

## Class of 2024 Graduation Requirements

# Doctor of Pharmacy (PharmD)

Students in the PharmD program are required to complete a minimum of 159.0 units over the course of four years of study. The coursework is comprised of required courses, elective courses, and a capstone. Included in the required 159.0 total units, students must complete 10 experiential rotations consisting of 3 Introductory Pharmacy Practice Experiences (IPPE), for a minimum of 320 hours, and 7 Advanced Pharmacy Practice Experiences (APPE), for a total of 1,680 hours.

### Program Requirements

1st Year FALL Core Courses	Units
<b>PHAR 5310</b> Pharmaceutics and Biopharmaceutics	3.0
<b>PHAR 5311</b> Pharmaceutical Calculations	2.0
<b>PHAR 5315</b> Principles of Drug Action	4.5
<b>PHAR 5325</b> Integrated Series 1 – Introduction to Pharmacy Practice	5.0
<b>PHAR 5332</b> Biostatistics	2.5
<b>PHAR 5350</b> Professional Development Series 1	1.0
<b>PHAR 5360</b> Recitation 1	1.0
<b>Subtotal</b>	<b>19.0</b>

1st Year Spring Core Courses	Units
<b>PHAR 5318</b> Pharmacokinetics	3.0
<b>PHAR 5321</b> Pharmacy Law and Ethics	2.0
<b>PHAR 5335</b> Integrated Series 2 – Endocrinology and Urology	5.0
<b>PHAR 5342</b> Drug Information, Study Design, and Literature Evaluation	2.0
<b>PHAR 5351</b> Professional Development Series 2	1.0
<b>PHAR 5365</b> Recitation 2	1.0
<b>PHAR 5370</b> Introduction to Industry	2.0
<b>PHAR 5375</b> Pre-IPPE Readiness and Patient Assessment	3.0
<b>Subtotal</b>	<b>19.0</b>

### Program Requirements

2nd Year FALL Core Courses	Units
<b>PHAR 6420</b> Pharmacy Management	2.0
<b>PHAR 6425</b> Integrated Series 3 – Cardiology	6.0
<b>PHAR 6430</b> Introduction to Pharmacy Informatics	2.0
<b>PHAR 6435</b> Integrated Series 4 – Nephrology	4.0
<b>PHAR 6450</b> Professional Development Series 3	1.0
<b>PHAR 6460</b> Recitation 3	1.0
<b>PHAR 6471</b> IPPE 1 – Community Pharmacy Practice	4.5
<b>Subtotal</b>	<b>20.5</b>

2nd Year Spring Core Courses	Units
<b>PHAR 6411</b> Sterile Products	1.0
<b>PHAR 6421</b> Pharmacoeconomics and Pharmacovigilance	2.0
<b>PHAR 6428</b> Health Care Delivery	2.0
<b>PHAR 6445</b> Integrated Series 5 – Immunology, Rheumatology, and Dermatology	4.0
<b>PHAR 6455</b> Integrated Series 6 – Infectious Disease	7.0
<b>PHAR 6451</b> Professional Development Series 4	1.0
<b>PHAR 6465</b> Recitation 4	1.0
<b>Subtotal</b>	<b>18.5</b>

### Program Requirements

3rd Year FALL Core Courses	Units
<b>PHAR 7515</b> Integrated Series 7 – Neurology and Psychiatry	6.0
<b>PHAR 7525</b> Integrated Series 8 – Gastroenterology	4.0
<b>PHAR 7552</b> Pre-APPE Readiness 1	2.0
<b>PHAR 7560</b> Recitation 5	1.0
<b>PHAR 7571</b> IPPE 3 – Health Systems Pharmacy Practice	3.0
<b>Didactic Certificate Electives</b>	4.5-6.0
<b>Subtotal</b>	<b>20.5-22.0</b>

3rd Year Spring Core Courses	Units
<b>PHAR 7535</b> Integrated Series 9 – Hematology and Oncology	5.0
<b>PHAR 7555</b> Integrated Series 10 – Pulmonology and Ophthalmology	1.0
<b>PHAR 7553</b> Pre-APPE Readiness 2	2.0
<b>PHAR 7565</b> Recitation 6	1.0
<b>PHAR 7572-7576</b> Certificate Experience Elective	3.0
<b>Didactic Certificate Electives</b>	4.5- 6.0
<b>Subtotal</b>	<b>16.5-18.0</b>

4th Year FALL Core Courses	Units
<b>PHAR 8600E</b> Advanced Community Practice APPE	6.0
<b>PHAR 8601E</b> Advanced Health-System Practice APPE	6.0
<b>PHAR 8602E</b> Ambulatory Care APPE	6.0
<b>PHAR 8603E</b> General Medicine APPE	6.0
<b>Subtotal</b>	<b>24.0</b>

4th Year Spring Core Courses	Units
<b>PHAR 8610E, 8620-8631E</b> Direct Patient Care APPE	6.0
<b>PHAR 8611E, 8620-8631E, 8650-8656E, 8672-8676E</b> Elective APPE	12.0
<b>PHAR 8640</b> Pharmacy Capstone Seminar	1.5
<b>Subtotal</b>	<b>19.5</b>

- **IPPE/APPE** = Introductory Pharmacy Practice Education/Advanced Pharmacy Practice Education – courses that are designated experiential and will take place off campus in a variety of pharmacy practice settings.

