

PHARMACY PROGRAMS

Pharmacy Mission

Our mission is to provide an exemplary educational experience that leads to highly competent and practice-ready caring pharmacists and pharmaceutical scientists who are accountable for improving the health and well-being of society. The programs seek to advance knowledge through collaborative education, science, research, service, patient care and advocacy. The school strives to achieve academic and professional excellence.

By virtue of their innate abilities and their education and experiences at Pacific, our graduates are:

- accomplished and compassionate practitioners dedicated to improving inpatient care in traditional and emerging roles in all practice settings;
- capable of critical thinking, problem solving and strong individual and team leadership;
- filled with the desire, knowledge and skills to serve their diverse communities and professions locally, regionally, nationally and globally;
- able to advance the profession of pharmacy by providing high quality health care, innovative practice models and leadership in healthcare policy to meet the needs of an increasingly diverse population;
- able to advance the pharmaceutical sciences by developing cutting-edge research and contributing to scientific discovery;
- prepared and inspired to seek postgraduate and continuing professional development; and
- ambassadors for preventive health and wellness

Programs in Pharmacy and Pharmaceutical Sciences

The Thomas J. Long School of Pharmacy offers the Pre-Pharmacy Advantage program, Doctor of Pharmacy degree and graduate degrees in the pharmaceutical and chemical sciences.

Pre-Pharmacy Advantage Program

The University of Pacific offers first-time undergraduate freshmen three options that can lead to guaranteed admission into Pacific's Doctor of Pharmacy program. The options are the five-year (2+3) Pre-Pharmacy/PharmD option, the six-year (3+3) Pre-Pharmacy/PharmD option and the seven-year (4+3) Bachelor's/PharmD option. Specific admission criteria for each ensure that students have the appropriate time to successfully prepare for advancement into the professional pharmacy program. Interested students should request information about the Pacific Pre-Pharmacy Advantage Program from the Admissions Office or visit <https://pharmacy.pacific.edu/pharmacy/pre-pharmacy> (<https://pharmacy.pacific.edu/pharmacy/pre-pharmacy/>). More specific program information is provided in the section on the Pre-Pharmacy Advantage Program.

Doctor of Pharmacy Program

The Doctor of Pharmacy Program is an accelerated program designed to develop pharmacy practitioners who are able to enter community and hospital pharmacy practice, residencies, and other roles in pharmacy and health care. Satisfactory completion of the Doctor of Pharmacy degree enables a student to sit for pharmacy licensing examinations throughout the United States, and eventually practice pharmacy. The basic residence requirement for completion of the Doctor of Pharmacy degree is eight

semesters, which is completed in approximately two and two-thirds years. This has been made possible by utilizing the summer months for instruction, thus providing the same number of instructional semesters as in four academic years. The first two years of the program include on campus course work plus introductory pharmacy practice experiences.

The final year of the program consists of advanced pharmacy practice experiences in health care settings. More specific program information is provided in the section on the Doctor of Pharmacy program.

Accreditation

Organized in 1955, the Thomas J. Long School of Pharmacy is a member of the American Association of Colleges of Pharmacy, and its Doctor of Pharmacy Program is fully accredited by the Accreditation Council for Pharmacy Education (ACPE). Accreditation information can be found online at <http://www.acpe-accredit.org/> or by contacting:

ACPE
20 North Clark Street, Suite 2500
Chicago, IL 60602-5109
Phone: (312) 664-3575
Fax: (312) 664-4652
E-mail: info@acpe-accredit.org

Pharmacy Licensure

For California pharmacy licensure requirements see <http://www.pharmacy.ca.gov/> or contact:

the California State Board of Pharmacy
1625 N. Market Blvd., Suite N219
Sacramento, CA 95834

Contact information for boards of pharmacy from other states can be found through the National Association of Boards of Pharmacy at <http://www.nabp.net/>.

Learner (Learner)

Develop, integrate, and apply knowledge from the foundational sciences (i.e. biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care.

Patient-centered care (Caregiver)

Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

Medication use systems management (Manager)

Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

Health and wellness (Promoter)

Design prevention, intervention, and educational strategies for individuals and communities to manage common disease and improve health and wellness.

Population-based care (Provider)

Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

Problem Solving (Problem Solver)

Design, implement, and evaluate a viable solution to identified problems through exploration and prioritization of strategies.

Educator (Educator)

Educate all audiences by determining the most effective and enduring techniques and strategies to impart information, achieve learning objectives, and assess understanding.

Patient Advocacy (Advocate)

Assure that patients' best interests are represented.

Interprofessional collaboration (Collaborator)

Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.

Cultural sensitivity (Includer)

Recognize social determinants of health to diminish disparities and inequities in access to quality care.

Communication (Communicator)

Clearly communicate when interacting with an individual, group, or organization.

Self-awareness (Self-aware)

Examine and reflect on personal and professional knowledge, skills, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

Leadership (Leader)

Demonstrate responsibility for creating and achieving personal and shared goals, regardless of position.

Innovation and Entrepreneurship (Innovator)

Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

Professionalism (Professional)

Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

Pre-Pharmacy Advantage Program

In order to earn a guaranteed seat in the Doctor of Pharmacy program, all of the following criteria must be met within 5 (five) years of entering the University; all seven-year (4+3) students must also obtain a Bachelors degree (BS or BA) from Pacific in addition to these criteria. A *Math/Science** GPA of 2.7 (by June 1st of the year the student matriculates to the Doctor of Pharmacy program) and a *cumulative Pacific* GPA of 3.0 must be achieved.

**The Math/Science GPA does not include all math and science courses. For a specific list of Math/Science courses, please contact the Office of Pre-Pharmacy and Pre-Health Affairs at PreHealth@pacific.edu or (209) 946-2563.*

I. General Education Requirements

For more details, see General Education (<http://catalog.pacific.edu/stocktongeneral/generaleducationprogram/>)

Minimum 28 units and 9 courses that include:

A. CORE Seminars (2 courses)

CORE 001	Problem Solving & Oral Comm	3
CORE 002	Writing and Critical Thinking	4

Note: 1) CORE Seminars cannot be taken for Pass/No Credit. **2)**

Transfer students with 28 or more transfer credits taken after high school are exempt from both CORE seminars. Students participating in the First Year Honors Program should complete an honors section of CORE 001 regardless of the number of college transfer units completed.

B. Breadth Requirement (7 courses, at least 3 units each)

At least one course from each of the following areas:

Artistic Process & Creation
Civic & Global Responsibility
Language & Narratives
Quantitative Reasoning
Scientific Inquiry
Social Inquiry
World Perspectives & Ethics

Note: 1) No more than 2 courses from a single discipline can be used to meet the Breadth Requirement.

C. Diversity and Inclusion Requirement

All students must complete Diversity and Inclusion coursework (at least 3 units)

Note: 1) The diversity requirement only applies to students obtaining a bachelor's degree. **2)** Diversity and Inclusion courses can also be used to meet the breadth category requirements, or major or minor requirements.

D. Fundamental Skills

Students must demonstrate competence in:

Writing
Quantitative Analysis (Math)

Note: 1) Failure to satisfy the fundamental skills requirements by the end of four semesters of full-time study at the University is grounds for academic disqualification.

II. Major Requirements

BIOL 051	Principles of Biology	5
BIOL 061	Principles of Biology	5
BIOL 145	Microbiology	5
BIOL 180	Human Physiology	5
CHEM 025	General Chemistry	5
CHEM 027	General Chemistry	5
CHEM 121	Organic Chemistry	5
CHEM 123	Organic Chemistry	5
PRAC 101	Pharmacy Orientation	1
Select one of the following:		5
PHYS 023	General Physics I	
PHYS 025	General Physics II	
PHYS 053	Principles of Physics I	
PHYS 055	Principles of Physics II	
Select one of the following:		4
MATH 033	Elements of Calculus	
MATH 051	Calculus I	
MATH 053	Calculus II	
MATH 055	Calculus III	
COMM 027	Public Speaking	3

Select one of the following:	4
PSYC 017 Abnormal and Clinical Psychology	
PSYC 031 Introduction to Psychology	
Select one of the following:	3-4
ECON 051 Economic Principles and Problems	
ECON 055 Introductory Macroeconomics: Theory and Policy	
Two positive Letters of Reference*	
* References cannot be from an immediate family member	
Passing Writing Sample	
Passing Interview	

Admission into the Doctor of Pharmacy Program

There are two pathways for admission into the Doctor of Pharmacy Program: 1) Pacific's Pre-Pharmacy Advantage Program; and 2) application as a transfer student from another college, university, or program within the University of the Pacific. The criteria for advancement from the Pre-Pharmacy Advantage Program to the Doctor of Pharmacy program are provided in the description of the Pre-Pharmacy program.

For information about admission to the Doctor of Pharmacy Program as a transfer student, see the "Special Requirements for Pharmacy Applicants" section under Admission Requirements at the front of this catalog or information provided on the University's website at <http://www.pacific.edu/pharmd> (<http://www.pacific.edu/pharmd/>). The pharmacy faculty determines admission requirements and the Office of Pharmacy Admission manages the admissions process. Questions regarding admission are directed to the Office of Pharmacy Admission. The program places strong emphasis on the academic record, verbal and written communication skills, demonstrated interest and experience in healthcare and leadership qualities in the selection process. The School attempts to select students with strength in all of these areas. After review of the completed application, the Office of Pharmacy Admission invites qualified candidates to participate in interviews on campus, which includes a writing demonstration. Admissions decisions are based on the application, transcripts, letters of recommendation, the interviews and the writing sample.

