

Doctor of Pharmacy, PharmD

Requirements

The Doctor of Pharmacy (PharmD) program provides professional education in a number of areas, including pharmaceutical technology, biopharmaceutics, medicinal chemistry and natural products, pharmaceutical socioeconomics, pharmacotherapy, patient care, clinical and hospital pharmacy, and aspects of biotechnology. Graduates of the program are qualified to take examinations required for licensure as a pharmacist.

Programs designed to lead to professional licensure are subject to federal regulations regarding informational disclosures. Please see Professional Licensure Disclosures by Program for further information.

Prerequisite Coursework

The program is preceded by at least two years of pre-pharmacy study in the College of Liberal Arts and Sciences at the University of Iowa or an accredited community or liberal arts college in the United States or Canada. During pre-pharmacy study, students complete the prerequisites for admission to the PharmD program. See Admission [p. 3] in this section of the catalog for a list of prerequisite coursework.

Professional Curriculum

The PharmD degree requires four years of full-time study in the following coursework, including at least 10 s.h. of professional electives. The College of Pharmacy provides students with high-quality professional practice experiences. Faculty and adjunct faculty serve as preceptors, providing introductory and advanced practice experience at institutions and pharmacies in Iowa, nationwide, and around the world.

Students must meet progression requirements in accordance with Doctor of Pharmacy policies. See the Student Handbook on the PharmD Student Resources page of the College of Pharmacy website.

First Year, Fall

Course #	Title	Hours
PHAR:8130	Foundations of Pharmacy Practice I	4
PHAR:8131	Engagement: Professional Skills and Values	1
PHAR:8133	Introductory Pharmacy Practice Experience Career Exploration (fall or spring)	1
PHAR:8134	Foundations of Health Services	3
PHAR:8135	Health Information Retrieval and Informatics	2
PHAR:8136	Foundations of Pharmaceutical Sciences	6
PHAR:8138	Pharmacy Calculations	1

First Year, Spring

Course #	Title	Hours
PHAR:8133	Introductory Pharmacy Practice Experience Career Exploration (fall or spring)	1
PHAR:8140	Foundations of Pharmacy Practice II	4
PHAR:8148	Pharmacokinetics and Dose Optimization	2
PHAR:8149	Foundations of Pharmacology and Toxicology	3
PHAR:8150	Foundations of Health, Wellness, and Disease	2
PHAR:8151	Clinical Investigation I: Research Question, Study Design, and Methods	3
PHAR:8153	Integrated Pharmacotherapy: Dermatology and Sensory	2

Second Year, Fall

Course #	Title	Hours
PHAR:8207	Introductory Pharmacy Practice Experiences Community (may be taken in a different semester)	3
PHAR:8209	Introductory Pharmacy Practice Experiences Hospital (may be taken in different semester)	3
PHAR:8250	Applications of Pharmacy Practice I	2
PHAR:8254	Integrated Pharmacotherapy: Endocrine	3
PHAR:8256	Integrated Pharmacotherapy: Renal, Fluids, and Electrolytes	2
PHAR:8260	Integrated Pharmacotherapy: Cardiovascular	4
PHAR:8276	Clinical Investigation II: Advanced Methods and Literature Interpretation	2

Second Year, Spring

Course #	Title	Hours
PHAR:8207	Introductory Pharmacy Practice Experiences Community (may be taken in a different semester)	3
PHAR:8209	Introductory Pharmacy Practice Experiences Hospital (may be taken in a different semester)	3
PHAR:8261	Integrated Pharmacotherapy: Neurology and Psychiatry	4
PHAR:8263	Integrated Pharmacotherapy: Infectious Diseases	4

PHAR:8265	Applications of Pharmacy Practice II	2
PHAR:8275	Advanced Health Services	2

Third Year, Fall

Course #	Title	Hours
PHAR:8301	Introductory Pharmacy Practice Experience Clinical	1
PHAR:8352	Integrated Pharmacotherapy: Musculoskeletal	4
PHAR:8370	Integrated Pharmacotherapy: Respiratory and Allergy	2
PHAR:8372	Integrated Pharmacotherapy: Gastroenterology and Nutrition	3
PHAR:8374	Applications of Pharmacy Practice III	2

Third Year, Spring

In addition to the required courses outlined in the following list, students must enroll in a minimum of 4 s.h. of professional elective courses or an early advanced pharmacy practice experience to total a minimum of 12 s.h. during this semester.

