PHARMACY SCIENCES, B.S./ PHARMACY, PHARMD

Contact

Conrad Dhing, PhD
Senior Associate Dean, School of Pharmacy
cdhing@une.edu

Mission

The mission of the School of Pharmacy is to provide an exemplary, learner-centered pharmacy education and advance the practice of pharmacy through interprofessional collaboration, research, patient care, and service.

Major Description

The Bachelor of Science with a major in Pharmacy Sciences degree will be an in-course B.S. degree. It is not intended to be a stand-alone degree. It will be awarded after the second year of pharmacy school while the student is pursuing the Pharm.D. degree. The additional Pharm.D. requirements can be found on the **Doctor of Pharmacy catalog (https://catalog.une.edu/programs/pharmacy-pharmd/)** page.

Transfer Credit

See Undergraduate Admissions (https://catalog.une.edu/undergraduate/admissions/) for more information.

Transfer students are encouraged to apply to the University of New England.

Advanced Placement Credit

Students must achieve a score of four or better on an AP examination for credit to be counted. This transfer policy applies to all courses before the start of PHAR courses.

Honors

Graduation honors are awarded to candidates who have distinguished themselves by virtue of high academic achievement while enrolled. Grades from didactic courses are included in the calculation of the cumulative grade point for a designation. Students who have been or are on academic probation at any time during the entire program will not be eligible for graduation with honors regardless of their GPA. Any student who receives a failing grade in didactic will be excluded.

Grade Point Average

> 3.8 Summa Cum Laude
3.7-3.79 Magna Cum Laude
3.6-3.69 Cum Laude

Admissions

See Undergraduate Admissions (https://catalog.une.edu/undergraduate/admissions/) for more information.

Preferred conditions for entry into the B.S. with a major in Pharmacy Sciences degree are completion of at least three years of high school mathematics and three years of high school science, including biology, chemistry, and physics.

Financial Information

Tuition and fees for subsequent years may vary. Other expenses include books and housing. For more tuition and fee information, please consult this catalog's Financial Information (https://catalog.une.edu/undergraduate/financial-information-undergraduate-programs/) section.

Curricular Requirements

Code	Title	Hours
Nor'easter Core Requirements		
Nor'easter Core Requirements (https://catalog.une.edu/undergraduate/core-curriculum/)		40
Program Required Courses		
BIO 106 & 106L	Biology II: Cellular/Molecular and Bio II:Cellular/Molecular Lab	4
BIO 208 & 208L	Intro Anatomy & Physiology I and Intro Anatomy & Phys Lab 1	4
BIO 209 & 209L	Intro Anatomy & Physiology II and Intro Anatomy & Phys II Lab	4
Select one of the following:		4
BIO 214	Genetics	
CHE 310	Fundamentals of Biochemistry	
CHE 202 & 202L	Organic Chemistry II and Organic Chemistry II Lab	
Select one of the following:		4
CHE 110 & 110L	General Chemistry I and General Chemistry I Lab	
CHE 150 & 150L	University General Chemistry I and University General Chemistry I Lab	
Select one of the following:		4
CHE 111 & 111L	General Chemistry II and General Chemistry II Lab	
CHE 151 & 151L	University General Chemistry II and University General Chemistry II Lab	
Select one of the following:		4-5
CHE 201 & 201L	Organic Chemistry I and Organic Chemistry I Lab	
CHE 250 & 250L	University Organic Chemistry I and University Organic Chemistry I Lab	
MAT 180	Precalculus	3
or MAT 190	Calculus I	
Select one of the following:		3-4
PHY 110 & 110L	General Physics I w/Lab and	
PHY 210 & PHY 201L	University Physics I and	
MAT 150	Statistics for Life Sciences	
PSY 105	Introduction to Psychology [2]	3
or SOC 150	Intro to Sociology	
SPC 100	Effective Public Speaking	3
Pharmacy Specific Courses for Both B.S. and Pharm.D. Portions of Program [3]		
PHM 110	Careers in Pharmacy [1]	1
PHM 120	Success in Pharmacy [1]	1
PHM 130	Pharmacy in the News [1]	1