Pharmacy Pre-Professional Curriculum Requirements

At least sixty eight (68) transferable semester units are required prior to entry into the Doctor of Pharmacy program. Those courses are listed below. The liberal arts requirements must total a minimum of twenty eight (28) semester or forty two (42) quarter units. No more than two semester units of physical education are used to fulfill the electives requirements. These requirements will be satisfied by successful completion of the Pre-Pharmacy Advantage program, which is described in detail in that section.

- Mathematics: One semester of college-level calculus or its equivalent.
- Physics: One semester/quarter of college-level physics (with laboratory) or its equivalent.
- Chemistry: (1) General chemistry with lab, eight semester units minimum and (2) organic chemistry with lab, eight semester units minimum. Coursework is designed for chemistry or biology majors.
- Biological Sciences: General biology, eight semester units with laboratory both semesters; coursework may include two semesters zoology, one semester each botany and zoology, or two semesters of general biology designed for biology majors; general microbiology, four units; human physiology with laboratory, 4 units.
- Writing for College or equivalent: One semester, minimum.
- Reading for College or equivalent: One semester, minimum.
- Public Speaking: Three semester/four quarter units, minimum.

- Psychology: One semester, minimum.
- Economics: Three semester/four quarter units, minimum.
- General Education: At least one three semester/four quarter unit course from each non-science category of the University of the Pacific's General Education Program.

Students must pass the fundamental skills competency in quantitative skills and writing and satisfy any general education and liberal arts course requirements not completed in pre-pharmacy. Students who enter the Doctor of Pharmacy program with a U.S. baccalaureate degree and students who have met the General Education requirements of another college or university are not required to meet the University General Education requirements. These requirements are listed elsewhere in this catalog.

Applicants are also strongly encouraged to take course work in human physiology. Although not yet a requirement, physiology will eventually become a requirement for entrance into the Doctor of Pharmacy program.

These pre-professional requirements simply make the candidate eligible for selection. Final selection is based on recommendations, personal factors and strength of academic preparation. Applicants are urged to communicate with the University of the Pacific's Pharmacy Admissions Office regarding questions on the above requirements.

Other Entrance and Progression Requirements

Entrance and progression in the Doctor of Pharmacy program requires that students provide documentation of receiving the required immunizations and disease screening. Students must also meet certain technical standards (see here (<https://www.pacific.edu/admission/graduate-programs/apply-now/pharmacy/pharmd-technical-standards.html>)) for entrance into and progression through the Doctor of Pharmacy program. Students must also be eligible for registration as a pharmacy intern in the state of California.

Participation in introductory and advanced pharmacy practice experiences requires a California pharmacy intern license. Program and pharmacy practice experience requirements also include required drug screening and background checks.

Academic Standards

Students must successfully pass each required course in each semester in order to be allowed to fully enroll in the subsequent semester. Because of the integrated nature of the pharmacy curriculum, students are only permitted to enroll in pharmacy courses in which they have met all prerequisites.

Academic Status	Proposed Criteria	
Consequence		
Good Standing	Cumulative GPA >2.00	
Advance in the curriculum and graduate if has passed all courses		
Warning	Semester GPA < 2.00 and/or	
Receives a Warning Letter	2 or more Ds in required courses in a semester	
Probation	Cumulative GPA < 2.00 and/or	Able
to advance to semester 6.	1 grade of F or NC in any required course	Not
	able to advance to APPEs or graduate.	
restrictions apply*		Other
Disqualification	2 or more Fs and/or NC in required	May
petition for a deferred disqualification, which is		

course(s) and/or followed by a mandatory program of study with 6 or more Ds in required courses performance criteria

Students must pass all required courses. A grade of C or better is required to pass the six advanced pharmacy practice experiences in semesters 7 and 8 of the program. In other courses, a grade of D or better is required.

Students must be in good academic standing, have completed and passed all required courses and 4 units of electives, maintain an active pharmacy intern license, be certified in basic life support, adhere to professional and academic codes of conduct, have passed all curriculum assessments, and meet all other requirements for participation in pharmacy experiences (such as background checks, drug screening, etc.) prior to be allowed to progress from the 2nd year into the advanced pharmacy practice experiences in the 3rd year of the program.

Professional Curriculum for the Doctor of Pharmacy Degree

The Doctor of Pharmacy curriculum is carefully designed to progressively develop student abilities to meet program learning outcomes, accreditation standards, and the needs of the profession. Students must complete a minimum of 144 units as outlined below. The curriculum includes required didactic, laboratory, discussion and experiential courses in addition to a broad array of elective courses. An extensive co-curriculum supplements the curriculum and provides opportunities for further development of student abilities.

Note: The following courses must be taken in the prescribed semester sequence because of the integrated nature of the pharmacy curriculum. The IPPEs noted below with the '#' mark can be taken in Semesters 3, 4 or 5. A grade of C or better is required to pass Practicum II to IV courses in semesters 3 through 6 and the advanced pharmacy practice experiences in semesters 7 and 8. [IPPE stands for Introductory Pharmacy Practice Experiences and APPE stands for Advanced Pharmacy Practice Experiences.]

Semester 1

PHAR 111	Physiology I	4
PHAR 115	Dispensing, Compounding, and Calculations	3
PHAR 116	Principles of Biological Mechanisms	4
PHAR 117	Principles and Application of Dosage Forms	4
PHAR 121	Professional Communications	1
PHAR 122	Bioinformatics	1
PHAR 131	Pharmacy Skills I – Introduction to Patient Workup	2
PHAR 669	Interprofessional Education	0
Total Hours		19

Semester 2

PHAR 211	Physiology II	4
PHAR 212	Introduction to Pharmacology	2
PHAR 213	Drug Disposition I	3
PHAR 221	Biostatistics and Research Design	2
PHAR 231	Pharmacy Skills II-Outpatient Care	1
PHAR 232	Clinical Assessment	1
PHAR 241	Nonprescription Therapy and Self Care	2
PHAR 251	Community I Introductory Pharmacy Practice Experience (IPPE)	2

Elective(s) *		0-3
PHAR 669	Interprofessional Education	0
Total Hours		17-20

Semester 3

PHAR 311	Drug Disposition II	3
PHAR 321	Health Care Delivery Systems I and Pharmacoeconomics	2
PHAR 331	Pharmacy Skills III- Assessment and Counseling	1
PHAR 332	Case Based Practice I	1
PHAR 341	Integrated Clinical Sciences: Cardiovascular Disease I – Foundations	3
PHAR 342	Integrated Clinical Sciences: Cardiovascular Disease II - Therapeutics	3
PHAR 343	Integrated Clinical Sciences: Endocrine Disorders	2
PHAR 551	Community II Introductory Pharmacy Practice Experience (IPPE)	2
PHAR 669	Interprofessional Education	0
Elective(s)*		0-3
Total Hours		17-20

Semester 4

PHAR 411	Physiology III: Immunology	1
PHAR 421	Health Care Delivery Systems II	2
PHAR 431	Pharmacy Skills IV: Inpatient Care	1
PHAR 432	Case Based Practice II	1
PHAR 441	Integrated Clinical Sciences: Neuropsychiatric Disorders I - Foundations	2
PHAR 442	Integrated Clinical Sciences: Neuropsychiatric Disorders II - Therapeutics	4
PHAR 443	Integrated Clinical Sciences: Gastrointestinal, Nutrition and Renal Disorders	4
PHAR 669	Interprofessional Education	0
Hospital IPPE, Ambulatory Care IPPE, or none # @		0-2
Elective(s) *		0-3
Total Hours		15-20

Semester 5

PHAR 521	Pharmacy Practice Management	3
PHAR 531	Pharmacy Skills V: Professional Communications	1
PHAR 532	Case Based Practice III	1
PHAR 541	Integrated Course Series - Infectious Diseases I Fundamentals	2
PHAR 542	Integrated Course Series – Infectious Diseases II Applications	4
PHAR 543	Integrated Clinical Sciences: Women's, Men's & Genitourinary Disorders	2
PHAR 544	Integrated Clinical Sciences: Pulmonary & Ear, Nose and Throat Therapeutics	1
PHAR 559	Health Care Outreach Introductory Pharmacy Practice Experience (HCO IPPE) §	1
PHAR 669	Interprofessional Education	0
Hospital IPPE, Ambulatory Care IPPE, or none # @		0-2
Elective(s) *		0-3
Total Hours		15-20

Semester 6

PHAR 621	Pharmacy Law and Regulatory Affairs	3
PHAR 631	APPE Preparedness	1
PHAR 632	Case Based Practice IV	1
PHAR 641	Integrated Clinical Sciences: Immune, Inflammatory & Pain Disorders	3
PHAR 642	Integrated Clinical Sciences: Pediatrics and Geriatrics	2
PHAR 643	Integrated Clinical Sciences: Oncology	4
PHAR 644	Integrated Clinical Sciences: Critical Care & Emergency Medicine	1
PHAR 669	Interprofessional Education	1
PHAR 553	Ambulatory Care Introductory Pharmacy Practice Experience (IPPE) [@]	1
Elective(s) [*]		0-3
Total Hours		17-20

Semester 7 and 8

PHAR 751	Advanced Pharmacy Practice Experience (APPE) Capstone I	1
PHAR 752	Advanced Pharmacy Practice Experience (APPE) Capstone II	1
PHAR 753	Internal Medicine Advanced Pharmacy Practice Experience (APPE)	6
PHAR 754	Ambulatory Care Advanced Pharmacy Practice Experience (APPE)	6
PHAR 755	Hospital Pharmacy Advanced Pharmacy Practice Experience (APPE)	6
PHAR 756	Community Pharmacy Advanced Pharmacy Practice Experience (APPE)	6
PHAR 757	Advanced Pharmacy Practice Experience (APPE) Elective I	6
PHAR 758	Advanced Pharmacy Practice Experience (APPE) Elective II	6
Total Hours		38

Total Unit: ** 144

* A total of 4 or more units of approved pharmacy electives must be taken by the end of Semester #6

PHAR 552 Hospital IPPE A and PHAR 554 Hospital IPPE B are usually taken together in either Semester #4 or #5 as scheduled by the Office of Professional Affairs. PHAR 555 may be taken instead of the combination of PHAR 552 Hospital IPPE A (1 unit) and PHAR 554 Hospital IPPE B (1 unit).

