonly encountered by physical therapists. In the lab portion of this course, students learn examination skills, differential diagnosis, and clinical application of intervention approaches for selected musculoskeletal conditions.
0.00 credit hours. Lecture. PTH.554, PTH.556, PTH.558, PTH.565 and PTH.580 (Required, Previous).

PTH.615
Musculoskeletal Patient Management II
Students learn the theoretical basis and clinical application of examination, assessment, diagnosis, prognosis, and intervention for musculoskeletal conditions that are commonly encountered by physical therapists, with application to the cervico-thoracic spine and upper extremity. In the lab portion of this course, students develop decision-making and reasoning processes that enhance their examination skills, differential diagnosis, and clinical application of interventions.
3.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.615L
Musculoskeletal Patient Management II Lab
Students learn the theoretical basis and clinical application of examination and intervention for orthopedic dysfunction of the extremities for conditions that are commonly encountered by physical therapists. In the lab portion of this course, students are exposed to the philosophies of various noted practitioners in the field of orthopedic physical therapy. Prerequisite: Successful completion DPT Year 2, Fall Semester.
0.00 credit hours. Laboratory. PTH.615 (Required, Previous or Concurrent).

PTH.620
Musculoskeletal Patient Management III
Students learn and practice selected advanced interventions applied in physical therapy practice to the spine and periphery, advancing their decision-making skills in the creation and modification of a plan of care. Thrust manipulations, manual therapy techniques, neural mobilization, and functional exercise interventions are included.
3.00 credit hours. Lecture. PTH.615, PTH.635, PTH.645, PTH.656, PTH.658, PTH.660, PTH.675 (Required, Previous).

PTH.620L
Musculoskeletal Patient Management III Lab
Students will learn and apply different theories of patient examination and physical therapy intervention for all regions of the spine, pelvis, and temporomandibular joint. Patient management using Cyriax, Maitland, Mulligan, and McKenzie will be discussed and demonstrated. Neural mobilization techniques will also be included with an emphasis on individual nerve testing, self-mobilization practices, and functional exercise interventions.
0.00 credit hours. Laboratory. PTH.615, PTH.630, PTH.645, PTH.656, PTH.658, PTH.660, PTH.675 (Required, Previous).

PTH.630
Neuromuscular Patient Management I
This course focuses on the neurological physical therapy examination and evaluation. Concepts include examination skills for neurological conditions, clinical decision making, overview of neurological rehabilitation, components of the

neurological examination process, vestibular examination, and an introduction into neurological interventions for patients with neurological deficits. Concepts related to the environmental considerations, neuroplasticity, and motor control will be covered.
3.00 credit hours. Lecture. PTH.515, PTH.525, PTH.652, PTH.540, PTH.558, PTH.560, PTH.575 (Required, Previous).

PTH.630L
Neuromuscular Patient Management I Lab
This course covers the foundations of the physical therapy examination, evaluation and an introduction to interventions with patients with neurological deficits. The laboratory component presents examination skills and clinical applications of integrated intervention approaches. The lecture part of the course includes the etiology, pathology and physical therapy management of adult non-progressive disorders that affect the CNS. Prerequisite: Successful completion of DPT Year 2 Fall Semester
0.00 credit hours. Laboratory. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.650 (Required, Previous).

PTH.635
Neuromuscular Patient Management II
This course focuses on the physical therapy management of adult neurological disorders. Progressive disorders and non-progressive disorders of the spinal cord and nervous system will be covered. This course builds upon skills learned in Neuromuscular Patient Management I and focuses on application and critical analysis of evidence-based treatment approaches as well as clinical application of different intervention approaches.
3.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.635L
Neuromuscular Patient Management II Lab
This course builds upon skills learned in Neuromuscular Patient Management I and focuses on the application and critical analysis of evidenced-based treatment approaches. The lecture part of the course includes the etiology, pathology, and physical therapy management of adult progressive disorders that affect the central nervous system as well as nonprogressive disorders of the spinal cord and peripheral nervous system.
0.00 credit hours. Laboratory. PTH.635 (Required, Concurrent).

PTH.640
Evidence for PT Practice III
In small groups, students develop and work on a concentrated project of community interest and/or relevance related to the field of physical therapy. Ongoing work includes detailed literature searching and continued critical appraisal of related literature, with the development of a research proposal related to the concentrated project. In-class, independent group work and off-campus work may be necessary.
2.00 credit hours. Lecture. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.650 (Required, Previous).

PTH.645
Evidence for PT Practice IV
In small groups, students utilize a patient case to create a comprehensive case report that is presented at the close of the semester. Additionally, students continue utilizing evidence based practice skills in relation to didactic content, as well as continued work on the project started in PTH 640. In-class, independent group work and off-campus work may be necessary.
2.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.651
ST: Therapeutic Exercise
Special Topics course. Students will focus on the role of therapeutic exercise as an intervention utilized by physical therapists. In this course, interventions which are advanced, specialized, and/or complementary will be the focus. The concepts of exercise progression and regression are expanded. Recommendations for complementary therapies adjunctive to physical therapy will be explored, as will the examination of evidence supporting their use.
1.00 credit hours. Lecture. PTH.615, PTH.635, PTH.645, PTH.656, PTH.658, PTH.660, PTH.675 (Required, Previous).

PTH.653
Pharmacology
Students will learn an introduction to the basic principles of pharmacology including pharmacokinetics and pharmacodynamics. The pharmacology of drug classes used in the management of disorders of the nervous, musculoskeletal, cardiovascular, respiratory, pain, integumentory, and endocrine system, as well as, infectious and neoplastic diseases will be addressed. Emphasis will be placed on how pharmacology interacts with physical rehabilitation. Prerequisite: Successful completion DPT Year 1, Fall Semester.
3.00 credit hours. Lecture. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.650 (Required, Previous).

PTH.654
Orthotics and Prosthetics
This course includes the theory and current clinical practices related to upper and lower extremity prostheses along with the ability to evaluate and recommend the use of orthotic devices for upper and lower extremities as well as the spine. Examination and implementation of physical therapy interventions in the management of this patient population will also be covered.
3.00 credit hours. Lecture. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.650 (Required, Previous).

PTH.654L
Orthotics and Prosthetics Lab
This course includes the theory and current clinical practices related to upper and lower extremity prostheses along with the ability to evaluate and recommend the use of orthotic devices for upper and lower extremities as well as the spine. Examination and implementation of physical therapy interventions in the management of this patient population will also be covered.
0.00 credit hours. Laboratory. PTH 554, PTH.556, PTH.558, PTH.565 and PTH.580 (Required, Previous).

PTH.656
PT Management of the Geriatric Patient
This course provides a survey of geriatric concerns relating to each of the body systems. The changes normally expected with aging are contrasted with pathological changes. Emphasis of this course will be on screening, examination, evaluation and intervention when working with the older adult. Nutrition, pharmacology and health promotion and wellness will also be addressed. Prerequisite: Successful completion DPT Year 2, Fall Semester.
3.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.658
PT Management of the Pediatric Patient
This course provides a survey of pediatric concerns relating to each of the body systems and the corresponding physical therapy management of the child from the newborn period through adolescence. Emphasis is on development including motor patterns, sensory integration, and oral-motor skills; setting-specific considerations; health promotion and wellness for children with and without disabilities; and family-therapist collaboration and communication. Prerequisite: Successful completion of the DPT Year 2 Fall semester.
3.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.660
Professional Issues in PT Practice II
Physical therapy students continue to examine issues related to the role and responsibilities of the physical therapist in professional practice. Effective communication, cultural competency, ethical and moral decision-making, leadership, delegation, supervision, and other professional issues are covered. The guiding documents of the APTA are used as tools for this course.
2.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.665
Professional Issues in PT Practice III
Students will learn the basic concepts and principles of management as they apply to the administration and direction of physical therapy services. Included are development planning and design, fiscal management, principles of supervision, legal issues, quality assurance and telehealth.
2.00 credit hours. Lecture. PTH.615, PTH.635, PTH.645, PTH.656, PTH.658, PTH.660, PTH.675 (Required, Previous).

PTH.670
Integrated Clinical Education III
This third course provides students with opportunities to synthesize and integrate content from concurrent and previous courses and apply it to patient encounters in clinical settings. The focus of this course will be professional communication and behavior as well as the application of clinical skills learned in concurrent and previous courses. This is accomplished through seminars, reflection, learning activities, case studies, and observation.
2.00 credit hours. Lecture. PTH.545, PTH.554, PTH.556, PTH.565, PTH.580, PTH.650 (Required, Previous).

PTH.675
Integrated Clinical Education IV
This fourth course provides students with opportunities to synthesize and integrate content from concurrent and previous courses to patient encounters in clinical settings. The focus of this course will be professional communication

and behavior, and the application of clinical skills learned in concurrent and previous courses. This is accomplished through seminars, reflection, learning activities, case studies and observation.
2.00 credit hours. Lecture. PTH.552, PTH.610, PTH.630, PTH.640, PTH.653, PTH.654, PTH.670 (Required, Previous).

PTH.680
Integrated Clinical Education V
This fifth course provides students with opportunities to synthesize and integrate content from concurrent and previous courses and apply it to patient encounters in clinical settings. The focus of this course will be professional communication and behavior as well as the application of clinical skills learned in concurrent and previous courses. This is accomplished through seminars, reflection, learning activities, case studies, and observation.
2.00 credit hours. Lecture. PTH.615, PTH.635, PTH.645, PTH.656, PTH.658, PTH.660, PTH.675 (Required, Previous).

PTH.680L
Integrated Clinical Education V Lab
This fifth course provides students with opportunities to synthesize and integrate content from concurrent and previous courses and apply it to patient encounters in clinical settings. The focus of this course will be professional communication and behavior as well as the application of clinical skills learned in concurrent and previous courses. This is accomplished through seminars, reflection, learning activities, case studies, and observation.
0.00 credit hours. Laboratory. PTH.615, PTH.630, PTH.645, PTH.656, PTH.658, PTH.660, PTH.675 (Required, Previous); PTH.680 (Required, Concurrent).

PTH.685
Directed Study for Physical Therapy
This course is organized as an individual study and directed by a faculty member from the School of Physical Therapy. Student learning involves self-instruction and/or faculty-assisted instruction using existing or previously known knowledge.
1.00 - 3.00 credit hours. Lecture.

PTH.740
Health Promotion and Wellness: Population Health
Physical therapists are well positioned to meet societal needs and reduce the global burden of noncommunicable diseases through the integration of evidence-based population health, prevention, health promotion, and wellness (PHPW) activities into practice. This course prepares students to meet consensus-based competencies in PHPW.
2.00 credit hours. Lecture.

PTH.761
Exercise for Select Populations
In this elective course, students will be introduced to the clinical applications, physiological effects/benefits, and potential contraindications to Amplitude-oriented exercise techniques for patients with Parkinson's disease through advance readings, lecture, and laboratory practice.
1.00 credit hours. Lecture. PTH.620, PTH.665, PTH.680, PTH.690 (Required, Previous).

PTH.771
Strength and Conditioning in Rehabilitation
In this elective course, students will learn principles of strength and conditioning and how to apply them to the physical therapy setting. Using hands-on practice in a lab based setting, students will implement new approaches to progress and regress exercises, techniques for effective coaching, and strength and conditioning programming.
1.00 credit hours. Lecture. PTH.620, PTH.665, PTH.680, PTH.690 (Required, Previous).

PTH.810
Evidence for PT Practice V
In small groups, students conclude the concentrated project of community interest and/or relevance related to the field of physical therapy that was begun in PTH 640. Student groups will organize, analyze and present findings from the project. Presentation of the findings is done in poster and podium presentations to faculty, peers and clinicians.
1.00 credit hours. Lecture. PTHC.700, PTHC.710 (Required, Previous).

PTH.830
Professional Issues in PT Practice IV
Students will prepare for entry to professional work in physical therapy by developing job search strategies and identifying post-graduation career opportunities including clinical education instruction. Students will develop two key plans for success: a study plan for licensure preparation and a career plan for lifelong learning.
2.00 credit hours. Lecture. PTHC.700, PTHC.710 (Required, Previous).

