Students in the PharmD program are required to complete a minimum of **161.5 units** over the course of four years of study. The coursework is comprised of required courses, elective courses, and a capstone. Along with completing the required 161.5 total units, students must also complete 10 clinical 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.

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| **1st Year FALL Core Courses** | **Units** |  | **1st Year SPRING Core Courses** | **Units** |
| **PHAR 301** Fundamentals of Drug Action and Drug Metabolism | 3.0 |  | **PHAR 303** Genetic Control of Cell Structure and Function, Genes, and Pharmacogenomics | 4.5 |
| **PHAR 302** Principles of Pharmacology and Toxicology | 3.0 |  | **PHAR 304** Metabolism of Carbohydrates, Lipids and Amino acids | 3.0 |
| **PHAR 310** Pharmaceutics and Biopharmaceutics | 3.0 |  | **PHAR 305** Anti-diabetic, Endocrine, GI and GU Pharmacology and Medicinal Chemistry | 3.0 |
| **PHAR 320** Health Care Delivery | 2.0 |  | **PHAR 321** Pharmacy Law and Ethics | 2.0 |
| **PHAR 311** Pharmaceutical Calculations | 2.0 |  | **PHAR 370** Introduction to the Industry | 2.0 |
| **PHAR 330** Scientific Inquiry – Intro to Drug Information, Biostatistics 1 and IPE/PBL | 2.0 |  | **PHAR 331** Scientific Inquiry-Biostatistics 2, Clinical Trial Design and IPE/PBL | 2.0 |
| **PHAR 340** Communication, Concepts in Diversity, Immunizations and Self-Care | 2.0 |  | **PHAR 341** Epidemiology, Health Disparity, Patient Advocacy Motivational Interviewing, and Self Care | 2.0 |
| **PHAR 350** PDS1: Professional Development 1 | 2.0 |  | **PHAR 351** Professional Development 2 | 1.0 |
| **Subtotal** | **19.0** |  | **Subtotal** | **19.5** |

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| **2nd Year FALL Core Courses** | **Units** |  | **2nd Year SPRING Core Courses** | **Units** |
| **PHAR 410** Pharmacokinetics | 3.0 |  | **PHAR 403** Immunology/Oncology Pharm. and Medicinal Chemistry | 2.0 |
| **PHAR 401** Cardiovascular/Renal Pharm. and Med. Chemistry | 3.0 |  | **PHAR 404** Anti-Infectives Pharm. and Medicinal Chemistry | 1.5 |
| **PHAR 402** Neuropharmacology and Medicinal Chemistry | 3.0 |  | **PHAR 405** PTMM — Principles of Pharmacotherapy & Fluids, Electrolytes, Nephrology | 3.0 |
| **PHAR 420** Pharmacy Management | 2.0 |  | **PHAR 406** PTMM — Cardiology | 4.0 |
| **PHAR 430** Intro to Pharmacy Informatics | 2.0 |  | **PHAR 411** Sterile Products | 1.5 |
| **PHAR 431** Advanced Literature Evaluation | 1.0 |  | **PHAR 421** Pharmacoeconomics and Pharmacovigilance | 2.0 |
| **PHAR 440** IPE PBL, Patient Assessment, and Self-Care I | 2.0 |  | **PHAR 441** IPE PBL, Patient Assessment, and Self-Care II | 2.0 |
| **PHAR 450** Professional Development 3 | 1.0 |  | **PHAR 451** Professional Development 4 | 1.0 |
| **PHAR 471E** IPPE 1 – Community Pharmacy Practice | 4.5 |  | **PHAR 472E** IPPE 2 - Patient Communication in Senior Chronic Care | 0.5 |
| **Subtotal** | **21.5** |  | **Subtotal** | **17.5** |

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| **3rd Year FALL Core Courses** | **Units** |  | **3rd Year SPRING Core Courses** | **Units** |
| **PHAR 501** PTMM — Gastroenterology | 3.0 |  | **PHAR 506** PTMM — Infectious Disease | 4.0 |
| **PHAR 502** PTMM — Endocrinology and Urology | 3.0 |  | **PHAR 507** PTMM — Hematology/Oncology | 3.0 |
| **PHAR 503** PTMM — Neurology and Psychiatry | 4.0 |  | **PHAR 508** PTMM — Pulmonology, Ophthalmology, Immunology, and Rheumatology | 3.0 |
| **PHAR 550** Professional Development 5: IPE Clinic | 1.0 |  | **PHAR 552** Pre-APPE Readiness | 1.5 |
| **PHAR 571E** IPPE 3 Health Systems Pharmacy Practice | 3.0 |  | **PHAR 572-575** Certificate Experience Elective | 3.0 |
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| **Didactic Certificate Electives** | 6.0 |  | **Didactic Certificate Electives** | 6.0 |
| **Subtotal** | **20.0** |  | **Subtotal** | **20.5** |