Course #	Title	Hours
PHAR:8132	Continuing Professional Development	1
PHAR:8353	Integrated Pharmacotherapy: Genitourinary and Reproductive	2
PHAR:8371	Integrated Pharmacotherapy: Oncology and Hematology	2
PHAR:8378	Pharmacy Law and Ethics	2
PHAR:8384	Applications of Pharmacy Practice IV	1

Professional Electives

PharmD students must complete at least 10 s.h. of didactic professional electives in College of Pharmacy courses (prefix PHAR) numbered 8501–8799 before progressing to advanced pharmacy practice experiences. See Courses in this section of the catalog.

Fourth Year

During the fourth year, students must complete eight advanced pharmacy practice experiences. All students must complete the first four rotations in the following list (24 s.h.); the remaining advanced pharmacy practice experiences may be selected by each student from a variety of patient-care and non-patient care opportunities.

Course #	Title	Hours
All of these:		
PHAR:9401	Ambulatory Care Rotation	6
PHAR:9404	Community Clinical Rotation	6
PHAR:9410	Hospital Pharmacy Rotation	6
PHAR:9413	Acute Care Medicine Rotation	6

Four additional rotations from these categories:

PHAR:9450	Elective: Patient Care Rotation	6
PHAR:9451	Elective: Non-Patient Care Rotation (taken up to two times)	6

Combined Programs

PharmD/MPH

The College of Pharmacy and the College of Public Health offer the combined Doctor of Pharmacy/Master of Public Health program. The combined 42 s.h. program requires 30 s.h. of additional public health coursework beyond the PharmD program requirements. Students completing all requirements will receive both degrees.

The PharmD/MPH program helps students develop expertise in public health related to pharmacotherapy, health promotion, disease prevention, and medication safety. Its graduates may work in areas of interest common to pharmacy and public health, such as the spread and treatment of disease, community health, and immunology; bioterrorism, terrorism, and preparedness; genetics; insurance; managed care; family and juvenile health; and protection of special populations. Employment opportunities are available in hospitals and clinics and with health care providers; private practice; insurance and managed care organizations; local, county, state, and federal government; public health governmental agencies; and colleges and universities.

Separate admission to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the combined degree program.

See the Master of Public Health, MPH (College of Public Health) in the catalog to learn about curriculum and admission requirements.

PharmD/MS in Informatics (Health Informatics Subprogram)

The College of Pharmacy and the Graduate College offer the combined Doctor of Pharmacy/Master of Science in informatics with a health informatics subprogram. The combined 34 s.h. program requires 25 s.h. of additional coursework beyond the PharmD program requirements. Students completing all requirements will receive both degrees.

The PharmD/MS program assists students in developing special expertise in information technology, including management of electronic health records, health information exchange standards, electronic prescribing, medication management, decision support, as well as other competencies. Graduates will be prepared for employment in industry or academic institutions with skills to address pharmacotherapy issues as well as information technology management.

Separate application to each degree program is required. Applicants must be admitted to both programs before they may be admitted to the combined degree program. It is recommended that students apply to the Graduate College for admission to the MS program before entering the spring semester of their first year in the pharmacy program.

Health informatics coursework must be taken following the first professional pharmacy year. Therefore, PharmD graduation will be delayed by one year. For information about

the Master of Science degree, see the MS in informatics (Graduate College) in the catalog.

Admission

Individuals apply to the PharmD program using PharmCAS, the American Association of Colleges of Pharmacy application service. See Doctor of Pharmacy on the College of Pharmacy website for more information.

By selecting the University of Iowa College of Pharmacy, students choose to be part of the legacy of leaders for which the College of Pharmacy has become well known. Iowa pharmacy shapes pharmacy practice nationally and internationally with evidence-based practice models and collaborative pharmacy care innovations.

As aspiring Doctor of Pharmacy students, the first two years are spent completing general education and prerequisite courses to prepare candidates for the PharmD degree. Prior to completing the required courses, students apply to the PharmD program.