PTHC.700
Clinical Education Experience I
This course is the first 10-week full-time clinical education experience, conducted in a variety of clinical settings. Students will be provided with opportunities to apply skills previously learned in the DPT curriculum. Students will work under the supervision and guidance of a licensed physical therapist to develop competency in the management of patients with a variety of diagnoses.
8.00 credit hours. Clinical. PTH.620, PTH.651, PTH.665, PTH.680 (Required, Previous).

PTHC.710
Clinical Education Experience II
This course is the second 10-week full-time clinical education experience, conducted in a variety of clinical settings. Students will be provided with opportunities to apply skills previously learned in the DPT curriculum. Students will work under the supervision and guidance of a licensed physical therapist to develop competency in the management of patients with a variety of diagnoses.
8.00 credit hours. Lecture. PTHC.700 (Required, Concurrent).

PTHC.720
Clinical Education Experience III
This course is the third 10-week full-time clinical education experience, conducted in a variety of clinical settings. Students will be provided with opportunities to apply skills previously learned in the DPT curriculum. Students will work under the supervision and guidance of a licensed physical therapist to develop competency in the management of patients with a variety of diagnoses.
8.00 credit hours. Clinical. PTHC.700, PTHC.710 (Required, Previous).

Radiography (RAD)

RAD.201C
Radiography Internship I
The Clinical Internship rotation is designed to allow the student hands on training in their desired field of radiography. The student will work one on one with the clinical instructor or, technologist with direct or indirect instruction in the affiliate hospital performing diagnostic images.RAD 201C 15 week rotation. RAD 202C 10 week rotation. Progression contingent upon successful completion of previous rotation. (Locations pending approval.)
4.00 credit hours. Lecture. RAD.210,RAD.210L,RAD.220, RAD.220L (Required, Previous).

RAD.202C
Radiography Internship II
The Clinical Internship rotation is designed to allow the student hands on training in their desired field of radiography. The student will work one on one with the clinical instructor or, technologist with direct or indirect instruction in the affiliate hospital performing diagnostic images.RAD 201C 15 week rotation. RAD 202C 10 week rotation. Progression contingent upon successful completion of previous rotation. (Locations pending approval.)
5.00 credit hours. Lecture. RAD.201C, RAD.211, RAD.211L, RAD.221 (Required, Previous).

RAD.205
Foundations of Radiography
This course introduces radiography students to the use of ionizing radiation in healthcare. Topics include the principles of radiation safety, radiologic credentialing and professional organizations, customer service, and an overview of the history of radiology in medicine
3.00 credit hours. Lecture.

RAD.210
Radiographic Procedures I
This course is the first course in a three part series of radiography procedural courses. The series of courses cover the procedures outlined in the ARRT content specifications. All procedure courses include instruction in positioning terminology, anatomy, procedural adaptation, and image evaluation utilized during radiographic procedures. Simulated exams are performed within the laboratory.
3.00 credit hours. Lecture. RAD.205, RAD.240, RSC.110, RSC.250, RSC.325 (Required, Previous).

RAD.210L
Radiographic Procedures I Lab
This course includes instruction in positioning terminology, anatomy, and image evaluation utilized during radiographic procedures. Simulated exams are performed within the laboratory.
1.00 credit hours. Laboratory. RAD.205, RAD.240, RSC.110, RSC.250, RSC.325 (Required, Previous).

RAD.211
Radiographic Procedures II
This course is the second course in a three part series of radiography procedural courses. The series of courses cover the procedures outlined in the ARRT content specifications. All procedure courses include instruction in positioning terminology, anatomy, procedural adaptation, and image evaluation utilized during radiographic procedures. Simulated exams are performed within the laboratory.
3.00 credit hours. Lecture. RAD.210, RAD.210, RAD.220, RAD.220L (Required, Previous).

RAD.211L
Radiographic Procedures II Lab
This course includes instruction in positioning terminology, anatomy, and image evaluation utilized during radiographic procedures. Simulated exams are performed within the laboratory.
1.00 credit hours. Laboratory. RAD.210, RAD.210L, RAD.220, RAD.220L (Required, Previous).

RAD.212
Radiographic Procedures III
This course is the third course in a three part series of radiography procedural courses. The series of courses cover the procedures outlined in the ARRT content specifications. All procedure courses include instruction in positioning terminology, anatomy, procedural adaptation, and image evaluation utilized during radiographic procedures. Simulated exams are performed within the laboratory.
3.00 credit hours. Lecture. RAD.202C, RAD.250 (Required, Previous).

RAD.220
Radiographic Exposure Principles I
This course explains and discusses X-ray production and emission, X-ray-matter interactions, image receptors, exposure factors, processing, and other factors related to image production as well as principles of radiation protection.
4.00 credit hours. Lecture. RAD.205, RAD.240, RSC.110, RSC.250, RSC.325 (Required, Previous).

RAD.220L
Radiographic Exposure Principles I Lab
This course explains and discusses X-ray production and emission, X-ray-matter interactions, image receptors, exposure factors, processing, and other factors related to image production as well as principles of radiation protection.
0.00 credit hours. Laboratory. RAD.220 (Required, Previous or Concurrent).

RAD.221
Radiographic Exposure Principles II
Continuation of Radiographic Exposure Principles I, with a focus on image quality and evaluation. The design and utilization of a quality assurance program to achieve optimal image quality with minimal radiation dose is discussed.
3.00 credit hours. Lecture. RAD.220, RAD.220L (Required, Previous); RAD.210 (Recommended, Previous).

RAD.231
Radiographic Pathology
Radiographic Pathology introduces students to the radiographic appearance of common disease processes, emphasizing how pathology impacts imaging procedures. The course covers recognition of abnormal findings, technical adjustments for optimal imaging, and correlation with clinical information. Students will enhance their diagnostic awareness and critical thinking to improve image quality and patient care in various clinical settings.
2.00 credit hours. Lecture. RAD.210, RAD.210L, RAD.220 (Required, Previous); RAD.201C, RAD.211, RAD.211L, RAD.221 (Required, Concurrent).

RAD.240
X-ray Radiation Physics
The fundamental processes governing the production, transmission, and interactions of x-rays for the purpose of medical radiography will be presented. Topics will include not only the basic physical principles of ionizing radiation but also the technologies that have been developed to use x-rays for producing diagnostically useful radiographs (high-voltage x-ray circuitry, rectification, thermionic diodes and filtration materials.
2.00 credit hours. Lecture. PHY.181, MAT.141 (Required, Previous).

RAD.250
Image Critique in Radiography
Students will enhance critical thinking and problem solving skills in the radiologic sciences through group focused assessment and evaluation of diagnostically acceptable radiographic images. Facilitators will guide students through

reflective image analysis of selected case studies using an interactive seminar format that reinforces imaging science principles and theories introduced throughout the curriculum. The synthesis approach to analytical critique of image quality integrates concepts previously explored in didactic courses and clinical rotations.
2.00 credit hours. Lecture. RAD.201C, RAD. 211 and RAD.211L (Required, Previous).

RAD.270
Introduction to Problem Solving in Radiography
This course is designed to assist the student in learning to integrate and synthesize material presented over the program's curriculum in order to prepare for the certification exam in Radiography. Content will be reviewed through peer tutoring sessions, case studies, online testing and presentations.
2.00 credit hours. Lecture. RAD.202C, RAD.250 (Required, Previous)
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RAD.303C
Radiography Internship III
Clinical internship in radiography. The student observes and performs diagnostic imaging procedures under direct and indirect supervision while completing required competency evaluations.
6.00 credit hours. Lecture. RAD.202C, RAD.250 (Required, Previous).

RAD.304C
Radiography Internship IV
This is a continuation of the internship sequence. Students perform radiographic procedures under direct and indirect supervision of a qualified radiographer and successfully complete the required competency evaluations. Progression is contingent upon successful completion of previous rotations.
6.00 credit hours. Lecture. RAD.212, RAD.270, RSC.320 (Required, Previous).

RAD.370
Problem Solving in Radiography
Offered in the final semester of the radiography program to integrate and synthesize the full content of the program into a coherent whole. Using a combination of online and classroom activities and discussions, including problem solving and self assessment techniques, students coalesce their knowledge base and improve their clinical decision making skills.
3.00 credit hours. Lecture. RAD.211, RAD.221, RAD.240, RAD.250, RAD.270 (Recommended, Previous).

Respiratory Therapy (RES)

RES.405
Introduction to Respiratory Care Studies Simulation
This course helps develop best practices to support learners in their BSRT course work. This includes research, professional issues, and the role of the professional baccalaureate respiratory therapist within the interprofessional healthcare team. Focus on the following skill sets: literature searching, academic reading, scholarly writing, delivery and use of constructive criticism and goal-setting for academic success.
3.00 credit hours. Lecture.

RES.410
Leadership in Healthcare
This course provided a study of theories, principles, and skills required in a healthcare leadership position. Provides an overview of evidence-based methods for evaluating and developing leaders and leadership. Emphasis is placed on the development of competencies applicable to healthcare leaders. Addresses the key issues confronting healthcare leaders today; examines the causes and develops reasonable solutions to current healthcare challenges.
3.00 credit hours. Lecture. RES.405, RES.420, RES.480 (Required, Previous).

RES.420
Protocols, Guidelines, and Policies In Respiratory Therapy
Students will apply current best practice into building and administering guidelines, protocols as a solid foundation for the bedside clinician. Students will also be able to develop policies to measure outcomes and reinforce best practice.
3.00 credit hours. Lecture. RES.405, RES.440 (Required, Previous or Concurrent).

RES.430
Introduction to Healthcare Research
Discuss the methods of research in the healthcare field. Focuses on Identification of research problems, sampling methods, data analysis and interpretation, and planning of evaluation studies.
3.00 credit hours. Lecture. RES.405, RES.420, RES.440, RES.480 (Required, Previous).

RES.440
Advanced Cardiopulmonary Physiology For the Respiratory Therapist
Covers advanced in-depth integrated physiology of the cardiovascular, renal, and pulmonary systems. Discusses the physiological dynamics, control mechanisms, and system interrelationships of the cardiovascular, pulmonary, and renal systems. Offers students an opportunity to make applications of advanced cardiopulmonary and renal physiology concepts to the management of neonatal, pediatric, adult, and geriatric patients requiring cardiovascular, pulmonary, and renal diagnosis and treatment.
3.00 credit hours. Lecture. RES.405 (Required, Previous); RES.420 (Required, Previous or Concurrent).

RES.450
Teaching in the Healthcare Setting Simulation
This course provides a foundation in educational theory and practical application skills of education delivery and evaluation within the healthcare setting. Course focuses on both the academic and clinical settings. Emphasis on designing educational material and assessment/feedback in the various education settings, including simulation.
3.00 credit hours. Lecture. RES.405, RES.470, RES.480 (Required, Previous).

RES.460
Essentials of Extracorporeal Life Support
This course will provide registered respiratory therapists an introduction to the fundamentals of extracorporeal life support (ECLS). Historic and current applications of this technique will be explored along with evolving technology and clinical management.
3.00 credit hours. Lecture. RES.440 (Required, Previous).

RES.470
Principles of CC Respiratory Disease Management
This course examines the systems and tools necessary to work with patients with chronic pulmonary diseases. Health models, processes, patient advocacy/engagement, and reporting/reimbursement, with the aim of improving patient outcomes and reducing healthcare costs will be covered. Exploration of ways to optimize quality of life for chronically ill patients with cardiopulmonary disease through rehabilitation, education, and outpatient management.
3.00 credit hours. Lecture. RES.405 (Required, Previous); RES.480 (Required, Previous or Concurrent).

RES.480
Evidence-Based Care in Respiratory Therapy Practice
Students will explore research that has driven best practice in Respiratory Therapy and examine prominent studies that continue to impact invasive and non-invasive ventilation strategies, morbidity and patient outcomes. Students will learn what comprises a high-quality research study, explore various research methods and gain understanding of data analysis.
3.00 credit hours. Lecture. RES.405 (Required, Previous); RES.470 (Required, Previous or Concurrent).