@ PHAR 553 Ambulatory Care IPPE is taken Semester #4, #5 or #6 as scheduled by the Office of Professional Programs. The requirement for PHAR 553 can be met by PRAC 143 Health Care Outreach IPPE- Medicare Part D

\$ The requirement for PHAR 559 Health Care Outreach IPPE can be met by PRAC 143 Health Care Outreach IPPE- Medicare Part D

** A total of 143 units will be required for graduation for those who take PRAC 143 Health Care Outreach IPPE- Medicare Part D

Professional Electives

All candidates for the Doctor of Pharmacy degree are required to complete a minimum of four (4) semester units of approved electives

while in residence and prior to progression into the Advanced Pharmacy Practice Experiences.

Students are also required to complete twelve (12) semester units of elective advanced pharmacy practice experiences in the final year of the program.

Professional electives include approved pharmacy electives and other approved courses from the University and select external institutions. Students may petition to have an unapproved course count as a professional elective, but the course will only be allowed to count as a professional elective if the petition is approved prior to enrollment in the course.

Courses that are not eligible to be included as professional electives include courses taken: during the pre-professional education; during the Pre-Pharmacy Advantage program; while not in residence in the Doctor of Pharmacy program; or to fulfill a general education or liberal arts requirement (even if taken when the student is in residence in the Doctor of Pharmacy program).

Pharmacy Practice Experience and Practice Experience Placement Policy

All pharmacy students are required to complete introductory and advanced pharmacy practice experiences as part of their formal program of study. The total number of hours spent in introductory and advanced pharmacy practice experiences will meet or exceed accreditation requirements and the number of pharmacy intern hours required for application for pharmacy licensure in California if students follow the appropriate procedures for documentation and signatures.

The introductory pharmacy practice experiences include experiences in community pharmacy, hospital pharmacy, ambulatory care, and health care outreach during the first six semesters of the program. The advanced practice experience consists of two semesters third year (7th and 8th semesters) where students are required to enroll in four required six-week rotations that include Community, Hospital, Ambulatory Care and Internal Medicine advanced pharmacy practice experiences plus two six-week elective rotations and two capstone courses.

The selection of the sites for introductory and advanced pharmacy practice experiences is made at the sole discretion of the University of the Pacific Thomas J. Long School of Pharmacy. Introductory pharmacy practice experiences generally occur within a one hour drive of the School. For advanced pharmacy practice experiences, each student is assigned to region within California or possibly other nearby states.

Graduation Requirements

Graduation requirements for each entering class are provided at the beginning of the first professional year for each student. Accreditation requirements and curriculum changes may necessitate changes in these requirements. The Thomas J. Long School of Pharmacy reserves the right to modify or change the curriculum at any time without prior notice.

Graduation requirements include passing all required courses and 4 units of elective course in semesters 1 through 6, becoming certified in basic life support, passing all curriculum outcomes assessments, and adhering to the program's professional and academic codes of conduct.

A grade point average of 2.00 (on a 4-point scale) is required for graduation in: (1) all required Doctor of Pharmacy courses and (2) all courses taken while in residence in the professional program.

Eight semesters of Thomas J. Long School of Pharmacy residency are required for the Doctor of Pharmacy programs. A semester in

residence consists of registering for a minimum of 12 semester units each semester.

All requirements for the Doctor of Pharmacy degree must be completed within five (5) calendar years of the student's initial enrollment in the Doctor of Pharmacy program.

Pharmacy Courses

PHAR 111. Physiology I. 4 Units.

This course will provide foundational physiological principles, and an introduction to the Nervous, Cardiovascular and Respiratory systems at organ, cellular and molecular levels.

PHAR 112. Chemical Principles. 2 Units.

A study of physicochemical properties of endogenous and drug molecules in the context of their biological and pharmaceutical relevance.

PHAR 113. Biological Mechanisms. 3 Units.

This course covers biological mechanisms at the molecular level with focus on rational drug design.

PHAR 114. Pharmaceutical Dosage Forms. 3 Units.

This course will provide foundational knowledge about the different traditional and advanced dosage forms. In this course, students will learn how the drug development and approval process work in the US. This will be followed by the introduction of physicochemical principles of pharmacy that form the basis in the design of rational formulation, preparation/compounding, quality control, stability, packaging and storage of pharmaceutical dosage forms.

PHAR 115. Dispensing, Compounding, and Calculations. 3 Units.

This course covers pharmacy dispensing related topics. Using medications from the Top Drugs list, students will learn how to provide effective consultations, how to communicate effectively with health care professionals, and the process of dispensing medications. Other topics covered in this course include Interpretation of common pharmacy sig abbreviations, brand and generic names of the top medications as well as the major therapeutic use for the majority of those drugs. Students will learn basic non-sterile compounding skills and parenteral compounding skills. This course also covers mathematical concepts as they apply to the practice of pharmacy.

PHAR 116. Principles of Biological Mechanisms. 4 Units.

This course covers the molecular structure of proteins, nucleic acids, and lipids and the biological mechanisms at the molecular level with focus on rational drug design. Students must be enrolled in the PharmD program.

PHAR 117. Principles and Application of Dosage Forms. 4 Units.

This course will provide foundational knowledge about physicochemical properties and different traditional and advanced dosage forms. In this course, students will learn how the drug development and approval process work in US. This will be followed by the introduction of physicochemical principles of pharmacy that form the basis in the design of rational formulation, preparation/compounding, quality control, stability, packaging, and storage of pharmaceutical dosage forms. Student must be enrolled in the PharmD program.

PHAR 121. Professional Communications. 1 Unit.

An introduction to the roles and responsibilities of the pharmacist in general and in various practice settings with a focus on fundamental pharmacy law and professional communications.

PHAR 122. Bioinformatics. 1 Unit.

This course will focus on the application of informatics to healthcare and the pharmacy profession and will use the global definition of informatics as an information science that involves the activities and processes associated with acquiring, storing, organizing, retrieving, processing, evaluating and presenting data and information. The course will focus on the ethical use of informatics primarily in patient care, but will also discuss its use in population based care and healthcare/health-system research. An introduction to presenting data and developing algorithms, methods, and tools for analyzing information to solve healthcare problems will also be included.

PHAR 131. Pharmacy Skills I – Introduction to Patient Workup. 2 Units.

Pharmacy practice skills and knowledge will be developed through completion of self-study modules and guided practice simulations. The practicum experiences relate to effective patient counseling for the most commonly prescribed and select non-prescription medications, pulmonary devices, and immunizations in addition to application of appropriate techniques for measurement of blood pressure, blood glucose and administration of immunizations for adolescents and adults.

PHAR 211. Physiology II. 4 Units.

This course is an integrated study of the cellular, anatomical, and physiological components of the gastrointestinal, renal, and endocrine systems. Prerequisites: PHAR 111, PHAR 112, PHAR 113, and PHAR 122.

PHAR 212. Introduction to Pharmacology. 2 Units.

This course will provide the foundational principles of pharmacology prior to the integrated course series. Prerequisites: PHAR 111, PHAR 112, PHAR 113, PHAR 114, PHAR 115, PHAR 122, and PHAR 211.

PHAR 213. Drug Disposition I. 3 Units.

This course is designed to introduce the basic pharmacokinetic concepts by focusing on the fundamental principles of absorption, distribution and elimination that govern drug behavior in the body. Prerequisites: PHAR 111, PHAR 112, PHAR 113, PHAR 114, PHAR 115, and PHAR 122.

PHAR 221. Biostatistics and Research Design. 2 Units.

This course will focus on the theory, methods and processes used in differing types of research designs seen in healthcare. It will also include information on and an analysis and discussion of the mathematical tools used in testing hypotheses and presenting and making sense of the data collected from research, especially data collected from random samples from the population. This will include a review of scientific methods, forming hypotheses, designing/analyzing interventional and observational studies, processes for gathering data, techniques for summarizing the data collected and drawing inferences from data. An introduction to probability and descriptive statistics will be presented, followed by detailed descriptions of widely used inferential procedures and statistical options. Journal articles from pharmacy, healthcare and epidemiology will be used as examples to enhance the discussions and improve understanding. Prerequisite: PHAR 122.

PHAR 231. Pharmacy Skills II-Outpatient Care. 1 Unit.

Pharmacy practice skills course will build on previous and current course knowledge and content and encompass the application to practice like activities and simulations. The skills based course experiences relate to effective patient counseling for the advanced dispensing of most commonly prescribed, select non-prescription medications including pharmacist furnishing of products such as Naloxone and Plan B, etc. Students will learn and practice the skills involved in over-the-counter (OTC) therapeutics, patient counseling and motivational interviewing. Students will learn how to gather subjective patient data using patient interviewing and history gathering techniques and how to collect objective patient data. Students will participate in simulated patient scenarios and/or cases using the Pharmacist Patient Care Process (PPCP) requiring students to navigate electronic health records (EHRs) to identify drug related therapy problems and develop drug therapy plans. Implementation, documentation, and communication of drug therapy plans will be developed using standardized formats such as SOAP (subjective objective assessment plan) notes and SBAR (situation background assessment recommendation) model. Prerequisites: PHAR 121 and PHAR 131.

PHAR 232. Clinical Assessment. 1 Unit.