PHRM 501	Biochemistry	3
PHRM 502	Pharmacokinetics	3
PHRM 503	Pharmaceutics	3
PHRM 505	Foundations of Drug Action	2
PHRM 507	Foundations of Pharmacogenomics	2
PHRM 510	D&D - Intro to Drugs & Disease	3
PHRM 519	Summer Community Introductory Pharmacy Practice Experience (IPPE)	4
PHRM 522	Integrated Group Learning II	2
PHRM 531	Abilities Lab I	2
PHRM 532	Abilities Lab II	2
PHRM 541	Pharmacy Success I	1
PHRM 542	Pharmacy Success II	1
PHRM 551	Foundations of Pharmacy Practice	2
PHRM 552	Evid. Based Med & Biostats	3
PHRM 591	Intro to Self Care	2
PHRM 592	Introduction to Pharmacy	1
PHRM 602	Medical Immunology	3
PHRM 611	Drugs and Disease - Cardiovascular I	4
PHRM 612	Drugs and Disease - Cardiovascular II	2
PHRM 613	Drugs and Disease - Infectious Disease I	3
PHRM 614	Drugs and Disease - Infectious Disease II	3
PHRM 616	Drugs and Disease - Renal	2
PHRM 621	Integrated Group Learning III	2
PHRM 622	Integrated Group Learning IV	2
PHRM 631	Abilities Lab III	2
PHRM 632	Abilities Lab IV	2
PHRM 641	Pharmacy Success III	1
PHRM 642	Pharmacy Success IV	1
PHRM 651	Healthcare Systems and Quality	3
PHRM 652	Soc Behav, Outcomes, Pop Health	3
PHRM 711	Drugs and Disease - Endocrine/GI	3
PHRM 712	Drugs and Disease - Pain/Inflammation	3
PHRM 713	Drugs and Disease - Psychiatry	3
PHRM 714	Drugs and Disease - Neurology	2
PHRM 715	Drugs and Disease - Respiratory, Men's/Women's Health	3
PHRM 716	Drugs and Disease - Oncology	2
PHRM 721	Integrated Group Learning V	2
PHRM 722	Integrated Group Learning VI	2
PHRM 731	Abilities Lab V	2
PHRM 732	Abilities Lab VI	2
PHRM 743	Pharmacy Success V	1
PHRM 744	Pharmacy Success VI	1
PHRM 746	Pharmacy Success VII	1
PHRM 751	Pharm Mgmt & Leadership	3
PHRM 752	Pharmacy Law & Ethics	3
PHRM 801	APPE Core Community	6
PHRM 802	Core Hospital/Health Systems Advanced Pharmacy Practice Experience (APPE)	6
PHRM 803	APPE Core Inpatient/Acute Care	6
PHRM 804	APPE Core Ambulatory Care	6
PHRM 805	APPE Elective	6
PHRM 806	APPE Elective	6
or PHRM 807	APPE Elective	
Three Elective with the prefix PHRM [4]		2
Total Hours		**223-225**

1 Students transferring into PSI may choose a three-credit elective in place of PHM 110 Careers in Pharmacy, PHM 120 Success in Pharmacy, and PHM 130 Pharmacy in the News.

2 PSY 105 Introduction to Psychology or SOC 150 Intro to Sociology (if not already taken to satisfy General Education Requirements) or BUEC 204 Microeconomics or BUEC 203 Macroeconomics or any course with subject ANT or PSC.

3 If a student is on track with program requirements, the B.S. will be awarded after the second year of pharmacy school while the student is pursuing the Pharm.D. degree. Additional details for the Pharm.D. portion of the program can be found on the Doctor of Pharmacy catalog page. (https://catalog.une.edu/programs/pharmacy-pharmd/)

4 One elective (two credits) needs to be taken prior to applying for the B.S. degree. Students may take PHRM 697, PHRM 698, and/or PHRM 699 to fulfill this requirements.

Please note: While some courses can fulfill both core and program requirements, the credits earned do not count twice towards the minimum total required credits for the degree.

Academic Standards

All students in the Pharmacy Sciences major are subject to the UNE WCHP undergraduate grading policy (see undergraduate academic policy (https://catalog.une.edu/undergraduate/academic-policy-regulations/)) and progression guidelines.