RES.490
Respiratory Therapy Capstone
Students will synthesize information from readings and learning modules and progress through the stages of researching and composing a review paper. They will gain further insight into the Respiratory Care profession and reflect on its successes and future challenges.
3.00 credit hours. Lecture. RES.410, RES.420, RES.430, RES.440, RES.450, RES.460 (Required, Previous).

RES.495
Respiratory Care Internship
The student and advisor will develop a learning contract to define how the student will increase their knowledge base and/or improve their skill in a respiratory care specialty area. This course will provide an opportunity for students and their advisors to define activities of their own choosing that will enhance the student's professional development.
3.00 credit hours. Lecture.

Radiologic and Imaging Sciences (RIS)

RIS.701
Leadership and Communication in Radiological Sciences
Students will explore, analyze, and evaluate contemporary concepts of leadership and communication strategies for use in the professional practice of the radiological sciences. Topics will include leadership skills, communication, motivation, human behavior, time management, departmental finances, and reimbursement in the ever-changing health care environment.
3.00 credit hours. Lecture.

RIS.705
Special Considerations in Patient Care
Students will engage in the knowledge and skills needed to connect with patients and others in the healthcare setting both ethically and with respect for to their beliefs, values, and backgrounds.
3.00 credit hours. Lecture.

RIS.710
Professional Practice Trends in Radiologic and Imaging Sciences
Students explore current trends that are reshaping how the radiologic and imaging sciences professions practice. Acquiring practical strategies to manage the changing landscape is critical to expanding the profession. Through peer reviewed articles, case studies, engaged dialogue, and a final project, students will gain the skills to determine if the trends can help organizations and patients for better outcomes.
3.00 credit hours. Lecture.

RIS.720
Imaging: Preclinical and Clinical Research
Students will describe techniques and applications related preclinical imaging before moving into clinical research protocols. Students will gain basic knowledge regarding animal handling, guidelines for ethical conduct in animal research, and understanding the appropriate imaging modality to utilize. Students will study essential components of study design, experimental setup, data evaluation, and image processing in the preclinical and clinical settings.
3.00 credit hours. Lecture.

RIS.730
Applied Research Methodology I
The focus of this course is evidence-based practice. Students will examine how to select and review the appropriate medical literature. Students will conduct a comprehensive literature review on a topic related to the students' interest in the radiologic and imaging sciences. Building on the literature review, students will develop a project that will demonstrate evidence-based research practice in the profession.
3.00 credit hours. Lecture.

RIS.731
Applied Research Methodology II
This is the second in the two-part research methodology course that will focus on research designs and analysis. Students will critique the various research designs. Students will have the opportunity to explore how to critically analyze the data, findings, and results to make informed decisions. In addition, students will engage in a peer-review process.
3.00 credit hours. Lecture.

RIS.750
Teaching and Learning Radiology and Imaging Science Radiological Sciences
Students will explore the learning theories associated with adult learning. Students will examine the philosophies and contemporary models of education and practical application methods that influence learning for clinical practice. In addition, programmatic accreditation will be discussed related to curriculum building and life-long learning within the profession.
3.00 credit hours. Lecture.

RIS.800
Radiologic and Imaging Practicum
In this course, students will spend 80 to 100 hours in an educational or leadership role within or related to health care. Students will apply course work, concepts, and skills from the classroom in a practical setting. Students are required to complete a specific project(s) related to the radiologic and imaging profession based on their interest.
3.00 credit hours. Clinical.

Radiologic Science (RSC)

RSC.110
Medical Terminology for the Radiological Sciences
The course consists of a medical terminology overview with a major emphasis on the radiologic sciences.
1.00 credit hours. Lecture.

RSC.250
Elements of Clinical Care

Clinical care is paramount to caring for patients in radiologic sciences. In this course, students will be introduced to clinical care through the use of case studies, discussions, text materials, and lab practicums. Professional communication, infection control, ethical dilemmas, patient safety, empathy and clinical competency is the focus of this class.
2.00 credit hours. Lecture.

RSC.287
Radiation: Protection and Biology
Presents the basic principles, concepts and procedures of radiation protection and radiobiology. Topics include radiation units, principles of radiation protection, absorbed dose calculations, health physics procedures, radiation exposure regulations, and reduction of radiation exposure to patients, personnel and the environment.
3.00 credit hours. Lecture. PHY.181 or RAD.240 or RTT.280 or RAD.221 (Recommended, Previous).

RSC.301
Global Experiences in Medical Imaging
Students will journey to an international location to explore the ways in which medical imaging is performed, along with how health care is delivered. Procedures and technology not used or performed in the United States will be the focus of this course with the opportunity to visit hospitals and clinics in other countries.
1.00 credit hours. Lecture. NMT.330C, RTT.325C, DMS.302C, DMS.330C, DMS.350, MRI.420C, or RAD.201C (Required, Previous).

RSC.310
Cross Sectional Anatomy
The course will focus on anatomy of the human body as it is viewed in the various axial, coronal, and sagittal planes. Radiologic anatomy will be viewed in the context of illustrations and pictures of gross anatomical sections.
3.00 credit hours. Lecture. BIO.210, CHE.210; MAT.141, MAT.150, MAT.151 or MAT.171; PHY.181, PHY.275 or PHY.270 (Required, Previous).

RSC.315O
CT Imaging-Board Review Course
This is an online course designed to provide students with an overview of CT instrumentation, cross sectional anatomy, imaging procedures, clinical competencies, physics, radiation protection, data analysis, contrast agents and history for board preparation. Students will learn to apply theory to patient imaging, different types of CT equipment, and data acquisition systems.
3.00 credit hours. Lecture. RSC.320, RTT.260, NMT.271, or RAD.240 (Required, Previous).

RSC.320
CT and Cross-Sectional Anatomy
Students will acquire comprehensive knowledge of computed tomography (CT). Students will be able to describe the various concepts related to physics and instrumentation in CT. Identifying various anatomical structures in the CT images is required. Students will also be able to list the parameters for various CT protocols and discuss the importance of patient care, contrast administration, and radiation safety.
3.00 credit hours. Lecture. BIO.210, PHY.181 (Required, Previous).

RSC.325
Clinical Pathophysiology
Students build on prerequisite biological sciences courses and gain foundational knowledge regarding normal and abnormal pathophysiological principles. Students learn the etiology, pathogenesis, and clinical manifestations of selected health problems across the lifespan in diverse populations. Students analyze data for actual and potential pathophysiological processes. Emphasis is given to the analysis of pathophysiological manifestations and related complications of common health problems.
4.00 credit hours. Lecture. BIO.210, MAT.141 or MAT.150 or MAT.151 (Required, Previous).

RSC.330
Research in Radiologic Sciences
Students will acquire the basic knowledge required to become a critical consumer of medical literature, data handling and interpretation, plus the dissemination of the data in this course. Students will identify a research question, identifying hypotheses, complete a literature review on the research topic utilizing peer-review journal articles, and explain their methodology and data analysis plan.
2.00 credit hours. Lecture. LIB.112 (Required, Previous); MAT.261 (Required, Previous or Concurrent).

RSC.340

Success in Radiological Sciences
Students will gain the experience required to build on the knowledge from the associate degree to be successful in a graduate program. Students identify the key components to be successful and to the challenges that may hinder that success. Students will define a personalized value system that will serve as the intrinsic motivation towards academic success.
1.00 credit hours. Lecture.

RSC.410
Advanced Radiation Biology
This advanced course provides an in-depth exploration of ionizing radiation and biological systems. Students will gain a comprehensive understanding of key principles and concepts essential to the study of radiobiology and radiation protection. Through a combination of theoretical knowledge and practical applications, students will develop the skills necessary to assess and mange radiation-related risks in medical, industrial and environmental contexts.
4.00 credit hours. Lecture.

RSC.425C
CT Clinical Internship
This course is designed to allow the students hands-on experience documenting and performing CT exams within the clinical setting under the direct supervision of a registered technologist. This course is competency based, and students will be assessed through competency exams to document the achievement of clinical objectives.
3.00 credit hours. Lecture. RSC.320 (Required, Previous or Concurrent).

RSC.450
Mammography Board Review Assurance
This is an online course designed to provide students with an overview of mammography instrumentation, breast anatomy, imaging procedures, clinical competencies, physics, radiation protection, quality assurance, data analysis, patient care and history for board preparation. Students will learn to apply theory to patient imaging, different types of mammography equipment, and image acquisition systems.
3.00 credit hours. Lecture. RSC.452 (Required, Previous).

RSC.452
Mammography Imaging Procedures and Patient Care
Provides an introduction to patient care and positioning skills specific to mammography. Students are provided with an overview of patient education, routine and advanced mammographic positioning, and radiation safety issues specific to mammography.
3.00 credit hours. Lecture. RSC.450 (Required, Previous or Concurrent).

RSC.456C
Mammography Clinical Internship Positioning and Quality Control Tests
Clinical internship training includes the application of patient care and positioning skills specific to mammography. Students are provided with an overview of patient education, routine and advanced mammographic positioning, radiation safety in mammography and quality control testing.
3.00 credit hours. Clinical. RSC.450, RSC.452 (Required, Previous or Concurrent).

RSC.532
Directed Study in Radiologic Sciences
This course will allow the student additional opportunities to develop the skills necessary to be successful in the Radiologic Sciences program and clinical setting.
1.00 - 6.00 credit hours. Lecture.

Radiation Therapy (RTT)

RTT.262
Technical Aspects of Radiation Therapy
The course focuses on special procedures in radiation therapy, such as proton therapy, VMAT, SBRT, SRS, Arc Therapy, imaging procedures, IGRT. The course also covers pharmacology in radiation oncology, side effects and interventions of therapy, chemotherapy, immunotherapy, infection control and introductory radiation therapy QA and linear accelerator warm-up concepts.
3.00 credit hours. Lecture. RTT.260, RTT.280, RTT.300C (Required, Previous).

RTT.280
Medical Radiation Physics I

This course is a noncalculus examination of the basic concepts and principles in radiation and nuclear physics, including math / classical physics review; radioactive decay, radionuclide production; and x-ray circuitry, particle generators, production, and properties.
3.00 credit hours. Lecture. RSC.325 (Required, Previous); RTT.260 or RTT.360 (Required, Previous or Concurrent).

RTT.281
Medical Radiation Physics II
A continuation of RTT 280. Topics include radioactive decay, high energy treatment machines, particulate/photon interactions, quality of radiation, x-ray intensity and exposure, measurement of radiation, and radiation protection. Emphasizes concepts applicable to radiation therapy.
3.00 credit hours. Lecture. RTT.280 (Recommended, Previous).

RTT.283
Treatment Calculations and Planning
Detailed presentation of principles, aims and techniques of applying radiation to the human body. Covers dose calculation methods, comparison of isodose curves for various radiation energies and beam arrangements, with emphasis on performing calculations.
3.00 credit hours. Lecture. RTT.280 (Recommended, Previous).

RTT.290O
Radiation Therapy Treatment Plan with Lab
In-depth presentation on use of radiation therapy in treatment of cancers covering specific pathologies, including skin cancers, sarcomas, cancers of the digestive tract, female and male reproductive organs, breast cancer and urinary systems. Topics are pertinent anatomy, epidemiology, etiology, signs/symptoms, disease detection, pathology, histology, treatment methods, and prognosis. Companion laboratory course is held at a designated off-campus clinical site.
3.00 credit hours. Lecture. RTT.110, RTT.260, RTT.280 (Required, Previous).

RTT.300C
Radiation Therapy Internship I
Course is part of a radiation therapy clinical internship sequence that provides supervised, competency-based education that includes participation in the practice of radiation therapy. Clinical competency requirements are based on the Radiation Therapy Content Specifications of the American Registry of Radiologic Technologists and program curriculum requirements. Progression in the clinical internship sequence is contingent upon successful completion of this rotation.
4.00 credit hours. Lecture. RSC.110, RSC.250, RSC.325, PHY.181 (Required, Previous).

RTT.325C
Radiation Therapy Internship I
This course is part one of a radiation therapy clinical internship sequence that provides supervised, competency based education that includesparticipation in the practice of radiation therapy. Clinical competency requirements are based on the content specifications of the American Registry of Radiologic Technologists, as well as program curriculum requirements. Progression in the clinical internship sequence is contingent upon successful completion of this rotation.
4.00 credit hours. Lecture. RTT.110, RTT.260, RTT.280, RSC.287 (Required, Previous); RTT.281, RTT.283, RTT.290O (Required, Concurrent).