Students will learn how to collect, evaluate, and assess clinical data such as laboratory values, physical assessment findings, and diagnostic tests using various written and electronic resources including electronic health records, electronic databases, and/or written patient case studies. Prerequisites: PHAR 121 and PHAR 131.

PHAR 241. Nonprescription Therapy and Self Care. 2 Units.

Principles of triage and self-care using non-prescription pharmacotherapy and dietary supplements. Prerequisites: PHAR 114, PHAR 115, PHAR 121, PHAR 122, and PHAR 131.

PHAR 251. Community I Introductory Pharmacy Practice Experience (IPPE). 2 Units.

A practice-based introductory experience focusing on the role of the Pharmacist/Pharmacy Intern in a community pharmacy practice. This course is designed to allow students to participate in the delivery of pharmaceutical care. Prerequisites: PHAR 114, PHAR 115, PHAR 121, PHAR 122, PHAR 131, and CPR certification.

PHAR 297. Research. 1-4 Units.**PHAR 311. Drug Disposition II. 3 Units.**

This course is designed to expand on the basic pharmacokinetic concepts cover in Drug Disposition I and covers drug metabolism, advanced and clinical pharmacokinetic concepts, pharmacodynamics, drug interactions and pharmacogenetics. Prerequisites: PHAR 211, PHAR 212, PHAR 213, PHAR 221, PHAR 231, PHAR 232, and PHAR 241.

PHAR 321. Health Care Delivery Systems I and Pharmacoeconomics. 2 Units.

The description and application of economic-based evaluation methods to pharmaceutical products, treatments and services. This includes understanding principles which will help decision makers maximize clinical and/or humanistic outcomes given economic constraints. Additionally, this course will provide an introduction to managed care, an overview of governmental health programs, and their respective roles in the US health care delivery system. Prerequisites: PHAR 121 and PHAR 221.

PHAR 331. Pharmacy Skills III- Assessment and Counseling. 1 Unit.

Pharmacy practice skills III will focus on the learning and development of patient care skills necessary for successful implementation and follow up of the Pharmacists Patient Care Process (PPCP). Patient assessment and communication skills will be learned, developed, and applied to patient care scenarios to identify, evaluate, correct, and prevent therapy related problems. Major topics will be barriers to adherence, delivery device technique and evaluation, nutrition and other non-drug therapies, medication history taking, limited physical assessments, conflict resolution, and other patient communication techniques. Prerequisites: PHAR 211, PHAR 212, PHAR 213, PHAR 221, PHAR 231, PHAR 232, and PHAR 241.

PHAR 332. Case Based Practice I. 1 Unit.

This is part of a series of Case Based Practice courses that develop problem solving and critical thinking skills. Knowledge acquired through the Integrated Clinical Sciences series will be applied in cumulative fashion through the workup of complex patient cases utilizing the pharmacist patient care process, presentation, discussion and documentation. Prerequisites: PHAR 211, PHAR 212, PHAR 213, PHAR 221, PHAR 231, PHAR 232, and PHAR 241.

PHAR 341. Integrated Clinical Sciences: Cardiovascular Disease I – Foundations. 3 Units.

This cardiovascular disease focused course is an integration of Pathophysiology, Pharmacology, and Medicinal Chemistry. The course will enable students to 1) acquire a fundamental understanding of the pathophysiology of the cardiovascular diseases, 2) describe and classify drugs into the major cardiovascular system based pharmacologic classes, and 3) describe select structure-activity relationships of cardiovascular classes of drugs along with their medicinal chemistry bases. Course content, discussion and case based learning will build on student's pre-requisite knowledge, placing in-depth and focused emphasis on cardiovascular science empowering students to make appropriate decisions regarding the selection and use of drug therapy for the management or prevention of disease. Prerequisites: PHAR 211, PHAR 212, PHAR 213, PHAR 221, PHAR 231, PHAR 232, and PHAR 241.

PHAR 342. Integrated Clinical Sciences: Cardiovascular Disease II - Therapeutics. 3 Units.

The cardiovascular therapeutics course will enable students to design and implement patient care plans for patients with or at risk of commonly encountered cardiovascular diseases. Students will learn and apply clinical science and evidence-based medicine with the goal of improving patient care and health outcomes. Course content, discussion and case based learning will build on student's pre-requisite knowledge, placing in-depth and focused emphasis on cardiovascular clinical science and therapeutics with the goal of empowering students to make appropriate decisions regarding the selection, use and monitoring of drug therapy for the management or prevention of cardiovascular diseases. Topics covered include; Hypertension, Hyperlipidemia, Coronary Artery Disease & Angina, Peripheral Arterial Disease, Acute Coronary Syndromes, Post-MI, Stent and CABG Therapeutics, Transient Ischemic Attack & Cerebrovascular Accidents, Heart Failure, Cardiogenic Shock, Venous Thromboembolism, Atrial Fibrillation & Stroke Prevention and Brady & Tachyarrhythmias. Prerequisites: PHAR 211, PHAR 212, PHAR 213, PHAR 221, PHAR 221, PHAR 231, PHAR 232, and PHAR 241.

PHAR 343. Integrated Clinical Sciences: Endocrine Disorders. 2 Units.

This is an integrative course combining pathophysiology, pharmacology, medicinal chemistry and therapeutics. Students will develop the abilities to assess and develop patient-specific care plans for patients with endocrine disorders, diabetes and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures, readings, and discussion will enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisites: PHAR 211, PHAR 212, PHAR 213, PHAR 221, PHAR 231, PHAR 232, and PHAR 241.

PHAR 397A. Research. 1-4 Units.**PHAR 411. Physiology III: Immunology. 1 Unit.**

Molecular and Cellular Basis of the Immune System. Prerequisites: PHAR 311, PHAR 331, PHAR 332, PHAR 341, PHAR 342, and PHAR 343.

PHAR 421. Health Care Delivery Systems II. 2 Units.

This social and behavioral based course will focus on the pharmacists role in various social and population based programs including the use of CLIA waivers to support point-of-care or clinic based laboratory testing, disease prevention (prediabetes, fall risk, etc.) programs and activities, major public health initiatives, the pharmacists role in public health campaigns, preventative care strategies (e.g., Immunization programs), refill clinics, telepharmacy, and crisis management (e.g. natural disaster, eco-political turmoil, disruption of supply chain and threats to usual methods of delivering pharmaceutical care). Prerequisite: PHAR 321.

PHAR 431. Pharmacy Skills IV: Inpatient Care. 1 Unit.

This course is a component of the longitudinal skills based curriculum. Skills III will include a focus on inpatient or hospital practice. The student will gain an understanding of inpatient workflow, pharmacist order verification and entry, sterile intravenous compounding and administration, order-set development, medication reconciliation, transition of care and drug monographs. Prerequisites: PHAR 311, PHAR 331, PHAR 332, PHAR 341, PHAR 342, and PHAR 343.

PHAR 432. Case Based Practice II. 1 Unit.

This is part of a series of Case Based Practice courses that develop problem solving and critical thinking skills. Knowledge acquired through the Integrated Clinical Sciences series will be applied in cumulative fashion through the workup of complex patient cases utilizing the pharmacist patient care process, presentation, discussion and documentation. Prerequisites: PHAR 311, PHAR 331, PHAR 332, PHAR 341, PHAR 342, and PHAR 343.

PHAR 441. Integrated Clinical Sciences: Neuropsychiatric Disorders I - Foundations. 2 Units.

This course discusses the molecular mechanisms of drug action and its relation to chemical structure. This course will cover how prototype therapeutic agents used in the treatment of neuropsychiatric and other disorders affect the peripheral and the central nervous system, both in terms of therapeutic and adverse effects. The emphasis of the course is placed on the molecular mechanisms by which these drugs alter the biochemistry, physiology and pathology of the nervous system, and on the structure-activity relationship (SAR) of these drugs. Prerequisites: PHAR 311, PHAR 331, PHAR 332, PHAR 341, PHAR 342, and PHAR 343.

PHAR 442. Integrated Clinical Sciences: Neuropsychiatric Disorders II - Therapeutics. 4 Units.

Students will develop the abilities to assess and develop patient-specific care plans for patients with specific neurologic and psychiatric conditions, diseases, disorders, and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures, readings, and discussion will enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisites: PHAR 311, PHAR 331, PHAR 332, PHAR 341, PHAR 342, and PHAR 343.

PHAR 443. Integrated Clinical Sciences: Gastrointestinal, Nutrition and Renal Disorders. 4 Units.

Students will develop the abilities to assess and develop patient-specific care plans for patients with gastrointestinal, hepatic, nutrition, and renal conditions, diseases, disorders, and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures and readings will provide the foundational information to understand and apply pathophysiologic and pharmacologic principles. Lectures, readings, and case applications will enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisites: PHAR 311, PHAR 331, PHAR 332, PHAR 341, PHAR 342, and PHAR 343.

PHAR 521. Pharmacy Practice Management. 3 Units.

This course provides an overview of human resource management and financial modeling applicable to pharmacy management; included a problem solving models, management decision-making models, and elements from bioethics and legal cases that pertain to management. Prerequisite: PHAR 421.

PHAR 531. Pharmacy Skills V: Professional Communications. 1 Unit.

Pharmacy practice skills course will build on previous and current course knowledge and content and encompass the application to practice-like activities and simulations. The skills based course experiences relate to effective communications in verbal and written form. Students will learn and practice the skills involved in responding to a drug information request, developing of a drug monograph, and conducting in-service presentations. Prerequisites: PHAR 411, PHAR 431, PHAR 432, PHAR 441, PHAR 442, and PHAR 443.

PHAR 532. Case Based Practice III. 1 Unit.