Progression Guidelines

Students in the Pharmacy Sciences (Pre-Pharmacy) program will be retained providing the following criteria are maintained throughout the undergraduate experience:

1. Students must meet the following minimum requirements for successful progression in years one and two, as outlined in the:
   - UNE Undergraduate Catalog.
   - Nor'easter Core Academic Progression Policies.
2. In keeping with the guidelines for the School of Pharmacy professional program, students must meet certain benchmarks prior to being accepted into the professional pharmacy program:
   - Students may remain in the Pharmacy Sciences major for a maximum of six full-time semesters (12 or more attempted credits per semester).
   - Students must be accepted into the professional pharmacy program after six semesters or change to another major. Students who would like to remain in the Pharmacy Sciences degree for more than six semesters must appeal to the School of Pharmacy Student Development Committee.
3. Students must achieve a minimum grade of C in all required courses in the Pharmacy Sciences major to be admitted into the UNE professional pharmacy program (Doctor of Pharmacy/ Pharm.D. degree). Please refer to the UNE Pharmacy Admissions website (https://www.une.edu/pharmacy/admissions/) for more information regarding admissions requirements.
4. Please refer to the WCHP Graduate Program Progression Policies and Procedures (PDF) (https://www.une.edu/pdfs/wchp-graduate-

program-progression-policies-and-procedures/) for a further description of graduate program standards.

Once a student matriculates into the PharmD degree program they will be held to the School of Pharmacy specific Academic and Progression Policies (See School of Pharmacy Academic and Technical Standards (https://catalog.une.edu/programs/pharmacy-pharmd/)).

Technical Standards

All students must be able to meet the following University of New England (UNE) School of Pharmacy technical standards. A student accepted into the Doctor of Pharmacy program must have abilities and skills in five categories observation, communication, motor, intellectual, and behavioral/social. Standards are developed as criteria to achieve the Doctor of Pharmacy degree in preparation for licensure as a practicing pharmacist and for postgraduate professional training and education in any of the varied fields of pharmacy. Further, the safety of the patient, on whom the pharmaceutical education process is largely focused, must be guarded as the final and ultimate consideration.

The University of New England, Westbrook College of Health Professions School of Pharmacy acknowledges Section 504 of the 1973 Vocational Rehabilitation Act and PL 11-336, the Americans with Disabilities Act (ADA) 19903, and requires minimum technical standards be present in students accepted into the Doctor of Pharmacy program. The School of Pharmacy will engage in an interactive process with applicants with disabilities but the School of Pharmacy reserves the right not to admit any applicant who cannot meet the Technical Standards set forth below, with reasonable accommodations. Applicants are not required to disclose the nature of their disability(ies), if any, to the Admissions Committee. However, any applicant with questions about these technical standards is strongly encouraged to discuss their specific issue(s) with the Student Access Center prior to the interview process. If appropriate, and upon the request of the applicant, reasonable accommodations will be provided.

Reasonable accommodation for persons with documented disabilities will be considered on an individual basis, but a student in the Doctor of Pharmacy program must be able to perform in an independent manner. Every applicant is considered without regard to disability. Once accepted, students must complete all elements of the curriculum with or without reasonable accommodations. In the case of a documented disability, the School of Pharmacy must be fully satisfied that the applicant can make progress through the curriculum. Students in the Doctor of Pharmacy program must have the functional use of the senses of vision and hearing. A student's skills will also be lessened without the functional use of the senses of equilibrium and smell. Additionally, they must have sufficient exteroceptive senses (touch, pain, and temperature), and sufficient motor functions to permit them to carry out the activities described in the sections that follow. Doctor of Pharmacy students must be able to integrate information received from multiple senses quickly and accurately. They must also have the intellectual ability to learn, integrate, analyze, and synthesize data. Graduates of the School of Pharmacy must have the knowledge and skills to function in a broad variety of clinical, administrative, and leadership situations and to render a wide spectrum of pharmaceutical care.

Throughout the Pharmacy program, a student will be expected to maintain the technical standards and demonstrate them through their coursework, interaction with peers and faculty, and in their professional experiences. Students who fail to demonstrate the technical standards while in the program will be evaluated and appropriate action (e.g., remediation, counseling, or dismissal) will be taken. Because this expectation is separate from academic achievement, simply maintaining a passing GPA is not sufficient.