RTT.340O
Radiation Therapy Quality Assurance and Laboratory
Topics include purposes and principles of a quality assurance program in radiation therapy, quality control procedures, effect of beam geometry on imaging and treatment technique, methods of radiation measurement and machine calibration.
2.00 credit hours. Lecture. RTT.281, RTT.350C (Required, Previous).

RTT.345O
Brachytherapy
Students will examine and understand physical properties, uses, dose calculation methods, and care of sealed source radionuclides used in therapeutic applications of brachytherapy. Surface applicators, interstitial and intra-cavity implants are discussed. Radiation protection as related to radionuclides use is presented.
2.00 credit hours. Lecture. RTT.281, RTT.283, RTT.350C (Required, Previous).

RTT.347
Practical Physics Concepts in Radiation Therapy

Course addresses topics related to brachytherapy and radiation protection. Principal brachytherapy sites of gyn and prostate are covered along with exotics. Students will: review radiobiological considerations of non-standard dose rates; see actual clinical cases using various planning platforms; make treatment molds for complex sites; gain familiarity with the "HotLab" environment; and observe/participate in QA procedures in a radiation oncology department.?
3.00 credit hours. Lecture. RTT.350C (Required, Previous).

RTT.350C
Radiation Therapy Internship III
This course is part two of a radiation therapy clinical internship sequence that provides supervised, competency based education that includesparticipation in the practice of radiation therapy. Clinical competency requirements are based on the content specifications of the American Registry of Radiologic Technologists, as well as program curriculum requirements. Progression in the clinical internship sequence is contingent upon successful completion of this rotation.
8.00 credit hours. Lecture. RTT.325C (Required, Previous).

RTT.360
Foundations of Radiation Therapy with Lab
Students will explore the radiation therapy profession and its role within the healthcare delivery system. Cancer management principles, treatment modalities and diagnosis will be covered. Students will integrate classroom learning with practical knowledge when attending laboratory sessions at a clinical location off campus.
3.00 credit hours. Lecture. RSC.325 (Required, Previous).

RTT.370O
Radiation Therapy Registry Review
The course is a hybrid course, with a combination of face to face meetings and online sessions using Blackboard. The purpose of this class is to provide a review of material that may be on the ARRT examination, and to practice study methods and strategies to successfully pass the exam.
3.00 credit hours. Lecture. RTT.110, RTT.260, RTT.262, RTT.280, RTT.281, RTT.283, RTT.290O, RTT.325C (Required, Previous).

RTT.371
Radiation Therapy Registry Review II
The purpose of this course is to continue providing a review of material that may be on the ARRT examination, and to practice study methods and strategies to successfully pass the examination. The course will include the use of Blackboard LMS and an online mock examination software package.
3.00 credit hours. Lecture. RTT.110, RTT.260, RTT.262, RTT.280, RTT.281, RTT.283, RTT.325C, RTT.370 (Required, Previous); RTT.340O, RTT.345O, RTT.375C (Required, Previous or Concurrent).

RTT.375C
Radiation Therapy Internship III
This course is part three of a radiation therapy clinical internship sequence which provides supervised participation in the practice of radiation therapy. Clinical competency requirements are based on the content specifications to the American Registry of Radiologic Technologists, as well as program curriculum requirements.
8.00 credit hours. Lecture. RTT.350C (Required, Previous).

RTT.400C
Radiation Therapy Internship IV
Course is part of a radiation therapy clinical internship sequence that provides supervised, competency-based education that includes participation in the practice of radiation therapy. Clinical competency requirements are based on the Radiation Therapy Content Specifications of the American Registry of Radiologic Technologists and program curriculum requirements. Progression in the clinical internship sequence is contingent upon successful completion of this rotation.
8.00 credit hours. Lecture. RTT.350C (Required, Previous).

RTT.425C
Radiation Therapy Internship V
Course is part of a radiation therapy clinical internship sequence that provides supervised, competency-based education that includes participation in the practice of radiation therapy. Clinical competency requirements are based on the Radiation Therapy Content Specifications of the American Registry of Radiologic Technologists and program curriculum requirements. Progression in the clinical internship sequence is contingent upon successful completion of this rotation.
8.00 credit hours. Lecture. RTT.400C (Required, Previous).

RTT.532
Directed Study
This course will allow the student additional opportunities to develop the skills necessary to be successful in the Radiation Therapy program and clinical setting.
1.00 - 3.00 credit hours. Lecture.

Acupuncture—Business (SABUS)

SABUS.121
Practice Management: Marketing
Students will learn the importance of advertising, branding, networking, and use of websites and social media. Students will learn issues of running a small business, including accounting, finance, banking, budgeting, financial statements, insurance, and debt management. Participants will develop a vision and business plan for a private practice. This course helps students build businesses that successfully attract and retain patients.
1.00 credit hours. Lecture.

SABUS.122
Practice Managment: Business Skills (Accounting / Finance)
Students will learn issues of running a small business, including accounting, finance, banking, budgeting, financial statements, insurance, and debt management. Participants will develop a vision and business plan for a private practice.
1.00 credit hours. Lecture.

Acupuncture—Chinese Acupuncture Studies (SACAS)

SACAS.270
Clinical Theater
Students consider and integrate the diagnostic methods of TCM and the clinical application of acupuncture techniques by observing patient intakes and treatments performed by NESA faculty. Case discussion follows treatment and incorporates analysis of interview techniques/diagnostic data gathering, diagnosis and treatment strategy development, prognosis, treatment planning, patient communication, patient education, charting and ethics.
1.00 credit hours. Lecture. SACAS.624, SAEXM.620 (Required, Previous or Concurrent).

SACAS.611
TCM Etiology and Pathology I
In this two-course sequence, students learn to diagnose and treat a number of common illnesses from the perspective of TCM. Differentiation of syndromes is emphasized as students learn to identify signs and symptoms. Treatment strategies and point prescriptions are covered for all the conditions. Clinical research findings are included for many conditions, establishing a foundation for evidence-informed practice.
3.00 credit hours. Lecture. SACAS.524, SACAS.537, SACAS.539 (Required, Previous); SACAS.612 (Required, Previous or Concurrent).

SACAS.612
Introduction to Clinical Internship I
Students refine their diagnostic skills by practicing differential diagnosis, researching cases, and presenting case analyses. After establishing diagnoses, students articulate the treatment principles, and identify appropriate treatment plans, including specific point prescriptions and other potential treatments. Under close faculty supervision, students practice needling, point location, and pulse and tongue diagnosis on each other in small groups.
2.50 credit hours. Lecture. SACAS.539, SAEXM.530 (Required, Previous); SACAS.611 (Required, Previous or Concurrent).

SACAS.624
Introduction to Clinical Internship II
Students refine their diagnostic skills by practicing differential diagnosis, researching cases, and presenting case analyses. After establishing diagnoses, students articulate the treatment principles, and identify appropriate treatment plans, including specific point prescriptions and other potential treatments. Under close faculty supervision, students practice needling, point location, and pulse and tongue diagnosis on each other in small groups.
2.50 credit hours. Lecture. SACAS.612 (Required, Previous).

SACAS.626
TCM Etiology & Pathology II
In this two-course sequence, students learn to diagnose and treat a number of common illnesses from the perspective of TCM. Differentiation of syndromes is emphasized as students learn to identify signs and symptoms. Treatment

strategies and point prescriptions are covered for all the conditions. Clinical research findings are included for many conditions, establishing a foundation for evidence-informed practice.
3.00 credit hours. Lecture. SACAS.624 (Required, Previous or Concurrent).

SACAS.636
Microsysytems of Acupuncture Treatment
This course provides an overview of auricular acupuncture, with a focus on the therapeutic potential of these systems within an overall acupuncture treatment or when each modality is used alone, including a map of point locations. Students practice locating and needling microsystem acupuncture points under faculty supervision.
1.00 credit hours. Lecture. SACAS.526 (Required, Previous).

SACAS.717
Clinical Case Management
Designed to address issues and experiences that arise during Clinical Internship, this course explores cases presented by students and faculty. Discussions focus on diagnosis, treatment plan, point selection, the patient-provider relationship, case management and referral. Students review methods and systems for planning, carrying out and evaluating treatments and prognoses.
1.00 credit hours. Lecture. SACLC.636A, SACLC.636B, SACLC.636C (Required, Previous or Concurrent).

SACAS.718
Chinese Nutrition
This introductory course gives students a basic understanding, from a Chinese medical perspective, of the role that food and nutrition play in the healing process. Course topics include the influence of diet on the organ/meridian systems, the five flavors, the thermal nature of foods, the effects of different cooking and preparation methods, and how these can enhance clinical treatment.
1.00 credit hours. Lecture. SACAS.524 (Required, Previous).

SACAS.729
Survey of Chinese Classic Medical Texts
By comparing Chinese medical texts, students begin to develop familiarity with the origins of Chinese medical practice. Through selected readings, students explore the development of acupuncture and Chinese herbal medicine. These readings form the basis for examining treatment strategies in modern clinical settings, and for understanding the conceptual basis of modern Chinese Medicine.
1.00 credit hours. Lecture. SACAS.510 (Required, Previous or Concurrent).

Acupuncture—Chinese Herbal Medicine (SACHM)

SACHM.520
Introduction to Chinese Herbal Medicine
This course introduces the history, development, and application of Chinese herbal medicine. Covered are important traditional and contemporary Chinese herbal texts, and the basic concepts underlying the properties and functions of herbs: the four qis, five tastes, channel entry, functional tendencies, and combination theory. Combining Chinese herbal and acupuncture treatments, toxicity, side effects, and preparation methods are also covered.
2.00 credit hours. Lecture. SACAS.524 (Required, Previous or Concurrent).

SACHM.612
Chinese Herbs II
As a basic foundation for the study of Chinese Herbal Medicine, students study more than 300 individual herbs. To gain a comprehensive understanding of each herb, students learn its name in Pin Yin and English, as well as its botanical name, character, taste, channels, main functions, precautions, and methods of preparation. Recent research pertaining to individual herbs is also covered.
4.00 credit hours. Lecture. SACHM.531 (Required, Previous).

SACHM.613
Chinese Herbal Dispensary Assistantship
By assisting in the NESA Herbal Dispensary, students become more familiar with the properties of individual raw Chinese herbs. Students practice preparing raw and powdered Chinese herbal formulas prescribed by practitioners and interns. Students also learn proper herb storage and handling techniques, and how to assess the quality of raw and powdered herbs.
0.00 credit hours. Laboratory. SACHM.520 (Required, Previous).

SACHM.624
Chinese Herbal Formulas I

Students learn more than 150 Chinese herbal medicine formulas by their Pin Yin and English names, constituent ingredients, how those ingredients relate and interact, the primary and secondary functions of each formula, possible modifications, dosage, clinical applications, and contraindications. Formulas readily available as patent medicines are also covered.
4.00 credit hours. Lecture. SACHM.612 (Required, Previous).

SACHM.635
Chinese Herbal Formulas II
Students learn more than 150 Chinese Herbal Medicine formulas by their Pin Yin and English names, constituent ingredients, how those ingredients relate and interact, the primary and secondary functions of each formula, possible modifications, dosage, clinical applications, and contraindications. Formulas readily available as patent medicines are also covered.
4.00 credit hours. Lecture. SACHM.624 (Required, Previous); SACHM.636 (Required, Previous or Concurrent).

SACHM.636
CHM: Patent Herbal Medicines
This course covers patent formulas, produced by various companies, which are most commonly used in the United States today, including modern adaptations of classic formulas. Discussed are the composition of the patents, functions of the classic formula bases, and comparison of modifications used in various brands. Students learn to select the most appropriate products to achieve optimum treatment results.
2.00 credit hours. Lecture. SACHM.624 (Required, Previous); SACHM.635 (Required, Previous or Concurrent).