Applicants must complete the college-level work listed in the following section, "Prerequisites for Admission." They must also submit official transcripts, two letters of recommendation, and a personal statement. Applicants considered for admission must have a personal interview; the college contacts applicants to arrange interview appointments.

Fulfillment of the admission requirements does not ensure admission to the College of Pharmacy. The admissions committee considers applicants who meet these requirements and selects individuals who, in their judgment, are the best qualified for the study and practice of pharmacy.

Applicants who are accepted for admission are required to submit to a criminal background check and pay an admission acceptance fee. The fee is applied to tuition for the student's first semester of enrollment in the college. The deposit is not refunded to applicants who do not enroll in the College of Pharmacy.

Entering health sciences students are required to have an annual tuberculin skin test (TST) and proof of immunization against mumps, measles, and rubella (two MMRs), tetanus, diphtheria, and varicella before classes begin. The usual regimen of three doses of the Hepatitis B vaccine and a Hepatitis B titer must be completed by the second semester of the first year. All students are required to have hospitalization and health insurance.

Prerequisites for Admission

Applicants to the PharmD program must have completed the following college-level work with a C-minus or higher. In addition to specific courses listed below, students complete a total of 16 s.h. of general education electives; 6 s.h. of those must be within the social sciences. Courses in moral reasoning or ethics, communications, computer science, business, behavioral, humanities, and social sciences are accepted for the Liberal Arts/UI GE CLAS Core area. Courses in physical education skills, applied music, and studio art are not accepted for this area.

Course #	Title	Hours
Rhetoric		
RHET:1030	Rhetoric: Writing and Communication	4-5

Or 6 s.h. of transfer credit in English composition and rhetoric and 3 s.h. in speech

Biochemistry

BMB:3110	Biochemistry	3
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General Biology

BIOL:1411	Foundations of Biology	4
BIOL:1412	Diversity of Form and Function	4

General Chemistry

CHEM:1110	Principles of Chemistry I	4
CHEM:1120	Principles of Chemistry II	4

Human Anatomy

One of these:		
ACB:3110	Principles of Human Anatomy	3
HHP:2100	Human Anatomy	3

Human Physiology

HHP:2400	Fundamentals of Human Physiology	3
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Mathematics

MATH:1460	Calculus for the Biological Sciences	4
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Or 3-4 s.h. of a satisfactory differential and integral calculus course

Microbiology

One of these:		
MICR:2157 & MICR:2158	General Microbiology and General Microbiology Laboratory	5
MICR:3164	Microbiology and Human Health	4

Organic Chemistry

CHEM:2210	Organic Chemistry I	3
CHEM:2220	Organic Chemistry II	3

Physics

PHYS:1400	Basic Physics	3-4
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Or one year of high school physics or one semester of college-level physics with or without a lab

Statistics

3 s.h. of statistics equivalent to STAT:1020 or higher

Liberal Arts/UI GE CLAS Core Electives

At least 16 s.h., 6 s.h. of which must be in the social sciences

Financial Support

Each year the College of Pharmacy awards scholarships to student pharmacists through a variety of awards. The college typically awards over \$1 million to help cover the cost of education. Around half of the student body receives a scholarship.

For more information, visit Scholarship Opportunities on the College of Pharmacy website.

Career Advancement

College of Pharmacy graduates enjoy a high placement rate in jobs, pharmacy residencies, or additional educational programs. Graduates commonly choose to practice in a community pharmacy or a hospital setting, but many also hold positions in government, home health care, consulting,

clinical pharmacy, managed care facilities, higher education, the pharmaceutical industry, private businesses, and more.