This is part of a series of Case Based Practice courses that develop problem solving and critical thinking skills. Knowledge acquired through the Integrated Clinical Sciences series will be applied in cumulative fashion through the workup of complex patient cases utilizing the pharmacist patient care process, presentation, discussion and documentation. Prerequisites: PHAR 411, PHAR 431, PHAR 432, PHAR 441, PHAR 442, and PHAR 443.

PHAR 541. Integrated Course Series - Infectious Diseases I Fundamentals. 2 Units.

Infectious Diseases I is an integrated course where students will learn the foundational concepts of medical microbiology and medicinal chemistry to be able to progress to the Infectious Diseases II Applications course and learn to care for patients with infectious diseases. Prerequisites: PHAR 411, PHAR 431, PHAR 432, PHAR 441, PHAR 442, and PHAR 443.

PHAR 542. Integrated Course Series – Infectious Diseases II Applications. 4 Units.

Infectious Diseases II is an integrated course where students will build up on the foundational concepts from the Infectious Diseases I course and develop further knowledge in clinical pharmacology, pharmacokinetics, pharmacodynamics and therapeutics in order to care for patients with infectious diseases. Prerequisites: PHAR 411, PHAR 431, PHAR 432, PHAR 441, PHAR 442, and PHAR 443.

PHAR 543. Integrated Clinical Sciences: Women's, Men's & Genitourinary Disorders. 2 Units.

This integrated clinical science course develops a student's abilities to manage patients with common women's health, men's health, and genitourinary conditions. Prior course work in the foundational sciences serve as the basis for the development of knowledge and application of pertinent pathophysiology, pharmacology, medicinal chemistry and therapeutics. Prerequisites: PHAR 411, PHAR 431, PHAR 432, PHAR 441, PHAR 442, and PHAR 443.

PHAR 544. Integrated Clinical Sciences: Pulmonary & Ear, Nose and Throat Therapeutics. 1 Unit.

Students will develop the abilities to assess and develop patient-specific care plans for patients with pulmonary/ENT diseases, disorders, and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures and readings will provide the foundational information to understand and apply pathophysiologic and pharmacologic principles. Lectures, readings, labs, and case applications will enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisites: PHAR 411, PHAR 431, PHAR 432, PHAR 441, PHAR 442, and PHAR 443.

PHAR 551. Community II Introductory Pharmacy Practice Experience (IPPE). 2 Units.

Community II Introductory Pharmacy Practice Experiences are a method to enhance each student's understanding of the role and responsibilities of pharmacists in the community setting and to gain experiences with the medication use system within a community pharmacy and expand the abilities developed in the Community I Introductory Pharmacy Practice Experience. Prerequisites: PHAR 251, Pharmacy Intern License, and CPR Certification.

PHAR 552. Hospital Introductory Pharmacy Practice Experience (IPPE) A. 1 Unit.

The Hospital IPPE A course enhances each student's understanding of the role of pharmacists throughout the medication use process in the hospital setting, with emphasis on selecting drug products, compounding, dispensing, monitoring and evaluation, communicating with patients and other health care professionals, and providing drug information. Prerequisites: PHAR 251, Pharmacy Intern License and CPR Certification.

PHAR 553. Ambulatory Care Introductory Pharmacy Practice Experience (IPPE). 1 Unit.

The Ambulatory Care IPPE enhances each student's understanding, participation, and commitment to enhancing the health of an ambulatory population. Students will work with healthcare professionals within a health care system and utilize stratification strategies to provide ambulatory population management activities. Students will evaluate electronic health information and document assessments and plans using standardized progress notes. Students will contact patients to provide information and education pertinent to health promotion and disease prevention and document those discussions in electronic health records. Work is conducted under the supervision of a licensed pharmacist. Prerequisites: PHAR 251, Pharmacy Intern License, and CPR Certification.

PHAR 554. Hospital Introductory Pharmacy Practice Experience (IPPE) B. 1 Unit.

The Hospital IPPE B course enhances each student's understanding of the role of pharmacists throughout the medication use process in the hospital setting, with emphasis on pharmacy operations and administration, regulatory and accreditation standards, communicating with patients and other health care professionals, and providing drug information. Prerequisites: PHAR 251, Pharmacy Intern License, and CPR Certification.

PHAR 555. Hospital IPPE. 2 Units.

The Hospital IPPE course enhances each student's understanding of the role of pharmacists throughout the medication use process in the hospital setting, with emphasis on pharmacy operations and administration, compounding, dispensing, and monitoring medications, regulatory and accreditation standards, communicating with patients and other health care professionals, and providing drug information.

PHAR 559. Health Care Outreach Introductory Pharmacy Practice Experience (HCO IPPE). 1 Unit.

Community health care outreach introductory pharmacy practice experiences are a method to enhance each student's understanding, participation, and commitment to enhancing the health of the public. Groups of students will work with community agencies and organizations in the development, organization, management, implementation, delivery, and assessment of health care outreach activities in local communities. Many of these activities will be managed through professional student organizations. Students will also reflect on their activities to determine the impact of these activities on the public and on themselves. Prerequisites: Pharmacy Intern License and CPR Certification.

PHAR 621. Pharmacy Law and Regulatory Affairs. 3 Units.

Discussions and analysis of federal and state law, regulations, standards of practice, case law and ethics related to pharmacy practice and drug development and distribution. The focus is California laws and regulations that govern the practice of pharmacy in community and institutional settings. Prerequisites: PHAR 521, PHAR 551, PHAR 552, PHAR 553, and PHAR 554.

PHAR 631. APPE Preparedness. 1 Unit.

This course brings the critical thinking, problem-solving skills, and knowledge acquired throughout the curriculum together to ensure students are best prepared to transition to the Advanced Pharmacy Practice Experiences (APPEs). Focus will be on effective workup of complex patient cases, applied pharmacokinetics, case presentation, SOAP/chart note documentation, drug information response, medication reconciliation, antimicrobial de-escalation, and common clinical protocols used at practice sites. Prerequisites: PHAR 521, PHAR 531, PHAR 532, PHAR 541, PHAR 542, PHAR 543, PHAR 544, PHAR 551, PHAR 552, PHAR 553, and PHAR 554.

PHAR 632. Case Based Practice IV. 1 Unit.

This is part of a series of Case Based Practice courses that develop problem solving and critical thinking skills. Knowledge acquired through the Integrated Clinical Sciences series will be applied in cumulative fashion through the workup of complex patient cases utilizing the pharmacist patient care process, presentation, discussion and documentation. Prerequisites: PHAR 531, PHAR 532, PHAR 541, PHAR 542, PHAR 543, and PHAR 544.

PHAR 641. Integrated Clinical Sciences: Immune, Inflammatory & Pain Disorders. 3 Units.

This integrated clinical science course develops a student's abilities to manage patients with common immune, pain, dermatologic, and ophthalmic conditions. Prior course work in the foundational sciences serve as the basis for the development of knowledge and application of pertinent pathophysiology, pharmacology, medicinal chemistry and therapeutics. Prerequisites: PHAR 531, PHAR 532, PHAR 541, PHAR 542, PHAR 543, and PHAR 544.

PHAR 642. Integrated Clinical Sciences: Pediatrics and Geriatrics. 2 Units.

This is an integrated course with both basic and clinical sciences. Students will develop the abilities to assess and develop pharmacy patient care plans (PPCP) for specific pediatric and geriatric conditions, diseases, disorders, and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures, readings, and discussion will enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisites: PHAR 531, PHAR 532, PHAR 541, PHAR 542, PHAR 543, and PHAR 544.

PHAR 643. Integrated Clinical Sciences: Oncology. 4 Units.

This integrated clinical science course develops students' abilities to manage patients with solid cancer and hematological malignancy or patients with high risk to have these conditions. Prior course work in the foundational sciences serve as the basis for the development of knowledge and application of pertinent pathophysiology, pharmacology, medicinal chemistry, and therapeutics. Prerequisites: PHAR 531, PHAR 532, PHAR 541, PHAR 542, PHAR 543, and PHAR 544.

PHAR 644. Integrated Clinical Sciences: Critical Care & Emergency Medicine. 1 Unit.

Students will develop the abilities to assess and develop patient-specific care plans for patients in emergency or critical care units with various diseases, disorders, and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures and readings will provide the foundational information to understand and apply pathophysiologic and pharmacologic principles. Lectures, readings, labs, and case applications will enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisites: PHAR 531, PHAR 532, PHAR 541, PHAR 542, PHAR 543, and PHAR 544.

PHAR 669. Interprofessional Education. 1 Unit.

This course is a longitudinal course which will provide pharmacy students with an opportunity to learn and collaborate with students from other health professions. These activities will generally include students from medical schools, nurse practitioner program, physician assistant program, dentistry, and/or other allied health professions. Prerequisite: Doctor of Pharmacy student.

PHAR 751. Advanced Pharmacy Practice Experience (APPE) Capstone I. 1 Unit.

This is the first of a required, two-semester sequential course for pharmacy students during their advanced pharmacy practice experiences. This course is designed to: 1) prepare students for practice in the profession of pharmacy, 2) build upon didactic knowledge gained previously in the Doctor of Pharmacy program, and 3) help students become life-long learners through self-assessment and reflection on learning. Course activities may include but are not limited to board exam preparation, quizzes, case presentations, disease state and/or drug information presentations/discussions, journal club presentations, self-reflection assignments, and/or guest lectures by pharmacists and other healthcare practitioners in addition to other region-specific activities. Prerequisites: All First and Second Year Required Doctor of Pharmacy Courses.

PHAR 752. Advanced Pharmacy Practice Experience (APPE) Capstone II. 1 Unit.