SACHM.717
CHM: Internal Medicine I
This course explores the theoretical basis of Chinese herbal treatments for various internal medicine conditions such as cough, asthma, diarrhea, constipation, jaundice, hypertension, diabetes, edema and others. Special emphasis is placed on understanding the theoretical basis of diagnosis, and selecting and modifying formulas.
4.00 credit hours. Lecture. SACHM.635 (Required, Previous); SACHM.718 (Required, Previous or Concurrent).

SACHM.718
CHM: Formula Writing
This course introduces students to writing individual Chinese Herbal Medicine formulas. Students begin by working with simple formulas and progress to more complex formulas throughout the course. Building on the base formulas learned in CHM: Formulas I and II, students learn the elements of formula modification, including dosage, specifically as it relates to chronicity and severity of patient pathology (etc.)
2.00 credit hours. Lecture. SACHM.635 (Required, Previous); SACHM.717 (Required, Previous or Concurrent).

SACHM.729
CHM: Internal Medicine II
This course explores the theoretical basis of Chinese herbal treatments for various internal medicine conditions such as cough, asthma, diarrhea, constipation, jaundice, hypertension, diabetes, edema and others. Special emphasis is placed on understanding the theoretical basis of diagnosis, and selecting and modifying formulas.
4.00 credit hours. Lecture. SACHM.717 (Required, Previous).

SACHM.735
CHM: Classical Texts
This course will introduce the CHM classic theory and works of Chinese medicine. Focus on the three classics: Shang Han Lun (On Cold Damage), Jin Gui Yao Lue (The Golden Chamber), and Wen Bing Xue (The Febrile Diseases). The selected classical texts will be reviewed and cases from different books will also be shared and discussed.
2.00 credit hours. Lecture.

Acupuncture—Clinical (SACLC)

SACLC.511
Clinical Assistantship I
The clinical assistantship program provides students the opportunity to observe the practice of acupuncture and Chinese Herbal Medicine within various clinical settings. Students observe practitioners diagnose and treat patients. During the first two years of the program, MAc students complete 150 hours and MAC CHM students complete 180 hours observing and assisting licensed acupuncturists, Chinese Herbal Medicine practitioners and NESA interns.
1.00 credit hours. Clinical. SACAS.513 (Required, Previous or Concurrent).

SACLC.533
Clinical Assistantship III

Students observe practitioners, obtaining a close-up view of acupuncture and Chinese herbal medicine within clinical settings. Students are exposed to different treatment styles and professional approaches, thus enhancing the student's current studies. Students begin to assimilate the knowledge acquired in the classroom and practical sessions at NESA. Students gain a better understanding of the commitment, challenges, and ultimate satisfaction that accompany sustaining a TCM practice. Students also begin reflecting on practice. Under practitioner supervision, students practice taking patient pulses, inspecting patient tongues and supporting the practitioner in making patients feel welcome and comfortable.
1.00 credit hours. Clinical.

SACLC.600
Clinical Assistantship VI
Students observe practitioners, obtaining a close-up view of acupuncture and Chinese herbal medicine within clinical settings. Students are exposed to different treatment styles and professional approaches, thus enhancing the student's current studies. Students begin to assimilate the knowledge acquired in the classroom and practical sessions at NESA. Students gain a better understanding of the commitment, challenges and ultimate satisfaction that accompany sustaining a TCM practice. Students also begin reflecting on practice. Under practitioner supervision, students practice taking patient pulses, inspecting patient tongues and supporting the practitioner in making patients feel welcome and comfortable.
1.00 credit hours. Clinical.

SACLC.614
Clinical Assistantship IV
Students observe practitioners, obtaining a close-up view of acupuncture and Chinese herbal medicine within clinical settings. Students are exposed to different treatment styles and professional approaches, thus enhancing the student's current studies. Students begin to assimilate the knowledge acquired in the classroom and practical sessions at NESA. Students gain a better understanding of the commitment, challenges, and ultimate satisfaction that accompany sustaining a TCM practice. Students also begin reflecting on practice. Under practitioner supervision, students practice taking patient pulses, inspecting patient tongues and supporting the practitioner in making patients feel welcome and comfortable.
0.50 - 2.00 credit hours. Clinical.

SACLC.625
Clinical Assistantship V
Students observe practitioners, obtaining a close-up view of acupuncture and Chinese herbal medicine within clinical settings. Students are exposed to different treatment styles and professional approaches, thus enhancing the student's current studies. Students begin to assimilate the knowledge acquired in the classroom and practical sessions at NESA. Students gain a better understanding of the commitment, challenges, and ultimate satisfaction that accompany sustaining a TCM practice. Students also begin reflecting on practice. Under practitioner supervision, students practice taking patient pulses, inspecting patient tongues and supporting the practitioner in making patients feel welcome and comfortable.
0.50 - 2.00 credit hours. Clinical.

SACLC.636A
Clinical Internship CAS I
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SAPRD.635 (Required, Previous or Concurrent).

SACLC.636B
Clinical Internship CAS II
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SAPRD.635 (Required, Previous or Concurrent).

SACLC.636C
Clinical Internship CAS III
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including

intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SAPRD.635 (Required, Previous or Concurrent).

SACLC.700
Special Clinical Rotation: Cleveland Clinic
The Cleveland Clinic Center for Integrative Lifestyle Management is a state-of-the art outpatient clinic located on the campus of the Cleveland Clinic. Equipment related to patient care is provided by the institution.
1.00 credit hours. Clinical. SACLC.511, SACLC.522 (Required, Previous or Concurrent).

SACLC.710
Clinical Internship: Focused Placement I
Having extensively practiced clinical assessment treatment skills, student interns work with patients in specialized clinical settings including community acupuncture, detox centers, assisted living centers and homeless shelters. Under close faculty supervision, interns assume responsibility for patient care, including evaluations, diagnoses, treatment planning, carrying out treatments, assessing progress. Interns advise patients on healthy lifestyle practices, arrange follow-up care and make referrals.
1.00 credit hours. Clinical. SACAS.635, SACLC.625 (Required, Previous).

SACLC.717A
Clinical Internship CAS IV
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.717B
Clinical Internship CAS V
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.717C
Clinical Internship CAS VI
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.720
Clinical Internship: Focused Placement II
Having extensively practiced clinical assessment treatment skills, student interns work with patients in specialized clinical settings including community acupuncture, detox centers, assisted living centers and homeless shelters. Under close faculty supervision, interns assume responsibility for patient care, including evaluations, diagnoses, treatment planning, carrying out treatments, assessing progress. Interns advise patients on healthy lifestyle practices, arrange follow-up care and make referrals.
1.00 credit hours. Clinical. SACLC.710 (Required, Previous).

SACLC.728A
Clinical Internship CAS VII
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.728B
Clinical Internship CAS VIII

Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.728C
Clinical Internship CAS IX
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.739A
Clinical Internship CAS X
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.739B
Clinical Internship CAS XI
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.739C
Clinical Internship CAS XII
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SACAS.635 (Required, Previous or Concurrent).

SACLC.822A
Advanced Acupuncture Integrative Pain Management Clinic
Advanced Acupuncture Integrative Pain Management Clinic
2.00 credit hours. Lecture.

SACLC.822B
Advanced Acupuncture Integrative Pain Management Clinic
Advanced Acupuncture Integrative Pain Management Clinic
2.00 credit hours. Lecture.

SACLC.AA30
Clinical Assistantship
The clinical assistantship program provides students the opportunity to observe the practice of acupuncture and Chinese Herbal Medicine within various clinical settings. Students observe practitioners diagnose and treat patients. During the first two years of the program, MAc students complete 150 hours and MAC CHM students complete 180 hours observing and assisting licensed acupuncturists, Chinese Herbal Medicine practitioners and NESA interns.
1.00 credit hours. Clinical. SACAS.513 (Required, Previous or Concurrent).

SACLC.AA45
Clinical Assistantship
The clinical assistantship program provides students the opportunity to observe the practice of acupuncture and Chinese herbal Medicine within various clinical settings. Students observe practitioners diagnose and treat patients. During the first two years of the program, MAc students complete 150 hours and MAc CHM students complete 180 hours observing and assisting licensed acupuncturists, Chinese herbal medicine practitioners and NESA interns.

1.50 credit hours. Clinical. SACAS.526 (Required, Previous or Concurrent).

SACLC.CAS13
Clinical Internship CAS XIII
Having extensively practiced clinical assessment and treatment skills, student interns begin to work directly with patients in clinical settings. Under close faculty supervision, interns assume responsibility for patient care, including intake evaluations, diagnoses, structuring treatment plans, carrying out treatments, and assessing progress. Interns also advise patients on healthy lifestyle practices, arrange follow-up care, and make referrals
2.00 credit hours. Clinical. SAEXM.620 (Required, Previous); SAPRD.635 (Required, Previous or Concurrent).

SAEL.450I
ST: TCM Applied Channel Theory
Special Topics course. This online class will provide an introduction to the acupuncture channel system as a model for physiology and pathology in the clinic. Primarily, the class will draw from the historical and clinical research of the late professor Wang Ju Yi. Beginning with a systemic introduction to 'six channel' physiology as elucidated in early classical sources, the class will then re-evaluate zang-fu diagnosis using this sytems-based model. Students will reconsider the anatomical nature of the acupuncture channels and points, organ function and palpation as a diagnostic tool.
2.00 credit hours. Lecture.

Acupuncture—Elective (SAEL)

SAEL.450J
ST: TCM Cosmetic Acupuncture
Special Topics course. This course will cover the foundation of the facial aging and aging conditions from an Eastern and Western medicine perspective. Treatment strategies, protocols, and point prescriptions will be provided. Topics include Western medical approach to facial acupuncture, anatomy of the head, neck, and face, vessels and nerves of the head, neck, and face, morphology of the aging face, causes of facial aging, analyzing the aging face, treating the aging face, ancillary treatment (gua sha, cupping, micro-needling, etc.), integrating cosmetic facial acupuncture into your practice, and more.
1.00 credit hours. Lecture.

SAEL.450L
ST: Chinese Herbal Medicine
Special Topics course. This course will build on formulas already introduced in the curriculum and apply them to the treatment of chronic pain, bi syndrome, and Shen disorders (anxiety, insomnia and depression), discussing the diagnostic patterns of formula groups with case studies. Focus will be on very clear diagnosis of both constitution and presentation, and on the most clinically useful formulas. Strategies for treating acute trauma using internal and external herbal medicine applications will also be introduced.
2.00 credit hours. Lecture.

SAEL.450M
ST: Acupuncture in Oncology
Special Topics course. This course provides an overview of how acupuncture is used during cancer support. Students learn about common cancer diagnoses and treatments and how acupuncture can help support patients. Common psycho-emotional aspects of cancer and how TCM can address them are also explored. Students analyze cases to determine best diagnoses, treatment strategies, and point prescriptions.
2.00 credit hours. Lecture. SACAS.626, SACAS.624 (Required, Previous).

SAEL.450N
ST: Channel Theory Application
Special Topics course. This course provides students with hands-on instruction in channel palpation techniques used by Dr. Wang Ju-Yi in Applied Channel Theory. We will explore how the various palpable changes reflect the physiology of the 6 channel-organ systems and help us better understand our patients' symptoms. This nuanced practice encourages our curiosity as practitioners and points us towards more clear diagnoses and treatment plans.
1.00 credit hours. Lecture. SAEL.450I or SACAS.538 (Required, Previous).

SAEL.450O
ST: Self-Care Elective
Special Topics course. This course introduces students to three of the most significant internal arts (Neijia Quan) of China: Taiji Quan (Tai Chi), Bagua Zhang and Xing Yi Quan. These arts have a strong connection to Chinese medicine and will be helpful for students to enhance both their understanding of TCM and their overall wellbeing.
1.00 credit hours. Lecture.

SAEL.450P
ST: Spirit of 5 Elements
Special Topics course. Five Element correspondences offer us insight into the nature within us. Each of these elements has a spirit that represents aspects of human awareness and consciousness, that can open doorways to the inner self. In this elective we will explore these elements and their spirits through dialogue, discussion and exercises.
1.00 credit hours. Lecture. SACAS.524 (Required, Previous).