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| **4th Year FALL Core Courses** | **Units** |  | **4th Year SPRING Core Courses** | **Units** |
| **PHAR 600E** Advanced Community Practice APPE | 6.0 |  | **PHAR 6010E, 620-631** Direct Patient Care APPE | 6.0 |
| **PHAR 601E** Advanced Health-System Practice APPE | 6.0 |  | **PHAR 611E, 620-631E, 650-656E, 672-676E** Elective APPE | 12.0 |
| **PHAR 602E** Ambulatory Care APPE | 6.0 |  | **PHAR 640** Pharmacy Capstone Seminar | 1.5 |
| **PHAR 603E** Acute Care APPE | 6.0 |  |  |  |
| **Subtotal** | **24.0** |  | **Subtotal** | **19.5** |

* **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.
* **PTMM** = Pharmacotherapy and Medication Management

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

**Includes three rotations that will take place during the second (P-2) and third (P-3) 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 (40hrs/week for 6 weeks for 7 rotations).

PharmD graduates will also receive a certificate of choice in one of four areas: Medical and Clinical Affairs (MCA), Healthcare Management (HCM), Health Information Technology (HIT), or Medication Therapy Outcome (MTO). Below are the required and elective courses to successfully complete each certificate.

**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.

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| **Medical and Clinical Affairs** | | |
| **ALS 359** Introduction to the Biosciences Industries | | 3.0 |
| **ALS 362** Introduction to US Food and Drug Law | | 1.5 |
| **ALS 433** Design of Clinical Trials, Conduct, and Strategy | | 1.5 |
| **ALS 463** Current Issues for FDA Regulated Products | | 1.5 |
| **PHAR 520** Pharmaceutical Marketing | | 3.0 |
| **PHAR 563** Fundamentals of Medical Affairs | | 1.5 |
|  | |  |
| **Total** | **12.0 units** | |

**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.

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| **Healthcare Management (HCM)** | |
| **ALS 424** Business Operations | 3.0 |
| **ALS 451** Organizational Behavior | 3.0 |
| **PHAR 513** Healthcare Finance and Reimbursement | 1.5 |
| **PHAR 514** Quality and Performance Improvement | 1.5 |
| **PHAR 542** Applying Technology to the Medication Use Process | 3.0 |
| **Total** | **12.0 units** |

**Health Information Technology (HIT)**

The HIT 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.

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| **Health Information Technology (HIT)** | |
| **PHAR 540** Electronic Health Records | 3.0 |
| **PHAR 541** Clinical Decision Support Systems | 1.5 |
| **PHAR 542** Applying Technology to the Medication Use Process | 3.0 |
| **PHAR 543** Planning, Implementing and Optimizing Systems | 1.5 |
| **PHAR 544** Security, Privacy, Law and Ethics | 1.5 |
| **PHAR 545** Achieving Medication Safety through Informatics | 1.5 |
| **Total** | **12.0 units** |

**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. There are required and elective courses in this certificate. Students are required to complete 12 units from the list below.

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| **Medical Therapy Outcomes (MTO)** | |
| **PHAR 580** MTO Core – Current Topics in Pharmacy Practice | 3.0 |
| **PHAR 581** Advanced Topics in Drug Interactions | 1.5 |
| **PHAR 582** Critical Care | 1.5 |
| **PHAR 587** Medication Therapy Outcomes Elective: Nutrition Support | 1.5 |
| **PHAR 588** Geriatric Patient Care | 1.5 |
| **PHAR 590** Practical Aspects of Hematology/Oncology and Antimicrobial Stewardship | 1.5 |
| **PHAR 591** Pharmacists’ Patient Care Process (PPCP) | 1.5 |
| **PHAR 593** Cardiology | 1.5 |
| **PHAR 595** Neuropsychiatric Pharmacotherapy | 1.5 |
| **PHAR 596** Travel Health | 1.5 |
| **PHAR 598** Independent Research in Oncology | 1.5 |
| **Total** | **18.0 units** |