This is the second of a required, two-semester sequential course for pharmacy students during their advanced pharmacy practice experiences. This course is designed to: 1) prepare students for practice in the profession of pharmacy, 2) build upon didactic knowledge gained previously in the Doctor of Pharmacy program, and 3) help students become life-long learners through self-assessment and reflection on learning. Course activities may include but are not limited to board exam preparation, quizzes, case presentations, disease state and/or drug information presentations/discussions, journal club presentations, self-reflection assignments, and/or guest lectures by pharmacists and other healthcare practitioners in addition to other region-specific activities. Prerequisites: Completion of first and second year Doctor of Pharmacy Courses.

PHAR 753. Internal Medicine Advanced Pharmacy Practice Experience (APPE). 6 Units.

A clinical pharmacy practice rotation at an affiliated health care facility with emphasis on the medical management of disease states, rational drug therapy, and patient monitoring using the pharmaceutical care practice model in the care of inpatients. Prerequisites: All first and second year required Doctor of Pharmacy courses, Pharmacy Intern License, and CPR Certification.

PHAR 754. Ambulatory Care Advanced Pharmacy Practice Experience (APPE). 6 Units.

A clinical pharmacy practice rotation at an affiliated health care facility with emphasis on the medical management of disease states, rational drug therapy, and patient monitoring using the pharmaceutical care practice model in the care of outpatient and ambulatory care clinic patients. Prerequisites: All first and second year required Doctor of Pharmacy courses, Pharmacy Intern License, and CPR Certification.

PHAR 755. Hospital Pharmacy Advanced Pharmacy Practice Experience (APPE). 6 Units.

A clinical pharmacy practice rotation at an affiliated health care facility with emphasis on selecting drug products, compounding, dispensing, monitoring and evaluation, as well as understanding pharmacy operations and administration, communicating with patients and other health professionals, and providing drug information. Prerequisites: All first and second year required Doctor of Pharmacy courses, Pharmacy Intern License, and CPR Certification.

PHAR 756. Community Pharmacy Advanced Pharmacy Practice Experience (APPE). 6 Units.

A clinical pharmacy practice rotation at an affiliated community pharmacy facility with emphasis on selecting drug products, compounding, dispensing, monitoring and evaluating, communicating with patients, caregivers, and other health professionals, providing drug information, promoting public health, and learning pharmacy operations and management. Prerequisites: All first and second year required Doctor of Pharmacy courses, Pharmacy Intern License, and CPR Certification.

PHAR 757. Advanced Pharmacy Practice Experience (APPE) Elective I. 6 Units.

This is the first of two elective advanced pharmacy practice experiences that allow the student to explore and develop abilities in an area of interest within the health care industry. This experience may be in a variety of biomedical settings that include patient care, administration, health care system, public health, governmental agency, professional organization, research, academic, pharmaceutical industry, and other biomedical or health related settings. Prerequisites: All first and second year required Doctor of Pharmacy courses, Pharmacy Intern License, and CPR Certification.

PHAR 758. Advanced Pharmacy Practice Experience (APPE) Elective II. 6 Units.

This is the second of two elective advanced pharmacy practice experiences that allow the student to explore and develop abilities in an area of interest within the health care industry. This experience may be in a variety of biomedical settings including patient care, administration, health care system, public health, governmental agency, professional organization, research, academic, pharmaceutical industry, and other biomedical or health related settings. Prerequisites: All first and second year required Doctor of Pharmacy courses, Pharmacy Intern License, and CPR Certification.

PHAR LBS1. Pharmacy Labs. 0 Units.

Other Pharmacy Courses

PHRM 100. Continuous Registration. 0 Units.

PHRM 111. Pharmacy Practice and Professionalism. 3 Units.

This course is an introduction to the roles and responsibilities of the pharmacist in general and in various practice settings with a focus on leadership and professional development. Prerequisite: admission to the Doctor of Pharmacy Program. (DVSY)

PHRM 112. Dispensing, Compounding and Calculations. 3 Units.

This course presents mathematical concepts as they apply to the practice of pharmacy. The course also presents information on the techniques needed for the proper compounding and dispensing of medication as well as those techniques needed for communicating effectively with patients and health care professionals. Prerequisite: admission to the Doctor of Pharmacy program.

PHRM 113. Molecular and Cellular Biochemistry. 4 Units.

This course is a conceptual study of cellular function and control mechanisms at the molecular level. Prerequisite: admission to the Doctor of Pharmacy program.

PHRM 114. Physical Pharmacy and Dosage Forms. 5 Units.

Students study dosage forms and the relationship between the physicochemical properties of drugs and drug reaction. Prerequisite: admission to the Doctor of Pharmacy program.

PHRM 115. Nonprescription Therapy and Self Care. 2 Units.

Students study the principles of triage and self care that use non-prescription pharmacotherapy and dietary supplements. Prerequisite: admission to the Doctor of Pharmacy Program.

PHRM 118. Practicum I. 2 Units.

Pharmacy practice skills and knowledge are developed through completion of self-study modules and guided practice simulations. The practicum experiences relate to effective patient counseling for the most commonly prescribed and select non-prescription medications, smoking cessation products, and immunizations in addition to application of appropriate techniques for measurement of blood pressure, blood glucose and administration of immunizations for adults. Prerequisite: admission to the Doctor of Pharmacy Program.

PHRM 121. Informatics, Statistics and Research Design. 3 Units.

Students develop an understanding of the availability, selection and use of electronic and printed sources of medical and pharmacy information. Approaches to effectively responding to drug information questions in addition to analyzing and critiquing medical and pharmacy literature based on knowledge of the essentials of study design and statistics. Students will also understand the research steps prior to and following drug approval by the Food and Drug Administration. Prerequisite: a passing grade in all required courses in Semester 1 in the Doctor of Pharmacy Program.

PHRM 122. Physiology and Pathophysiology I. 5 Units.

This course is an integrated study of the cellular, anatomical, physiological, and pathophysiological components of the nervous and gastrointestinal systems. Prerequisite: a passing grade in all required courses in Semester 1 of the Doctor of Pharmacy program. Prerequisite, may be taken concurrently: PHRM 123.

PHRM 123. Physiology and Pathophysiology II. 5 Units.

This course is an integrated study of the cellular, anatomical, physiological, and pathophysiological components of the pulmonary, cardiovascular and renal systems. Prerequisite: a passing grade in all required courses in Semester 1 of the Doctor of Pharmacy program. Prerequisite, may be taken concurrently: PHRM 122.

PHRM 124. Drug Metabolism and Disposition. 3 Units.

This is a continuation course of PHRM 114 (Physical Pharmacy and Dosage Form) that utilizes the LADME framework (Liberation, Absorption, Distribution, Metabolism, and Excretion) to understand the biopharmaceutic, biometabolic and pharmacokinetic concepts underlying drug action. Prerequisite: a passing grade in all required courses in Semester 1 of the Doctor of Pharmacy program.

PHRM 129. Community I IPPE. 2 Units.

This course is a practice-based introductory experience that focuses on the role of the Pharmacist/Pharmacy Intern in a community pharmacy practice. This course is designed to allow students to participate in the delivery of pharmaceutical care. Prerequisites: a passing grade in all required courses in Semester 1 of the Doctor of Pharmacy Program and a current Pharmacy Intern license. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PHRM 134. Applied Pharmacokinetics and Pharmacogenomics. 4 Units.

This course is a continuation of PHRM 114 Physical Pharmacy & Dosage Forms and PHRM 124 Drug Metabolism & Disposition that use the LADME framework (Liberation, Absorption, Distribution, Metabolism, and Excretion) to understand biopharmaceutic and pharmacokinetic/pharmacodynamic principles governing drug behavior in the body. Additionally, the design of modified release drug delivery systems is covered. Prerequisite: a passing grade in all required courses in Semester 1 to 2 in the Doctor of Pharmacy program.

PHRM 135. Pharmacology and Medicinal Chemistry I. 4 Units.

The first course in the Pharmacology and Medicinal Chemistry series, effects of autonomic and central nervous system therapeutic agents and the mechanisms whereby these effects are induced. Drug classes will be presented to illustrate the effects of drug classes in the treatment of diseases. The principles of drug action and receptor theory will also be covered. Prerequisite: a passing grade in all required courses in Semesters 1 to 2 in the Doctor of Pharmacy program.

PHRM 136. Pharmacology and Medicinal Chemistry II. 4 Units.

The second course in the Pharmacology and Medicinal Chemistry series covers the effects of antimicrobial, hematologic, and gastrointestinal therapeutic agents and the mechanisms whereby these effects are induced. Drug classes are presented to illustrate the effects of drug classes in the treatment of diseases. The mechanisms of drug toxicity is also covered. Prerequisite: a passing grade in all required courses in Semester 1 to 2 of the Doctor of Pharmacy program.

PHRM 138. Practicum II. 2 Units.

Students develop communication, assessment and documentation abilities to prepare them for didactic courses and practice experience. Students learn to conduct a patient history, perform basic physical examinations, interpret common clinical laboratory data and diagnostic tests, and document pharmacist directed patient care using standardized approaches. Students assess simulated patient scenarios using a standardized SOAP (subjective data, objective data, assessment, plan) format. Each student is expected to demonstrate proficiency in each major ability. Prerequisite: a passing grade in all required courses in Semester 1 to 2 of the Doctor of Pharmacy program.

PHRM 139. Geriatrics Introductory Pharmacy Practice Experience. 2 Units.

PHRM 139 introduces practice-based experience that focuses on long term care, senior care, and geriatric patients. It is designed as a method to enhance each student's understanding of the role and responsibilities of pharmacists in the long term care and other geriatric care settings through the provision of pharmaceutical care to patients. Prerequisites are the successful completion of (passing grade in) all required courses in Semester 1 and 2 of the Doctor of Pharmacy program and a current Pharmacy Intern license. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PHRM 142. Physiology and Pathophysiology III. 5 Units.