SAEL.450Q
ST: NCCAOM Preparation 1
Special Topics course. The first in a 2-course series, this course is designed to prepare students for the Acupuncture with Point Location and the Foundations of Oriental Medicine Exams administered by the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM). Exam content and study strategies are covered with weekly topics and quizzes. The NCCAOM exam content and the Acupuncture Media NCCAOM Review Course content will be explored, including using recordings, handouts and practice exams.
1.00 credit hours. Lecture. SAPRD.635 (Required, Previous).

SAEL.450R
ST: NCCAOM Preparation 2: Biomedicine
Special Topics course. This course is designed to prepare students for the Biomedicine exam administered by the National Certification for Acupuncture and Oriental Medicine (NCCAOM). Exam content and study strategies are covered with weekly topics and quizzes. The NCCAOM exam content and the Acupuncture Media NCCAOM Review Course content will be explored, including using recordings, handouts and practice exams.
1.00 credit hours. Lecture. SAPRD.635 (Required, Previous).

SAEL.450S
ST: NCCAOM Preparation 3: Herbology
Special Topics course. This course is designed to prepare students for the Chinese Herbology exam administered by the National Certification for Acupuncture and Oriental Medicine (NCCAOM). Exam content and study strategies are covered with weekly topics and quizzes. The NCCAOM exam content and the Acupuncture Media NCCAOM Review Course content will be explored, including using recordings, handouts and practice exams.
1.00 credit hours. Lecture. SAPRD.635 (Required, Previous).

SAEL.450T
ST: TCM Reproductive Medicine
Special Topics course. This elective course provides an advanced exploration in the specialty Traditional Chinese Medicine gynecology and sperm factor infertility. Students will integrate core concepts, diagnostic frameworks, and acupuncture techniques to address uterine and reproductive health including endometriosis, PCOS, dysmenorrhea, infertility, pregnancy, childbirth and postpartum. Emphasis is placed on integrative care and adapting care to cultural beliefs for effective, evidence-based healthcare outcomes.
2.00 credit hours. Lecture. SACAS.626 (Required, Previous).

SAEL.450U
ST: Acupuncture in Oncology
Special Topics course. This course gives an overview of acupuncture treatment for cancer support. Students learn common cancer diagnoses, treatments and how acupuncture can support patients during their cancer journey. Students learn common psycho-emotional aspects of cancer and how TCM can address them. Students analyze cases to determine best diagnoses, treatment strategies, and point prescriptions.
1.00 credit hours. Lecture. SACLC.636A (Required, Previous or Concurrent).

SAEL.450V
ST: NCCAOM Preparation - Foundations
Special Topics course. This course is designed to prepare students for the Foundations National Certification for Acupuncture and Oriental Medicine (NCCAOM) exam. Exam content and study strategies are covered with weekly topics and quizzes. The NCCAOM exam content and the Acupuncture Media NCCAOM Review Course content will be explored, including using recordings, handouts and practice exams. Prerequisite: SACAS.635 Patient-Provider Relationship
1.00 credit hours. Lecture. SACLC.636A (Required, Previous or Concurrent).

SAEL.450W
ST: NCCAOM Preparation for Acupuncture with Point Location
Special Topics course. This course is designed to prepare students for the Acupuncture with Point Location National Certification for Acupuncture and Oriental Medicine (NCCAOM) exam. Exam content and study strategies are covered

with weekly topics and quizzes. The NCCAOM exam content and the Acupuncture Media NCCAOM Review Course content will be explored, including using recordings, handouts and practice exams. Prerequisite: SACAS.635 Patient-Provider Relationship
1.00 credit hours. Lecture. SACLC.636A (Required, Previous or Concurrent).

SAEL.DS1
Directed Study I
Faculty-directed study is provided to an individual student wishing to examine a specific topic.
1.00 credit hours. Lecture.

SAEL.DS2
Directed Study II
Faculty-directed study is provided to an individual student wishing to examine a specific topic.
2.00 credit hours. Lecture.

SAEL.DS3
Directed Study III
Faculty-directed study is provided to an individual student wishing to examine a specific topic.
3.00 credit hours. Lecture.

Acupuncture—Exam (SAEXM)

SAEXM.620
Second Year Comprehensive Exam
0.00 credit hours. Lecture.

SAEXM.620R
Second Year Comprehensive Exam (Retake)
0.00 credit hours. Lecture.

SAEXM.710
CHM Comprehensive Exam
0.00 credit hours. Lecture.

Acupuncture—Japanese Acupuncture Studies (SAJAS)

SAJAS.532
Japanese Acupuncture II
This course provides students with the theoretical foundations and application of two predominant therapeutic styles of Japanese acupuncture: Meridian Five Phase and the Extraordinary Vessels. Through lecture and practice, students learn to diagnose using pulse and abdominal palpation, in combination with visual and verbal signs and symptoms, and practice needling and moxibustion techniques. Students refine diagnostic skills and increase sensitivity.
2.00 credit hours. Lecture. SAJAS.521 (Required, Previous).

SAJAS.613
Japanese Acupuncture III
This course provides students with an expanded and continued outlook of root treatment strategies, and incorporates an in-depth study of detailed clinical applications through case review. The hands-on portion of the course will promote the ability to diagnose JAS Meridian Five Phase, Extraordinary Vessels and Extra Channel Polarizations.
2.00 credit hours. Lecture. SAJAS.532 (Required, Previous).

SAJAS.624
Japanese Acupuncture IV
Based on classical theories of Chinese Medicine and modern information about disease and healing, this course focuses on the application of techniques used to resolve symptoms. Through the practice of careful palpation and the consideration of diagnostic and treatment points, students learn the most appropriate techniques for achieving symptomatic change
2.00 credit hours. Lecture. SAJAS.613 (Required, Previous).

SAJAS.635
Japanese Acupuncture V
This course prepares students for Japanese acupuncture clinical internship. Students practice Meridian Five Phase and Manaka ion pumping cord style diagnosis and treatment. Students practice intakes, diagnosis, and treatment skills

on each other in small, faculty-supervised groups, which simulate the clinical setting. This intensive practice allows students to refine their Japanese acupuncture and treatment planning skills.
2.00 credit hours. Lecture. SACAS.624, SAJAS.613 (Required, Previous).

Acupuncture—Professional Development (SAPRD)

SAPRD.635
Patient-Provider Relationship
Students learn skills for building rapport and trust, for communicating effectively, and for coaching patients in adherence with healthy behaviors. Students learn basic psychological health assessment, and when referral for further assessment is indicated. Topics covered include suicide risk, substance use disorder, and survivors of trauma or abuse. Fundamental self-awareness tools are identified, fostering self-care of the healer.
3.00 credit hours. Lecture. SASCI.620, SACAS.624 (Required, Previous); SACLC.636A (Required, Previous or Concurrent).

SAPRD.710
Research Design and Evaluation
This course examines different qualitative and quantitative research. The assumptions underlying the broad traditions of research design selection and methodological considerations are discussed. Current literature on acupuncture research is discussed, providing an understanding of the special problems and requirements of modern acupuncture research. Students learn important research concepts, vocabulary and methods, and how to formally report research findings.
3.00 credit hours. Lecture.

SAPRD.711
Practice Management: Marketing and Business
Students will learn the importance of advertising, branding, networking, and use of websites and social media. Students will learn issues of running a small business, including accounting, finance, banking, budgeting, financial statements, insurance, and debt management. Participants will develop a vision and business plan for a private practice. This course helps students build businesses that successfully attract and retain patients.
2.00 credit hours. Lecture. SACAS 636 (Required, Previous).

SAPRD.722
Practice Management: Acupuncture Professional Issues
Students will learn business issues specific to the acupuncture profession, including usage of acupuncture in the US, credentialing, competition, insurance coding, and billing. Guest speakers will describe their successful practices. This course is taught during spring term for third year students.
1.00 credit hours. Lecture. SABUS.711 (Recommended, Previous).

SAPRD.810
Professional Development: Lifelong Learning
This course supports students in initiating the transition from student to integrated healthcare provider. Student will develop an individualized professional portfolio and plan. Emphasis will be on self-evaluation. Students will develop and submit 1, 5 and 10-year plans, supplemented with specific, attainable steps to take to achieve their goals. Strategies for incorporating and maintaining self-cultivation practices will be included.
2.00 credit hours. Lecture.

Acupuncture—System Based Medicine (SASBM)

SASBM.812
System-Based Medicine: Collaborative Care
This course covers best practices in inteprofessional communication in healthcare, and applies them to the successful integration of acupuncturists into allopathic settings. Specific strategies related to communicating TCM concepts in allopathic setting are covered. Understanding how teams form, define roles, communicate, share decision-making and manage conflict are relevant to integration of acupuncturists in these settings.
2.00 credit hours. Lecture.

Acupuncture—Science (SASCI)

SASCI.511
Anatomy and Physiology I
Using a systematic approach to human anatomy and physiology, this course focuses on the normal functioning of the human body. Students study the skeletal, muscular, endocrine, respiratory, cardiovascular, digestive, reproductive, urinary, and nervous systems.

3.00 credit hours. Lecture.

SASCI.511L
Anatomy and Physiology I Lab
This lab provides a hands-on experience of human anatomy, focusing on the skeleton, muscles, brain, nervous system, heart, and organs of the digestive system. This lab supplements the learning experiences of Anatomy & Physiology I & II, and meets the Massachusetts acupuncture licensure requirement of a lab in Biology or Anatomy.
1.00 credit hours. Lecture. SASCI.511 (Required, Previous or Concurrent).

SASCI.610
Chemistry for the Health Sciences
This course examines selected topics in inorganic, organic, and biochemistry in preparation for courses in microbiology, nutrition, and pathology. The course will help the student obtain an understanding of the attitudes, methods, and theories by which chemistry attempts to explain basic chemical phenomena within the body.
3.00 credit hours. Lecture.

SASCI.617
Acupuncture Integrative Pain Management II
In this course students explore how pain is assessed, quantified, and communicated, in addition to how the individual, the health system, and society affect these activities. This course focuses on collaborative approaches to decision-making, diversity of treatment options, the importance of patient agency, risk management, flexibility in care, and treatment based on appropriate understanding of the clinical condition.
2.00 credit hours. Lecture. SASCI.537 (Required, Previous); SACAS.612 (Required, Previous or Concurrent).

SASCI.619
Western Pathophysiology & Pharmacology I
This course sequence provides a biomedical overview of common disorders for each major body system. Provided for each disease are the physiological process, key symptoms, diagnostic testing, and treatment. Pharmaceuticals are covered according to their category, effect on physiological functions, and possible interactions and side effects. Emphasis is placed on identifying emergency conditions that require immediate referral to a biomedical provider.
3.00 credit hours. Lecture.

SASCI.620
General Psychology
This course surveys historical and contemporary approaches to the scientific study of human behavior. It provides an introduction to sensation, perception, and emotion; human development and learning; and personal and social influences on behavior, personality and psychopathology.
3.00 credit hours. Lecture.

SASCI.627
Acupuncture Integrative Pain Management III
In this course students explore how pain is assessed, quantified, and communicated, in addition to how the individual, the health system, and society affect these activities. This course focuses on collaborative approaches to decision-making, diversity of treatment options, the importance of patient agency, risk management, flexibility in care, and treatment based on appropriate understanding of the clinical condition.
2.00 credit hours. Lecture.

SASCI.629
Western Pathophysiology and Pharmacology II
This course sequence provides a biomedical overview of common disorders for each major body system. Provided for each disease are the physiological process, key symptoms, diagnostic testing, and treatment. Pharmaceuticals are covered according to their category, effect on physiological functions, and possible interactions and side effects. Emphasis is placed on identifying emergency conditions that require immediate referral to a biomedical provider.
3.00 credit hours. Lecture. SASCI.619 (Required, Previous).

SASCI.639
Western Pathophysiology and Pharmacology III
This course sequence provides a biomedical overview of common disorders for each major body system. Provided for each disease are the physiological process, key symptoms, diagnostic testing, and treatment. Pharmaceuticals are covered according to their category, effect on physiological functions, and possible interactions and side effects. Emphasis is placed on identifying emergency conditions that require immediate biomedical communication and referral.
3.00 credit hours. Lecture. SASCI.629 (Required, Previous).

SASCI.710
Introduction to Public Health
2.00 credit hours. Lecture.

