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 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.

<table>
<thead>
<tr>
<th>1st Year FALL Core Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 310 Pharmacetics and Biopharmaceutics</td>
<td>3.0</td>
</tr>
<tr>
<td>PHAR 311 Pharmaceutical Calculations</td>
<td>2.0</td>
</tr>
<tr>
<td>PHAR 315 Principles of Drug Action</td>
<td>4.5</td>
</tr>
<tr>
<td>PHAR 325 Integrated Series 1 – Introduction to Pharmacy Practice</td>
<td>5.0</td>
</tr>
<tr>
<td>PHAR 332 Biostatistics</td>
<td>2.5</td>
</tr>
<tr>
<td>PHAR 350 Professional Development Series 1</td>
<td>1.0</td>
</tr>
<tr>
<td>PHAR 360 Recitation 1</td>
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</table>

Subtotal | 19.0 |

<table>
<thead>
<tr>
<th>1st Year SPRING Core Courses</th>
<th>Units</th>
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<tbody>
<tr>
<td>PHAR 318 Pharmacokinetics</td>
<td>3.0</td>
</tr>
<tr>
<td>PHAR 321 Pharmacy Law and Ethics</td>
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</tr>
<tr>
<td>PHAR 335 Integrated Series 2 – Endocrinology and Urology</td>
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<tr>
<td>PHAR 342 Drug Information, Study Design, and Literature Evaluation</td>
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</tr>
<tr>
<td>PHAR 351 Professional Development Series 2</td>
<td>1.0</td>
</tr>
<tr>
<td>PHAR 365 Recitation 2</td>
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</tr>
<tr>
<td>PHAR 370 Introduction to Industry</td>
<td>2.0</td>
</tr>
<tr>
<td>PHAR375 Pre-IPPE Readiness and Patient Assessment</td>
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Subtotal | 19.0 |

<table>
<thead>
<tr>
<th>2nd Year FALL Core Courses</th>
<th>Units</th>
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<tbody>
<tr>
<td>PHAR 420 Pharmacy Management</td>
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<tr>
<td>PHAR 425 Integrated Series 3 – Cardiology</td>
<td>6.0</td>
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<tr>
<td>PHAR 430 Introduction to Pharmacy Informatics</td>
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<tr>
<td>PHAR 435 Integrated Series 4 – Nephrology</td>
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<tr>
<td>PHAR 450 Professional Development Series 3</td>
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<tr>
<td>PHAR 460 Recitation 3</td>
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<tr>
<td>PHAR 471E IPPE 1 – Community Pharmacy Practice</td>
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</table>

Subtotal | 20.5 |

<table>
<thead>
<tr>
<th>2nd Year SPRING Core Courses</th>
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<tbody>
<tr>
<td>PHAR 411 Sterile Products</td>
<td>1.0</td>
</tr>
<tr>
<td>PHAR 421 Pharmacoeconomics and Pharmacovigilance</td>
<td>2.0</td>
</tr>
<tr>
<td>PHAR 428 Health Care Delivery</td>
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<tr>
<td>PHAR 445 Integrated Series 5 – Immunology, Rheumatology, and Dermatology</td>
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<tr>
<td>PHAR 455 Integrated Series 6 – Infectious Disease</td>
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<tr>
<td>PHAR 451 Professional Development Series 4</td>
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<td>PHAR 465 Recitation 4</td>
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<tr>
<td>PHAR 472E IPPE 2 – Patient Communication in Senior Chronic Care</td>
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</table>

Subtotal | 18.5 |
KGI School of Pharmacy and Health Sciences
Graduation Requirements
Doctor of Pharmacy (PharmD) Class of 2024