### **Introductory Pharmacy Practice Experiences (IPPE rotations)**

**Includes three rotations that will take place during the second (P2) and third (P3) year.**

The IPPE rotations will provide the students with at least 320 hours. More than 50% of the IPPE hours are in community and institutional sites.

### **Advanced Pharmacy Practice Experiences (APPE rotations)**

**APPE rotations take place during the fourth (P4) year.**

In total, seven APPE rotations are required in the program and will take place during the fourth professional (P4) year. Seven APPEs will provide the students with a total of 1,680 hours of practice experience during the PharmD program (40 hours/week for 6 weeks for 7 rotations).

## **PharmD Certificates**

PharmD graduates will earn a certificate of choice in one of four areas: Medical and Clinical Affairs (MCA), Healthcare Management (HCM), Pharmacy Informatics (PI), or Medication Therapy Outcomes (MTO). Below are the required and elective courses to successfully complete each certificate. In addition to the 9.0 credit hours required for each certificate, all PharmD students must complete an additional 1.5 credit hours from one of four required MTO certificate courses (denoted by \* in the MTO certificate courses below).

### Healthcare Management (HCM)

The HCM certificate program offers management training and experience in dynamic healthcare settings. The curriculum emphasizes analytical and problem-solving skills in conjunction with a deep understanding of the healthcare environment.

Healthcare Management (HCM)	Units
<b>BUS 6400</b> Organizational Behavior (ALSS 451)	3.0
<b>PHAR 7513</b> Healthcare Finance and Reimbursement	1.5
<b>PHAR 7514</b> Quality and Performance Improvement	1.5
<b>PHAR 7542</b> Applying Technology to the Medication Use Process	3.0
<b>Total</b>	<b>9.0</b>

Certificate Experience Elective – PHAR 7573 Healthcare Management Experience Elective

### Medical and Clinical Affairs (MCA)

The MCA certificate program will provide student pharmacists with the skills needed to provide strategic, tactical, and operational direction within regulations to expedite the development and delivery of safe and effective healthcare products.

Medical and Clinical Affairs	Units
<b>BUS 5000</b> Introduction to the Biosciences Industries	3.0
<b>REG 5000</b> Introduction to US Food and Drug Law	1.5
<b>REG 6510</b> Design of Clinical Trials, Conduct, and Strategy	1.5
<b>PHAR 7520</b> Pharmaceutical Marketing	1.5
<b>PHAR 7563</b> Fundamentals of Medical Affairs	1.5
<b>Subtotal</b>	<b>9.0</b>

Certificate Experience Elective – PHAR 7576 Medical and Clinical Affairs Experience Elective

### Medication Therapy Outcomes (MTO)

The MTO certificate program provides opportunities to develop skills to provide care for patients in rural settings, from underserved populations, in accountable care organizations, and throughout the continuum of care process. Students selecting the MTO certificate are required to complete 10.5 credit hours from the list below (9 credit hours for the MTO certificate and 1.5 credit hours as a required MTO certificate course that all PharmD students must select).

Medication Therapy Outcomes (MTO)	Units
PHAR 7581 Advanced Topics in Drug Interactions	1.5
PHAR 7582 Critical Care*	1.5
PHAR 7587 Nutrition Support*	1.5
PHAR 7588 Geriatric Patient Care	1.5
PHAR 7591 Pharmacists' Patient Care Process (PPCP)*	1.5
PHAR 7593 Cardiology*	1.5
PHAR 7595 Neuropsychiatric Pharmacotherapy	1.5
<b>Subtotal</b>	<b>10.5</b>

\*Identifies the four options for required MTO certificate courses electives for all PharmD students.

\*\*Course not offered in academic year 2021/22 and 2022/23

Certificate Experience Elective – PHAR 7572 Medication Therapy Outcomes Experience Elective

### Pharmacy Informatics (PI)

The PI certificate program will provide student pharmacists with the necessary skills to become leaders in healthcare technology and to understand the value technology brings to improving patient wellness and healthcare quality while reducing cost and enhancing the patient's experience.

Pharmacy Informatics (PI)	Units
PHAR 7541 Clinical Decision Support Systems	1.5
PHAR 7542 Applying Technology to the Medication Use Process	3.0
PHAR 7543 Planning, Implementing and Optimizing Systems	3.0
PHAR 7545 Achieving Medication Safety through Informatics	1.5
<b>Total</b>	<b>9.0</b>

Certificate Experience Elective – PHAR 7575 Pharmacy Informatics Experience Elective