SASCI.720
Western Nutrition
In this introductory course, students receive an overview of the healing properties of foods, nutrients such as vitamins and minerals, and specific diets. The functions of various nutrients, in what foods they are found, and how they impact health are discussed. Students gain an understanding of the clinical uses of specific diets and nutritional supplements used by many holistic practitioners.
1.00 credit hours. Lecture.

SASCI.729
Patient Assessment
This course trains students in the history-taking and physical examination process. Students will create a safe, patient-centered environment, conduct and document comprehensive health assessments, and analyze clinical findings. Emphasis is placed on effective communication, multicultural sensitivity, and accurate use of medical terminology to ensure clear documentation and culturally competent, high-quality patient care.
2.00 credit hours. Lecture.

SASCI.730
Microbiology
This practical course for health care practitioners focuses on the microorganisms relevant to clinical practice, the body's defense responses, methods of preventing disease transmission, and the characteristics, activities, distribution, and effects of specific pathogenic organisms on the human body.
3.00 credit hours. Lecture.

SASCI.731
Physics
This introductory course follows the historical evolution of physics. After an introduction to mechanics, students investigate electrostatics, electricity, magnetism, light, and contemporary physics. Students develop an understanding of how physical laws relate to the world. Students also learn assessment techniques, including quantitative reasoning and conceptual problem solving.
2.00 credit hours. Lecture.

SASCI.737
Physiology of Acupuncture
Students will understand physiologic mechanisms and effects of acupuncture as the basis for communication with other healthcare professionals and patients, examining the effects of acupuncture on pain, stress, and inflammation. Students will evaluate a hypothesis that acupuncture acts as a signaling system via the network of fascia throughout the body and explore effects observed in the brain through neuroimaging research.
2.00 credit hours. Lecture. SASCI.619, SASCI.629 (Required, Previous); SASCI.639 (Required, Previous or Concurrent).

SASCI.813
Advanced Acupuncture Integrative Pain Management I
Students learn to navigate an interprofessional work environment and champion acupuncture's role in healthcare. Through presentations from diverse healthcare professionals/faculty and their related activities, students learn about roles and responsibilities of each profession and identify pathways toward enhancing a team-based care model. Identifying effective provider-specific communication strategies will help acupuncturists position themselves as an integral member of the healthcare team.
2.00 credit hours. Lecture. SASBM.812 (Required, Previous).

SASCI.820
Advanced Diagnostic Studies
Course outlines principles/applications of diagnostic imaging equipment, laboratory and other diagnostic tests and tools. Students learn clinical indications and risks/benefits of relevant diagnostic procedures, how to interpret findings from diagnostic reports, and how to utilize them to effectively communicate with patients and with other healthcare providers. Course covers relevant laws and regulations that affect use of tests by an acupuncturist.
2.00 credit hours. Lecture.

SASCI.821
Advanced Acupuncture Integrative Pain Mangement II
Advanced Acupuncture Integrative Pain Management
2.00 credit hours. Lecture.

Social Sciences (SSC)

SSC.230
Cultural Anthropology
An introduction to the concepts, principles, and major areas of anthropology. The course focuses on the similarities and differences among the world's peoples. A variety of topics are studied, including symbolic anthropology, religion, kinship, social organization, ecology, and economics.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.330
Introduction to Black Studies
An introduction to foundational concepts, frameworks, thinkers, and texts of the interdisciplinary field of Black studies. Centering the social, cultural, and political experiences and contributions of peoples of African descent in historical perspective, this course applies an intersectional lens to understand race-specifically Blackness-as a social construct with profound implications regarding autonomy, rights, power, and personhood in the U.S.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.335
Conflict and Communication
Through communication, conflict begins, is avoided or resolved. It is important to understand conflict, because it powerfully affects the quality and functioning of interpersonal relationships and groups in multiple settings. In this course students learn about and investigate communication and conflict though activities including the observation and analysis of real conflict interactions.
3.00 credit hours. Lecture. LIB.220 (Required, Previous).

SSC.340O
Survey of Modern American History
An introductory survey of U.S. history from 1860 to the present. Selected historicalthemes and problems are studied in depth.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.341O
History of Western Civilization I
A study of Western civilization from its origins in the Near East through the development of the Greek, Roman, andmedieval worlds. The rise of European nation-states from the Middle Ages to the Reformation is examined.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.342O
History of Western Civilization II
A study of Western European social, political, cultural and intellectual traditions and economic development from the Reformation to 1890. Western Civilization I is not a prerequisite.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.343
The Black Freedom Struggle in the United States
Students examine the history of Black liberation struggles in the United States, particularly during the 1950s and 1960s. Students will utilize primary sources including speeches, oral histories, images, and music to consider how organizations and activists have conceptualized and advanced demands for freedom, justice, equality, and civil rights. Topics include legal segregation, voting rights, economic justice, and Black Power.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.345
Immigrant Experience
This course explores the history of immigration to the United States from 1790 to the present. Goals include developing an understanding of the continual role migration has played in the peopling of the United States and of the ways in which newcomers have experienced life in America. Topics include family, community, ethnic identity, work, assimilation, nativism, and immigration reform.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.349
Introduction to Women's and Gender Studies Perspectives
In this course students will use multiple perspectives and theories to explore intersections of gender with race, ethnicity, sexuality, and class in the context of key issues, questions and debates in contemporary American society. These include gender as a social category, sexuality, gendered divisions of labor, representations of the body in art and popular culture, health, and politics.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.351
Group Communication
Through communication, groups determine facts, define and analyze problems, and generate, evaluate and implement solutions. Issues arise such as conflict, lack of cohesion, and groupthink, which impact communication in settings such as healthcare. Students learn about these and other topics by interacting in groups, analyzing actual group interaction, and reviewing group communication research literature.
3.00 credit hours. Lecture. LIB.220 (Required, Previous).

SSC.353
Shattering the Glass Slipper: The Evolution of the Fairy Tale Heroine in American Culture
Students will study the evolution of female characters in fairy tales and legends within the social and cultural context of the U.S. since the 1930s, specifically heroines and princesses in animated films. Topics include Disney's appropriation and reinvention of European and non-European stories; race, class, culture and story-telling; socialization of children; beauty and body image; romance; heroes and villainesses.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.355
Persuasion and Social Influence Perspectives
Students will learn how to define social influence, distinguish between its types and describe the ethical issues social influence raises. Further, they will learn to identify and use the available means of social influence in a given situation, and identify the means for counteracting or guarding against influence attempts. They will do so from an interpersonal, social scientific perspective.
3.00 credit hours. Lecture. LIB.112 (Required, Previous).

SSC.356
The Politics of Food
Students will examine the historical manifestations, sociological and cultural implications, and environmental consequences of food politics in the United States. Topics include identity and food choice; gender and food production and consumption; factory farming; fast food; obesity; cultural homogenization and corporatization; genetically-modified organisms; hunger and malnutrition; food-centered campaigns for social justice; and the environmental consequences of our increasingly globalized food system.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.420
20th Century Popular Music and Culture
Students will develop an understanding of 20th-century popular music's evolution in American history. The course's focus is the relationship between popular music and race, class, gender, politics, generations, identity, sexuality, technology, consumption, and globalization. Students will develop critical listening skills and the ability to communicate different approaches to the study of popular music.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.430
The Fifties: An Introduction to American Studies
Studies the cultural patterns, social tensions, and historical tendencies in the 1950s. Readings and media survey the cold war, atomic culture, McCarthyism, civil rights, gender and family, affluence and material culture, literature, the arts, and popular culture.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.431
The Sixties: An Introduction to American Studies
This course examines American cultural, social, and political patterns and tensions in the historical context of the 1960s through an application of American studies frameworks and methodologies. Students analyze the convergence of political and cultural forces as manifested in social protest movements, the black freedom struggle, the Vietnam War,

feminism and gay liberation, popular culture, the arts, and changes in everyday life to assess both the contours of historical change and the evolving legacies of the 1960s in 21st-century America.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.432
Medical Anthropology
The course is comparative and holistic, focusing on culture and its influence on disease and healthcare. The significance of sociocultural factors, type/frequency of disease in a population, explanatory models, and the social construction of illness are explored.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.435
Cultural Geography
An interdisciplinary approach to the study of regional world geography with an emphasis on human cultures and their relationships with the natural world. Examines human cultural features such as population, migration patterns, gender relations, and economics as well as the physiographic features of each region. Topics include water management across the globe, deforestation and infectious disease, and urban racial segregation.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.436
Archaeology of the Dead
Mummies, bog bodies, and frozen sacrificial victims. A buried queen, traveling archer, and long-lost king. Human remains are integral to understanding the past. This course covers how archaeologists study anatomical remains to determine the time period of death, age, sex, pathology, diet, and cultural practices. Students learn how treatment of bodies gives insights into gender, social inequality, and human difference.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.437
Sports, Exercise, and American Society
This course examines the evolution of American sports and exercise from the 18th century to the present, with a focus on popular perceptions of fitness, exercise, and health. Topics of study include colonial era children's play, boxing and male sporting culture, debates about race and sports, diet and exercise fads, Title IX, and the commercialization of college sports.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.440
Women in History
This course focuses on the historical context of economic, political, social, and cultural issues that have affected women. Such themes as gender roles, status, class, position, myths, stereotypes, and images of women in culture are explored.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.444
Cigarettes in American Culture
This course analyzes the cultural meaning of the cigarette in the 20th-century United States by considering the rise and fall in cigarette consumption, scientific study of tobacco harms, production and marketing, policymaking, and litigation concerning the tobacco industry.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.445O
The Irish in America: Exile, Exclusion, and Ethnic Identity
Students study significant moments in Irish-American history and learn to interpret Irish-American identity. Students will discover, analyze, and critically assess historical, social, and cultural issues involving an enduring Irish immigration, Diaspora, and negotiation of Irish-American ethnic identity. They will learn to assess social struggle, social tension, and cultural expressions of Irish and/or Irish-American identity learning about Irish contributions to America.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.452
Urban History
This course explores the evolution of American cities. We will examine many factors that shape urban development and lifestyles, including immigration, interactions between peoples of different cultures and classes, and how urban

dwellers have experienced and responded to a variety of issues (health, poverty, local politics, housing, conflict) and natural and man-made disasters.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.464
Social Justice Movements in the U.S.
This course examines social justice movements in the post-World War II U.S. Students will study a variety of major and grassroots movements including those focused on race and ethnicity, gender, sexuality, anti-war, the environment, and developing contemporary issues. Students will examine movements' common components, including leadership characteristics, and the roles of religion, music, mainstream and social media, and political agendas.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475AA
ST: Archaeology of the Dead
Special Topics course. Mummies and bog people. Human sacrifice and ancient surgery. A buried queen, traveling archer, and frozen murdered man. The remains of humans are an important part of understanding the human past. This course focuses on how archaeologists study anatomical remains to determine when an individual died, age, sex, stature, pathology, diet, wounds, and cannibalistic practices. Students will also learn how people treated and disposed of the dead, giving insights into gender, ethnicity, race, and hierarchy in past cultures.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475BB
ST: the Black Freedom Struggle in the U.S.
Special Topics course. This course examines the history of black liberation struggles in the U.S., particularly between the 1940s and 1970s. Students will utilize sources including political writings, oral histories, images, music, and film to consider how organizations and activists conceptualized and advanced ideals of freedom, equality, and civil rights. Topics include black nationalism, civil disobedience, voting rights, economic justice, and black power.
3.00 credit hours. Lecture.