An integrated study of the cellular, anatomical, physiological, and pathophysiological components of the endocrine, immunologic, and hematologic systems and processes involved in autoimmune, oncologic, and infectious diseases. Prerequisite: a passing grade in all required courses in Semester 1 to 3 of the Doctor of Pharmacy program.

PHRM 145. Pharmacology and Medicinal Chemistry III. 4 Units.

The third course in the Pharmacology and Medicinal Chemistry series covers the effects of cardiovascular, endocrine, cancer chemotherapy, immunologic therapeutic agents and the mechanisms whereby these effects are induced. Drug classes are presented to illustrate the effects of drug classes in the treatment of diseases. Prerequisite: a passing grade in all required courses in Semester 1 to 3 in the Doctor of Pharmacy program.

PHRM 146. Therapeutics I Neuro-Psychiatry. 4 Units.

Students develop the abilities to assess and develop patient-specific care plans for patients with specific conditions, diseases, disorders, and drug-induced problems that utilize basic and applied pharmaceutical science abilities. Lectures, readings and discussion enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisite: a passing grade in all required courses in Semesters 1 to 3 in the Doctor of Pharmacy program.

PHRM 147. Therapeutics II GI/Hepatic/Nutrition. 2 Units.

Students develop the abilities to assess and develop patient-specific care plans for patients with gastrointestinal, hepatic, nutrition, and anemia conditions, diseases, disorders, and drug-induced problems that utilize basic and applied pharmaceutical science abilities. Lectures, readings and discussion enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisite: a passing grade in all required courses in Semester 1 to 3 in the Doctor of Pharmacy program.

PHRM 149. Hospital IPPE A - Practice Focus. 1 Unit.

Hospital introductory pharmacy practice experience are a method to enhance each student's understanding of the role and responsibilities of pharmacists in the institutional setting and to gain experience with the medication use system and with other health care providers within a hospital. Prerequisites: passing grade in all required courses in Semester 1 and 2 of the Doctor of Pharmacy program. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PHRM 150. Hospital IPPE B - Administrative/Regulatory Focus. 1 Unit.

This course enhances each student's understanding of the role of pharmacists throughout the medication use process in the hospital setting, with emphasis on pharmacy operations and administration, regulatory and accreditation standards, communicating with patients and other health care professionals, and providing drug information. Prerequisites: passing grade in all required courses in Semester 1 and 2 of the Doctor of Pharmacy program. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PHRM 151. Pharmacoeconomics, Benefits and Outcomes. 2 Units.

This course describes and applies economic-based evaluation methods to pharmaceutical products, treatments and services. Content includes understanding principles which help decision makers maximize clinical and/or humanistic outcomes given economic constraints. Additionally, this course provides an introduction to managed care and Medicare and its role in US health care delivery. Prerequisite: a passing grade in all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program.

PHRM 152. Pharmacy Law and Ethics. 3 Units.

Discussions and analysis of federal and state law, regulations, standards of practice, case law and ethics related to pharmacy practice and drug development and distribution. The focus is California laws and regulations that govern the practice of pharmacy in community and institutional settings. Prerequisite: a passing grade in all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program.

PHRM 156. Therapeutics III Cardiology. 4 Units.

Students develop the abilities to assess and develop patient-specific care plans for patients with specific cardiovascular diseases that utilize basic and applied pharmaceutical science abilities. Lectures, readings, and discussion enable students to develop the abilities to assess, manage, and document simple to complex patients. Prerequisite: a passing grade in all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program.

PHRM 157. Therapeutics IV Renal/Respiratory. 3 Units.

Students develop the abilities to assess and develop patient-specific care plans for patients with renal and respiratory diseases. Lectures, readings, and discussion enable students to develop the abilities to assess, manage, and document simple to complex patients with renal and respiratory-related issues. Prerequisite: a passing grade in all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program.

PHRM 158. Practicum III. 1 Unit.

Problem solving and critical thinking skills are developed through the discussion and solution of complex cases and problems, with a focus on patients with multiple disorders and patients from various cultures or diverse populations and pediatric and geriatric populations. Problem solving and critical thinking skills are also developed through the discussion and solution of cases and problems that involve the clinical pharmacokinetics of select drugs, which include the determination and documentation of initial dosing recommendations, dosage adjustments, drug concentration predictions, and monitoring plans. Prerequisite: a passing grade in all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program. Prerequisites, may be taken concurrently: PHRM 156 and PHRM 157.

PHRM 159. Community II IPPE. 2 Units.

Community II introductory pharmacy practice experiences are a method to enhance each student's understanding of the role and responsibilities of pharmacists in the community setting and to gain experiences with the medication use system within a community pharmacy and expand the abilities developed in Community I introductory pharmacy practice experience. Prerequisites: a passing grade in all required courses in Semesters 1 and 2 of the Doctor of Pharmacy program. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PHRM 160. Ambulatory Care IPPE. 1 Unit.

The Ambulatory Care IPPE enhances each student's understanding, participation, and commitment to enhancing the health of an ambulatory population. Students will work with healthcare professionals within a health care system and utilize stratification strategies to provide ambulatory population management activities. Students will evaluate electronic health information and document assessments and plans using standardized progress notes. Students will contact patients to provide information and education pertinent to health promotion and disease prevention and document those discussions in electronic health records. Work is conducted under the supervision of a licensed pharmacist.

PHRM 161. Pharmacy Management. 2 Units.

Students study the analysis of financial management principles applicable to pharmacy practice which includes an analysis of human resources management applicable to pharmacy practice. Prerequisite: a passing grade in all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program.

PHRM 165. Therapeutics V Infectious Diseases. 4 Units.

Infectious Disease Therapeutics is an integrated course where students are taught to bring Medical Microbiology, Pharmacology, Physiology, Immunology, Pharmacokinetics, Pharmacodynamics and Chemotherapeutics together in order to care for patients with treatable infectious diseases. Students develop the ability to assess and develop patient-specific care plans for patients with infectious disease conditions, that include prevention and drug-induced problems that utilize applied pharmaceutical science principles and knowledge. Lectures, readings, presentations and discussions enable students to develop the ability to assess, manage, and document therapeutic care plans of varying complexity for patients with infectious diseases. Prerequisite: a passing grade in all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program.

PHRM 166. Therapeutics VI Oncology/Transplantation. 3 Units.

Students develop the abilities to assess and develop patient-specific care plans for patients with specific conditions, diseases, disorders of cancers and transplants and drug-induced problems that utilize basic and applied pharmaceutical science abilities. Lectures, readings, and discussion enable students to develop the abilities to assess, manage, and document simple to complex patients with cancers or transplants. Prerequisite: a passing grade in all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program.

PHRM 167. Therapeutics VII Endocrine/Musculoskeletal. 4 Units.

Students develop the abilities to assess and develop patient-specific care plans for patients with endocrine, musculoskeletal, pain, dermatologic, and ophthalmic conditions, diseases, disorders, and drug-induced problems that utilize basic and applied pharmaceutical science abilities. Lectures, readings, and discussion enable students to develop the abilities to assess, manage, and to document simple to complex patients. Prerequisite: a passing grade in all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program.

PHRM 168. Practicum IV. 1 Unit.

This course is a continuation of Practicum III. Problem solving and critical thinking skills are developed through the discussion and solution of complex cases and problems that focus on patients with multiple disorders and patients from various cultures or diverse populations and pediatric and geriatric populations. Problem solving and critical thinking skills are also developed through the discussion and solution of cases and problems that involve the clinical pharmacokinetics of select drugs, including the determination and documentation of initial dosing recommendations, dosage adjustments, drug concentration predictions, and monitoring plans. Prerequisite: a passing grade in all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program. Prerequisites, may be taken concurrently: PHRM 165, PHRM 166, PHRM 167.

PHRM 169. Health Care Outreach IPPE. 1 Unit.

Community health care outreach introductory pharmacy practice experiences are a method to enhance each student's understanding, participation, and commitment to enhancing the health of the public. Groups of students work with community agencies and organizations in the development, organization, management, implementation, delivery, and assessment of health care outreach activities in local communities. Many of these activities are managed through professional student organizations. Students also reflect on their activities to determine the impact of those activities on the public and on themselves. Prerequisite: a passing grade in all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PHRM 171. Internal Medicine APPE. 6 Units.

This clinical pharmacy practice rotation at an affiliated health care facility emphasizes the medical management of disease states, rational drug therapy, and patient monitoring that use the pharmaceutical care practice model. Prerequisites: a passing grade in all required courses and 4 units of elective courses in semesters 1 to 6 of the Doctor of Pharmacy program. Students must satisfy academic standards for entry into advanced pharmacy practice experiences. Meet the minimum site and APPE requirements, including but not limited to criminal background checks, drug and Tuberculosis screenings, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APha immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance, and signed student photo release form.

PHRM 172. Ambulatory Care APPE. 6 Units.

This clinical pharmacy practice rotation at an affiliated clerkship site has an emphasis on providing pharmaceutical care for ambulatory care patients, that include the medical management of disease states, rational drug therapy, and patient monitoring. Prerequisites: a passing grade in all required courses and 4 units of elective courses in semesters 1 to 6 of the Doctor of Pharmacy program. Students must satisfy academic standards for entry into advanced pharmacy practice experiences. Meet the minimum site and APPE requirements, including but not limited to criminal background checks, drug and Tuberculosis screenings, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APha immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance, and signed student photo release form.

PHRM 173. Hospital Care APPE. 6 Units.

This hospital pharmacy practice rotation at an affiliated clerkship site enhances experiences in selecting drug products, compounding, dispensing, monitoring and evaluation, as well as understanding pharmacy operations and administration, communicating with patients and other health professionals, and providing drug information. Prerequisites: a passing grade in all required courses and 4 units of elective courses in semesters 1 to 6 of the Doctor of Pharmacy program. Students must satisfy academic standards for progression into Advanced pharmacy Practice Experiences. Meet the minimum site and APPE requirements, including but not limited to criminal background checks, drug and Tuberculosis screenings, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APha immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance, and signed student photo release form.