<table>
<thead>
<tr>
<th>3rd Year FALL Core Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 515 Integrated Series 7 – Neurology and Psychiatry</td>
<td>6.0</td>
</tr>
<tr>
<td>PHAR 525 Integrated Series 8 – Gastroenterology</td>
<td>4.0</td>
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<tr>
<td>PHAR 552 Pre-APPE Readiness 1</td>
<td>1.5</td>
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<tr>
<td>PHAR 560 Recitation 5</td>
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<tr>
<td>PHAR 571E IPPE 3 – Health Systems Pharmacy Practice</td>
<td>3.0</td>
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<tr>
<td>Didactic Certificate Electives</td>
<td>4.5-6.0</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>20.0-21.5</strong></td>
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<table>
<thead>
<tr>
<th>3rd Year SPRING Core Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 535 Integrated Series 9 – Hematology and Oncology</td>
<td>6.0</td>
</tr>
<tr>
<td>PHAR 555 Integrated Series 10 – Pulmonology and Ophthalmology</td>
<td>1.0</td>
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<tr>
<td>PHAR 553 Pre-APPE Readiness 2</td>
<td>1.5</td>
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<tr>
<td>PHAR 565 Recitation 6</td>
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<tr>
<td>PHAR 572-575 Certificate Experience Elective</td>
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<tr>
<td>Didactic Certificate Electives</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<table>
<thead>
<tr>
<th>4th Year FALL Core Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 600E Advanced Community Practice APPE</td>
<td>6.0</td>
</tr>
<tr>
<td>PHAR 601E Advanced Health-System Practice APPE</td>
<td>6.0</td>
</tr>
<tr>
<td>PHAR 602E Ambulatory Care APPE</td>
<td>6.0</td>
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<tr>
<td>PHAR 603E General Medicine APPE</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>24.0</strong></td>
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</table>

<table>
<thead>
<tr>
<th>4th Year SPRING Core Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 6010E, 620-631 Direct Patient Care APPE</td>
<td>6.0</td>
</tr>
<tr>
<td>PHAR 611E, 620-631E, 650-656E, 672-676E Elective APPE</td>
<td>12.0</td>
</tr>
<tr>
<td>PHAR 640 Pharmacy Capstone Seminar</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>19.5</strong></td>
</tr>
</tbody>
</table>

- **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 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 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).

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.

<table>
<thead>
<tr>
<th>Medical and Clinical Affairs</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS 359 Introduction to the Biosciences Industries</td>
<td>3.0</td>
</tr>
<tr>
<td>ALS 362 Introduction to US Food and Drug Law</td>
<td>1.5</td>
</tr>
<tr>
<td>ALS 433 Design of Clinical Trials, Conduct, and Strategy</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 520 Pharmaceutical Marketing</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 563 Fundamentals of Medical Affairs</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9.0 units</strong></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Healthcare Management (HCM)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS 451 Organizational Behavior</td>
<td>3.0</td>
</tr>
<tr>
<td>PHAR 513 Healthcare Finance and Reimbursement</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 514 Quality and Performance Improvement</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 542 Applying Technology to the Medication Use Process</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9.0 units</strong></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Health Information Technology (HIT)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 541 Clinical Decision Support Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 542 Applying Technology to the Medication Use Process</td>
<td>3.0</td>
</tr>
<tr>
<td>PHAR 543 Planning, Implementing and Optimizing Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 544 Security, Privacy, Law and Ethics</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 545 Achieving Medication Safety through Informatics</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9.0 units</strong></td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Medical Therapy Outcomes (MTO)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PHAR 581 Advanced Topics in Drug Interactions</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 582 Critical Care*</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 587 Nutrition Support*</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 588 Geriatric Patient Care</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 589 Oncology and Palliative Care</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 591 Pharmacists’ Patient Care Process (PPCP)*</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 593 Cardiology*</td>
<td>1.5</td>
</tr>
<tr>
<td>PHAR 595 Neuropsychiatric Pharmacotherapy</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12.0 units</strong></td>
</tr>
</tbody>
</table>

*denotes the four options for required MTO certificate courses electives for all PharmD students