SSC.475CC
ST: Cultural Geography
Special Topics course. An interdisciplinary approach to the study of regional world geography with an emphasis on human cultures and their relationships with the natural world. Examines human cultural features such as population, migration patterns, gender relations, and economics as well as the physiographic features of each region. Topics include water management across the globe, deforestation and infectious disease, and urban racial segregation.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475DD
ST: History of HIV/AIDS
Special Topics course. When HIV/AIDS emerged as a deadly infectious disease in the early 1980s, it disrupted medicine and galvanized communities. This course traces its beginnings to its current status as a chronic condition and a leading killer across the globe. Students will critically examine the stigma, science, public health approaches, politics, and therapeutics surrounding the disease.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475EE
ST: The Life and Times of Malcolm X
Special Topics course. This course examines the significant influences of radicalism and Black nationalism on the twentieth-century Black freedom struggle by centering the biography, rhetoric, and iconography of Nation of Islam spokesperson and human rights activist Malcolm X. Students will analyze primary sources including X's Autobiography, as well as speeches, newspaper coverage, political cartoons, documentary and feature films, and music.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475FF
ST: Comparative Politics
Special Topics course. This course introduces students to the foundational concepts and methods of comparative politics. Students will examine the similarities and differences in political systems, political institutions, electoral systems, and political identities across several nations. Topics covered might include the consolidation of power in political institutions, ethnic and cultural impacts on political structures, and the relationship between political institutions and global economies.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475GG
ST: Intimate Partner Violence: Theory and Prevention
Special Topics course. Healthcare providers are uniquely positioned to advocate for those who are impacted by intimate partner violence. This sociology course is designed for future healthcare professionals to learn the signs, symptoms, and possible interventions to various forms of family and domestic violence, as it impacts a range of populations of various ages, cultures, socioeconomic, and community- and faith-based backgrounds.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475HH
ST: Family and Intimate Relationships
Special Topics course. This Sociology course examines family and intimate relationships as part of our daily lives and life course. We cover the historical and cultural development of family structures and how family and intimate relationships have changed over time. We will consider the meaning of family in terms of political, economic, and social factors of contemporary life.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475II
ST: Health, Law, and Policy
Special Topics course. This interdisciplinary course explores how the law intersects with healthcare and public health. We'll examine how laws bear on individuals' well-being and the care and treatment they receive. Topics include healthcare industry regulations; drug testing/approval; health insurance regulations; zoning and building codes; environmental laws; product and food safety; drug, alcohol, and smoking laws; and government response to public health emergencies.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475JJ
ST: Archaeology of Early Civilizations
Special Topics course. This course is an archaeological journey from the development of farming and villages, to the origins of cities and the rise of civilizations: Mesopotamia, Egypt, the Indus River Valley, China, Minoan Crete, Mesoamerica, and Andean South America. Using archaeology to uncover the past, we will examine the culture and socioeconomics of each through their unique artifacts, art, architecture, and religion.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475LL
ST: Introduction to Black Studies
Special Topics course. An introduction to foundational concepts, frameworks, thinkers, and texts of the interdisciplinary field of Black studies. Centering the social, cultural, and political experiences and contributions of peoples of African descent in historical perspective, this course applies an intersectional lens to understand race, and specifically Blackness, as a social construct with profound implications regarding autonomy, rights, power, and personhood in America.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475PO
ST: Mental Health and American Culture
Special Topics course. Mental health has been the subject of intense medical scrutiny and public interest throughout American history, and how it was defined, conceptualized and debated over the last two and half centuries has influenced numerous public health crises as well as the trajectory of American political, medical and cultural history. Utilizing an interdisciplinary approach to historical inquiry, this course charts a chronological path through the history of mental health in American culture and addresses a broad range of topics, including the evolution of psychological knowledge and expertise, the rise and subsequent decline of insane asylums, notions of "normative" sexual behavior and the "epidemic" of homosexuality, the construction of ideal motherhood and the treatment of post-partum depression, the influence of Freudian psychology on American gender ideology, the health care system and end of life care, the globalization of American anxieties about psychology, and contemporary political debates about gun violence and mental health. By the end of the course, students will have: (A) a deeper understanding of the history of mental health in American culture; (B) a nuanced perspective on the interplay between psychological discourse, the mental health profession and American culture; (C) gained familiarity with the different research methodologies of historians of medicine, politics and culture; (D) the ability to analyze different types of sources; (E) further developed their analytical, critical thinking, and writing skills.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.475X
ST: Sports, Exercise, and American Society

Special Topics course. This course introduces the social, cultural, and economic history of sports and exercise in the United States from the Colonial era to the present.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.495
Evolution of the Health Professions
Introduces the history and politics of healthcare in America. Medicine, nursing, pharmacy, and public health are examined in the context of healthcare organizations, popular conceptions of health and illness, and consumer movement challenges.
3.00 credit hours. Lecture. LIB.133 (Required, Previous).

SSC.532
Social Science Directed Study
Supervised study in social sciences involving a survey of existing knowledge, self-instructed and/or faculty-assisted inquiry into previously published data or methodologies, or other faculty-approved study of a nonresearch nature.
1.00 credit hours. Lecture.

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ACADEMIC CALENDAR

MCPHS 2025-2026 Academic Calendar: All Campuses

The University reserves the right to revise these dates as needed.

Notices of any changes will be issued to students, faculty, and staff with as much lead time as possible and posted at https://www.mcphs.edu/academics/academic-calendar.

Date	Event
Friday, August 1, 2025	Fall 2025 Payment Due Date
Monday, September 1, 2025	September (Summer) degree conferral
Monday, September 1, 2025	Labor Day Holiday [no classes]
Tuesday, September 2, 2025	Fall semester-START
Tuesday, September 2, 2025	Fall Add/Drop/Late registration-START
Monday, September 8, 2025	Fall Add/Drop/Late registration-END
Monday, September 8, 2025	Last day to receive 100% refund for complete Fall University withdrawal
Monday, September 15, 2025	Last day to receive 75% refund for complete Fall University withdrawal
Friday, September 19, 2025	Summer semesters [I]NCOMPLETE/grade change-DEADLINE
Monday, September 22, 2025	Last day to receive 50% refund for complete Fall University withdrawal
Monday, September 29, 2025	Last day to receive 25% refund for complete Fall University withdrawal
Tuesday, October 7, 2025	Spring registration-START
Monday, October 13, 2025	Indigenous Peoples' Day [no classes]
Friday, October 24, 2025	Spring registration-END
Tuesday, November 4, 2025	Spring 2026 Bills Sent to Students
TBD	COF-Spring registration-START [Boston]
TBD	COF-Spring registration-END [Boston]
Friday, November 7, 2025	Last day to withdraw from Fall classes
Tuesday, November 11, 2025	Veterans Day Holiday [no classes]
Wednesday, November 26, 2025	Thanksgiving recess-START [no classes]
Thursday, November 27, 2025	Thanksgiving Day
Monday, December 1, 2025	Thanksgiving recess-END [classes resume]
Monday, December 1, 2025	Spring 2026 Payment-Due Date
Saturday, December 6, 2025	Fall semester-Last Day of Classes
Monday, December 8, 2025	Fall Final exams-START [make-up day Saturday]
Friday, December 12, 2025	Fall Final exams-END [make-up day Saturday]
Friday, December 12, 2025	Fall semester-END
Saturday, December 13, 2025	Fall semester-Final exam make-up day
Monday, December 15, 2025	Fall Final Grades available to students
Monday, December 15, 2025	Winter semester break-START
Tuesday, December 16, 2025	December (Winter) commencement ceremony
Tuesday, December 16, 2025	December (Winter) degree conferral
Monday, January 12, 2026	Winter semester break-END [classes resume]
Monday, January 12, 2026	Spring semester-START
Monday, January 12, 2026	Spring Add/Drop/Late registration-START
Friday, January 16, 2026	Spring Add/Drop/Late registration-END
Friday, January 16, 2026	Last day to receive 100% refund for complete Spring University withdrawal
Monday, January 19, 2026	Martin Luther King Holiday [no classes]

Friday, January 23, 2026	Last day to receive 75% refund for complete Spring University withdrawal
Friday, January 30, 2026	Last day to receive 50% refund for complete Spring University withdrawal
Friday, January 30, 2026	Fall semester [I]NCOMPLETE/grade change DEADLINE
Friday, February 6, 2026	Last day to receive a 25% refund for complete Spring University withdrawal
Monday, February 16, 2026	Presidents' Day [no classes]
Monday, March 2, 2026	Spring Break-START [no classes] SUBJECT TO CHANGE
Monday, March 9, 2026	Spring Break-END [classes resume] SUBJECT TO CHANGE
Monday, March 9, 2026	Fall/Summer semesters registration-START
Sunday, March 15, 2026	2026-2027 Financial Aid Priority DEADLINE
Thursday, March 19, 2026	Summer semesters registration-END
Friday, March 20, 2026	Last day to withdraw from Spring classes
Thursday, March 26, 2026	Summer 2026 Bills Sent to Students
Monday, April 20, 2026	Patriots' Day [no classes]
Saturday, April 25, 2026	Spring semester-Last Day of Classes
TBD	COF-Fall/Summer registration-START [Boston]
TBD	COF-Fall/Summer registration-END [Boston]
Monday, April 27, 2026	Spring Final exams week-START [make-up day Saturday]
Friday, May 1, 2026	Summer semesters 2026 Payment Due Date
Friday, May 1, 2026	Spring Final exams-END [make-up day Saturday]
Friday, May 1, 2026	Spring semester-END
Saturday, May 2, 2026	Spring Final exam make-up day
Monday, May 4, 2026	Spring final grades available to students
Thursday, May 7, 2026	May (Spring) commencement ceremony
Thursday, May 7, 2026	May (Spring) degree conferral
Monday, May 18, 2026	Summer I/10-wk/12-wk semesters-START
Monday, May 18, 2026	Summer I/10-wk/12-wk semesters: Add/Drop/Late registration-START
Tuesday, May 19, 2026	Summer I/10-wk/12-wk semesters Add/Drop/Late registration-END
Tuesday, May 19, 2026	Last day to receive 100% refund for complete Summer I/SU10/SU12 University withdrawal
Monday, May 25, 2026	Memorial Day [no classes]
Tuesday, May 26, 2026	Last day to receive 75% refund for complete Summer I/SU10/SU12 University withdrawal
Friday, May 29, 2026	Fall registration-END
Tuesday, June 2, 2026	Last day to receive 50% refund for complete Summer I/SU10/SU12 University withdrawal
Thursday, June 4, 2026	Fall 2026 Bills Sent to Students
Friday, June 5, 2026	Spring semester [I]NCOMPLETE/grade change-DEADLINE
Friday, June 5, 2026	Last day to withdraw from Summer I classes
Tuesday, June 9, 2026	Last day to receive 25% refund for complete Summer I/SU10/SU12 University withdrawal
Friday, June 19, 2026	Juneteenth holiday [no classes]
Saturday, June 20, 2026	Summer I semester-END
Monday, June 22, 2026	Summer I final grades available to students
Monday, June 22, 2026	Summer II semester-START
Monday, June 22, 2026	Summer II semester Add/Drop/Late registration-START
Tuesday, June 23, 2026	Summer II semester Add/Drop/Late registration-END
Tuesday, June 23, 2026	Last day to receive 100% refund for complete Summer II University withdrawal
Tuesday, June 30, 2026	Last day to receive 75% refund for complete Summer II University withdrawal
Thursday, July 2, 2026	Independence Day recess-START [no classes]
Saturday, July 4, 2026	Independence Day [no classes]
Tuesday, July 7, 2026	Independence Day recess-END [classes resume]
Tuesday, July 7, 2026	Last day to receive 50% refund for complete Summer II University withdrawal
Friday, July 10, 2026	Last day to withdraw from Summer II/Summer 10-wk/Summer 12-wk classes

Tuesday, July 14, 2026	Last day to receive 25% refund for complete Summer II University withdrawal
Saturday, July 25, 2026	Summer II semester-END
Saturday, July 25, 2026	Summer 10-wk semester-Last Day of Classes
Monday, July 27, 2026	Summer 10-wk Final exams-START
Monday, July 27, 2026	Summer II final grades available to students
Friday, July 31, 2026	Summer 10-wk Final exams-END
Friday, July 31, 2026	Summer 10-wk semester-END
Saturday, August 1, 2026	Fall 2026 Payment Due Date
Monday, August 3, 2026	Summer 10-wk final grades available to students
Saturday, August 8, 2026	Summer 12-wk semester-Last Day of Classes
Monday, August 10, 2026	Summer 12-wk Final exams-START
Friday, August 14, 2026	Summer 12-wk Final exams-END
Friday, August 14, 2026	Summer 12-wk semester-END
Monday, August 17, 2026	Summer 12-wk final grades available to students
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