While the School of Pharmacy recognizes that certain disabilities can be accommodated without compromising the standards required by the school and the integrity of the curriculum, the use of a trained intermediary means that a student's judgment must be mediated by someone else's powers of selection and observation, and is not acceptable. Additionally, those individuals who would constitute a direct threat to the health or safety of others are not considered suitable candidates for continued matriculation.

The Following Skills are Required, With or Without Accommodation

Observation

Students must be able to observe demonstrations and conduct exercises in a variety of areas related to contemporary pharmacy practice, including but not limited to monitoring of drug response and preparation of specialty dosage forms. Students must be able to observe demonstrations and experiments in the basic and pharmaceutical sciences, medical illustrations and models, microscopic studies of microorganisms and tissues in normal and pathological states. A student must be able to observe a patient accurately at a distance and close at hand, noting nonverbal as well as verbal signals. The student must be able to observe and interpret presented information. Specific vision-related requirements include, but are not limited to the following abilities: visualizing and discriminating findings on monitoring tests; reading written and illustrated material; discriminating numbers and patterns associated with diagnostic and monitoring instruments and tests; observing the activities of technical staff operating under their supervision; reading information on a computer screen and small print on packages or package inserts; distinguishing shapes, colors, markings, and other characteristics of small objects (e.g. different dosage forms); and competently using instruments for monitoring drug response. Observation requires not only the functional use of the sense of vision but other sensory modalities as well such as hearing and other somatic senses. For example, observation can be enhanced in some situations by the use of the sense of smell.

Communication

A pharmacy student should be able to speak, hear, and observe patients and other health care professionals in order to elicit both verbal and non- verbal information, and must be able to communicate effectively with and about patients. Communication includes speech, reading, writing, and computer literacy. The student must be able to perceive and respond appropriately to all types of communication including telephone communications (verbal, non-verbal, written) from faculty, staff, peers, patients, caregivers, the family of patients, the public, and all members of the health care team.

Specific requirements include but are not limited to the following abilities; reading, writing, speaking and comprehending English with sufficient mastery to accomplish didactic, clinical, and laboratory curricular requirements in a timely, professional and accurate manner; eliciting a thorough medication and medical history; and communicating complex findings in appropriate terms that are understood by patients, caregivers, and members of the healthcare team. Each student must be able to read and record observations and care plans legibly, efficiently, and accurately. Students must be able to prepare and communicate concise but complete summaries of individual activities, decisions, and encounters with patients. Students must be able to complete forms or

appropriately document activities according to directions in a complete and timely fashion.

Motor

Pharmacy students must have sufficient motor function to carry out basic laboratory techniques and skills to accomplish basic pharmacy practice tasks utilizing both gross and fine motor skills. These include but are not limited to; compounding prescriptions, filling prescriptions, counting prescription medications, administering medications, preparing intravenous products, and administering intramuscular and subcutaneous injections. The student must be able to conduct a physical assessment of a patient by palpation, auscultation, and other diagnostic maneuvers. Other motor activities include performing first aid and/or cardiopulmonary resuscitation in the clinical setting.

Students must be able to transport themselves to off-site settings and experiential locations in a timely manner. Students must be able to respond promptly to urgencies within the practice setting and must not hinder the ability of their co-workers to provide prompt care. Examples of such emergency treatment reasonably required of pharmacists include arriving quickly when called, rapidly and accurately preparing appropriate emergency medication, and the preparation of sterile intravenous medications.

Students must be able to use computer-based information systems and have sufficient motor function and coordination required for the manipulation of small and large objects. The student must have the ability to move and position another person in a manner that will facilitate physical assessment or another diagnostic lab testing. Lastly, students must exhibit the physical and mental stamina needed while standing or sitting for prolonged periods of time.