Academic Plans

Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

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Course	Title	Hours
First Year		
Any Semester		
PHAR:8133	Introductory Pharmacy Practice Experience Career Exploration ^a	1
Hours		1
Fall		
PHAR:8130	Foundations of Pharmacy Practice I	4
PHAR:8131	Engagement: Professional Skills and Values	1
PHAR:8134	Foundations of Health Services	3
PHAR:8135	Health Information Retrieval and Informatics	2
PHAR:8136	Foundations of Pharmaceutical Sciences	6
PHAR:8138	Pharmacy Calculations	1
Hours		17
Spring		
PHAR:8140	Foundations of Pharmacy Practice II	4
PHAR:8148	Pharmacokinetics and Dose Optimization	2
PHAR:8149	Foundations of Pharmacology and Toxicology	3
PHAR:8150	Foundations of Health, Wellness, and Disease	2
PHAR:8151	Clinical Investigation I: Research Question, Study Design, and Methods	3
PHAR:8153	Integrated Pharmacotherapy: Dermatology and Sensory	2
Hours		16
Second Year		
Any Semester		
PHAR:8207	Introductory Pharmacy Practice Experiences Community ^b	3
PHAR:8209	Introductory Pharmacy Practice Experiences Hospital ^d	3
Professional elective courses (prefix PHAR, numbered 8501-8799) ^c		3 - 6
Hours		9-12
Fall		
PHAR:8250	Applications of Pharmacy Practice I	2
PHAR:8254	Integrated Pharmacotherapy: Endocrine	3
PHAR:8256	Integrated Pharmacotherapy: Renal, Fluids, and Electrolytes	2

PHAR:8260	Integrated Pharmacotherapy: Cardiovascular	4
PHAR:8276	Clinical Investigation II: Advanced Methods and Literature Interpretation	2
Hours		13

Spring

PHAR:8261	Integrated Pharmacotherapy: Neurology and Psychiatry	4
PHAR:8263	Integrated Pharmacotherapy: Infectious Diseases	4
PHAR:8265	Applications of Pharmacy Practice II	2
PHAR:8275	Advanced Health Services	2
Hours		12

Third Year

Any Semester

Professional elective courses (prefix PHAR, numbered 8501-8799) ^c		3 - 6
Hours		3-6

Fall

PHAR:8301	Introductory Pharmacy Practice Experience Clinical ^d	1
PHAR:8352	Integrated Pharmacotherapy: Musculoskeletal	4
PHAR:8370	Integrated Pharmacotherapy: Respiratory and Allergy	2
PHAR:8372	Integrated Pharmacotherapy: Gastroenterology and Nutrition	3
PHAR:8374	Applications of Pharmacy Practice III	2
Hours		12

Spring

PHAR:8132	Continuing Professional Development ^e	1
PHAR:8353	Integrated Pharmacotherapy: Genitourinary and Reproductive	2
PHAR:8371	Integrated Pharmacotherapy: Oncology and Hematology	2
PHAR:8378	Pharmacy Law and Ethics	2
PHAR:8384	Applications of Pharmacy Practice IV	1
Professional elective courses (prefix PHAR, numbered 8501-8799) or an early advanced pharmacy practice experience ^c		4
Hours		12

Fourth Year

Any Semester

PHAR:9401	Ambulatory Care Rotation ^f	6
PHAR:9404	Community Clinical Rotation ^f	6
PHAR:9410	Hospital Pharmacy Rotation ^f	6
PHAR:9413	Acute Care Medicine Rotation ^f	6
PHAR:9450	Elective: Patient Care Rotation ^f	6
PHAR:9450	Elective: Patient Care Rotation ^f	6
PHAR:9451 or PHAR:9450 ^f	Elective: Non-Patient Care Rotation ^f or Elective: Patient Care Rotation	6

PHAR:9451 or PHAR:9450	Elective: Non-Patient Care Rotation or Elective: Patient Care Rotation	6
Hours		48
Total Hours		143-149

- a Half of P1 students take PHAR:8133 in the fall semester and half take it in the spring semester.
- b PHAR:8207 and PHAR:8209 can be completed during summer after P1, winter of P2, or summer after P2. PHAR:8209 can also be completed during the fall or spring of P2 year. Both of these must be completed before taking PHAR:8301.
- c Students must complete at least 10 s.h. of didactic professional electives in College of Pharmacy courses before progressing to advanced pharmacy practice experiences.
- d Some students may complete PHAR:8301 during the summer preceding their P3 year.
- e PHAR:8132 is a longitudinal course that students engage in during the P1 through P3 years, with credit assigned in the P3 spring semester.
- f During the fourth year, students must complete eight advanced pharmacy practice experiences. All students must complete the first four rotations (24 s.h.) by taking PHAR:9401, PHAR:9404, PHAR:9410, and PHAR:9413. The remaining four rotations may be selected from a variety of patient-care (PHAR:9450) and non-patient care (PHAR:9451) opportunities. Note: PHAR:9451 may be taken up to two times.