Intellectual

A student should possess sufficient intellectual, conceptual, integrative, and quantitative abilities to complete a rigorous and intense didactic and experiential curriculum. These abilities include measurement, calculation, reasoning, analysis, decision-making, judgment, information integration, and solution synthesis. In addition, the student should be able to comprehend three-dimensional relationships and to understand the spatial relations of structures. Especially important is the appropriate and rapid calculation of dosages for a variety of patient-specific conditions such as renal or hepatic failure, obesity, cardiac or respiratory arrest, etc. Additionally, calculations involving appropriate dilution or reconstitution of drug products, electrolytes, etc. must be made accurately and quickly. Students must be able to retain and recall critical information in an efficient and timely manner. Students must be able to identify and acknowledge the limits of their knowledge to others when appropriate and be able to recognize when the limits of their knowledge indicate further study or investigation before making a decision. Students must be able to interpret graphs or charts describing biological, economic, or outcome relationships. They must be able to learn through a variety of modalities including, but not limited to, classroom instruction, small group activities, individual study, preparation and presentation of reports, and use of computer technology. Students are expected to be fully alert and attentive at all times in the classroom and clinical settings.

Behavioral and Social

A pharmacy student must possess the physical and emotional health required for full utilization of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the care of patients, and the development of effective relationships with patients. Students must adapt to changing environments, to display flexibility and function in the face of uncertainties inherent in the academic and clinical environments with appropriate coping responses. Compassion, integrity, concern for others, interpersonal skills, interest, and motivation are qualities that are assessed during the admission and education process. The student must recognize and display respect for differences in culture, values, and ethics among patients, faculty, peers, clinical and administrative staff, and colleagues. The student must be able to identify and demonstrate appropriate behavior to protect the safety and well-being of patients, faculty, peers, clinical and administrative staff, and colleagues. Lastly, the student should handle situations appropriately and professionally when those situations may be physically, emotionally, or intellectually stressful, including those situations that must be handled promptly and calmly. At times, this requires the ability to be aware of and appropriately react to one's own immediate emotional responses and environment.

When a letter of acceptance to the University of New England Westbrook College of Health Professions School of Pharmacy is mailed, a detailed copy of the Technical Standards for completion of the curriculum will be included. The applicant will be asked to respond in writing whether they can meet the standards with or without accommodation. An applicant should be able to evaluate themself for compliance with these Technical Standards. In the event that accommodation is requested, the student must submit documentation of disability with the proposed accommodation from a certified specialist to UNE's Student Access Center. A continuing student who develops a disability should request accommodations based on the limitations of the disability through the Student Access Center. Individuals unable to meet the above Technical Standards may be unable to progress and/or complete the Pharm.D. program.

Students must be able to meet the Maine State Board of Pharmacy licensing requirements to obtain a valid Introductory (IPPE) and Advanced Pharmacy Practice Experiences (APPE) License. These licenses are required to complete off-campus experiential courses. Inability to obtain a Maine IPPE or APPE License may prevent completion of experiential courses and prevent a student from continuing in the program and completing the requirements for graduation. Students completing their experiential education in other states must meet the licensing requirements of that state.

The School of Pharmacy's Admissions Committee will consider the applicant based on the criteria for admission of all applicants. An applicant who discloses a disability and requests accommodation in the admission process may be required to submit, in writing, the request for accommodation and pertinent supporting documentation. This pertinent information may include a history of accommodations granted previously in other educational programs.

Requests for accommodation may be initiated with UNE's Student Access Center.

For more information on disabilities and accommodation, please contact the UNE Student Access Center (https://www.une.edu/student-affairs/life-une/division-student-affairs/student-access-center/).

The additional Pharm.D. requirements can be found on the Doctor of Pharmacy catalog page. (https://catalog.une.edu/programs/pharmacy-pharmd/)

Learning Outcomes

Upon completion of the degree, students will be able to:

- Demonstrate the ability to think critically, solve complex problems, make thoughtful ethical decisions, and reason quantitatively, qualitatively, and scientifically.
- Demonstrate the ability to communicate effectively orally and in writing as well as through creative expression.
- Demonstrate understanding of themselves and their place in the world as engaged citizens and responsible professionals.
- Appraise knowledge of self and self-reflective abilities for Interprofessional practice.
- Demonstrate mastery of pharmacy science skills and knowledge.
- Apply pharmacotherapy knowledge to select patient conditions.

The additional Pharm.D. Learning Outcomes can be found on the Doctor of Pharmacy catalog page. (https://catalog.une.edu/programs/pharmacy-pharmd/)