PHRM 174. Community Pharmacy APPE. 6 Units.

The Advanced Pharmacy Practice Experience in Community Pharmacy Practice is designed to provide students hands-on experience in selecting drug products, compounding, dispensing, monitoring and evaluating, communicating with patients, communicating with other health professionals, drug information, public health, and pharmacy operations and management. This required experiential learning rotation allows students to integrate their pharmacy knowledge with patient care skills, further develop effective communication skills, develop pharmacy management skills, and engage in innovative practice experiences when possible. Students actively participate in the day-to-day activities that comprise the work of a pharmacist who practices in the community setting. In addition, students have the opportunity to engage in pharmacy practice activities that include pharmacy management, medication therapy management and other pharmaceutical care services, and health promotion and preventive care services. Prerequisites: a passing grade in all required courses in semesters 1 to 6 of the Doctor of Pharmacy program. Students must satisfy academic standards for progression into Advanced Pharmacy Practice Experiences. Meet the minimum site and APPE requirements, including but not limited to criminal background checks, drug and Tuberculosis screenings, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APha immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance, and signed student photo release form.

PHRM 175. Advanced Pharmacy Practice Experience Capstone I. 1 Unit.

This is the first of a required, two-semester sequential course for pharmacy students during their advanced pharmacy practice experience. This course is designed to: 1) prepare students for practice in the profession of pharmacy, 2) build upon didactic knowledge gained previously in the Doctor of Pharmacy program, and 3) help students become life-long learners through self-assessment and reflection on learning. Course activities will include but are not limited to board exam preparation, quizzes, case presentations, disease state and/or drug information presentations/discussions, journal club presentations, self-reflection assignments, and/or guest lectures by pharmacists and other healthcare practitioners in addition to other region-specific activities. Prerequisites, may be taken concurrently: PHRM 171, PHRM 172, PHRM 173, PHRM 174, PHRM 184 or PHRM 185 and satisfy academic standards and the institution's policies and procedures for progression into Advanced Pharmacy Practice Experiences.

PHRM 176. Advanced Pharmacy Practice Experience Capstone II. 1 Unit.

This is the second of a required, two-semester sequential course for pharmacy students during their advanced pharmacy practice experiences. This course is designed to: 1) prepare students for practice in the profession of pharmacy, 2) build upon didactic knowledge gained previously in the Doctor of Pharmacy program, and 3) help students become life-long learners through self-assessment and reflection on learning. Course activities will include but are not limited to board exam preparation, quizzes, case presentations, disease state and/or drug information presentations/discussions, journal club presentations, self-reflection assignments, and/or pharmacists and other healthcare practitioners in addition to other region-specific activities. Prerequisite: PHRM 175 with a "C" or higher. Prerequisites, may be taken concurrently: PHRM 171, PHRM 172, PHRM 173, PHRM 174, PHRM 184 or PHRM 185.

PHRM 177. Preparatory Advanced Pharmacy Practice Experience. 2 Units.

A preparatory Advanced Pharmacy Practice Experience (APPE) with emphasis on identifying and remediating deficiency (knowledge and/or practice skills) to better prepare students who have failed at least one APPE and have successfully completed any remediation or developmental courses, activities and assessment requirements set forth by the School. Prerequisites: a passing grade in all required courses in Semesters 1 to 6 in the Doctor of Pharmacy program, Good academic standing or by permission if on academic probation, prior failure in at least one APPE, successful completion of any required remediation courses, activities and/or assessments, meet the minimum site and APPE requirements.

PHRM 184. APPE Elective I. 6 Units.

This is the first of two elective advanced pharmacy practice experiences that allow the student to explore and develop abilities in an area of interest within the health care industry. This experience may be in a variety of biomedical settings that include patient care, administrative, health care system, public health, governmental agency, professional organization, research, academic, pharmaceutical company, and other biomedical or health related settings. Prerequisites: a passing grade in all required and 4 units of elective courses in semesters 1 to 6 of the Doctor of Pharmacy program. Students must satisfy academic standards for progression into Advanced Pharmacy Practice Experiences. Meet the minimum site and APPE requirements, including but not limited to criminal background checks, drug and Tuberculosis screenings, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APha immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance, and signed student phot release form.

PHRM 185. APPE Elective II. 6 Units.

This is the second of two elective advanced pharmacy practice experiences that allow the student to explore and develop abilities in an area of interest within the health care industry. This experience may be in a variety of biomedical settings including patient care, administrative, health care system, public health, governmental agency, professional organization, research, academic, pharmaceutical company, and other biomedical or health related settings. Prerequisite: Successful completion of (passing grade in) all required courses and 4 units of elective courses in semesters 1 to 6 of the Doctor of Pharmacy program Satisfy academic standards for progression into Advanced Pharmacy Practice Experiences. Meet the minimum site and APPE requirements, including but not limited to criminal background checks, drug and Tuberculosis screenings, up to date personal immunizations for healthcare provider, annual completion of University approved HIPAA training course, APha immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance, and signed student phot release form.

PHRM TPR. ELEC.: 1-6 Units.**Physiology Pharmacology Courses****PHYP 111. Veterinary Pharmacology. 2 Units.**

Students examine the application of pharmacology to the problems of animal health. The course is one two-hour lecture per week.

PHYP 113. Teaching Anatomy, Physiology and Pathophysiology Laboratory. 1 Unit.

This course provides academic credit for second-year PharmD students who assist with teaching laboratory and discussion sessions for first-year Anatomy, Physiology, and Pathophysiology courses. Assistance may be for demonstrations, wet laboratory procedures, or discussion sessions for PharmD courses taught by faculty in the Physiology & Pharmacology Department. Prerequisites: PHRM 122 or PHRM 123 with a C or better; permission of instructor; must not be on probation or received no credit in required pharmacy courses. The course may be repeated twice for credit.

PHYP 114. Teaching Anatomy and Physiology Laboratory II. 2 Units.

This course provides academic credit for second year students who assist with teaching laboratory and discussion sessions for first-year Anatomy and Physiology courses. Assistance may be for demonstrations, wet laboratory procedures, or discussion sessions in PHAR 125. Students must receive a grade of "C" or better in the course in which teaching assistance is provided. Permission of instructor.

PHYP 130. Science Education Experiences (SEE). 2 Units.

The course prepares second year pharmacy students for outreach to elementary school classrooms to teach science information and concepts. Students receive training to prepare for the classroom environment and then make 6-7 visits to assigned classrooms to present science information and direct hands-on science activities. Open to second year students in the Doctor of Pharmacy program with good academic standing.

PHYP 141. Parkinson's Disease Research. 1-4 Units.

This elective course is for students wishing to pursue scientific research into the neurobiology and genetics of Parkinson's disease. Credits are by arrangement and will be determined at the beginning of each semester by the nature of the research project and by the time schedule of each student. Students are expected to commit to 3 hours of lab research per week per unit, with the understanding that the numbers of hours of units will be directly proportionate to the relative complexity of the assigned research project. Participation will be documented by the students and by the instructor. Prerequisites: Doctor of Pharmacy student or permission of instructor.

PHYP 142. Pharmacogenomics. 1 Unit.

This elective course will introduce basic concepts, clinical applications and ethical considerations of pharmacogenomics. Students will learn about the genetic basis of inter-individual variability in response to drugs and drug pharmacokinetics, and how pharmacotherapy can be individualized based on a person's genetic makeup to optimize its effectiveness and minimize adverse effects. Prerequisite: Second year Doctor of Pharmacy student or permission of instructor.

PHYP 158. Fundamentals of Toxicology. 2 Units.

An introduction to the general principles of toxicology. The toxic effects of various classes of non-medical chemicals are discussed with emphasis on the mechanisms of action, sites of action, signs and symptoms of toxicity and the treatment of toxicity. Prerequisites: PHRM 135 and PHRM 136.

PHYP 191. Independent Study. 1-4 Units.**PHYP 193. Undergraduate Independent Study. 1-4 Units.****PHYP 197. Independent Research. 1-4 Units.****Pharmaceutics Med. Chem Courses****PMED 097. Independent Research. 1-5 Units.****PMED 097A. Independent Research. 1-5 Units.****PMED 111A. Teaching the Pharmaceutical Dosage Forms Laboratory. 1 Unit.**

This course is designed to train pharmacy students to supervise a laboratory as a teaching assistant. This course is open to students who have completed all first year courses and are in good standing.

PMED 111B. Teaching the Pharmaceutical Dosage Forms Laboratory. 1 Unit.

A course designed to train pharmacy students in supervising a laboratory as a teaching assistant. This course will be open to students who have completed all first year courses and are in good standing.

PMED 121. Professional Communications and Interviewing. 1 Unit.

This course instructs students on the principles of professional communication and interviewing. After appropriate training, students participate in different aspects of the interview of candidates for the pharmacy program. At the end of their participation, students evaluate the program. Prerequisite: Doctor of Pharmacy Student.

PMED 122. Teaching Assistant for Professional Communications and Interviewing. 2 Units.

This course enables students to participate at a coordinator level in the process of professional communications and interviewing. Students are assigned specific coordinator roles and work in cooperation with the Office of Student and Professional Affairs, other students, and faculty in fulfilling those roles. Open to second year Doctor of Pharmacy students. Prerequisite: PMED 121.

PMED 129. Dynamics of Student Leadership. 2 Units.

Students explore and apply of basic leadership theories and processes which foster personal and interpersonal development via cognitive experiential classroom methods and mentoring relationships with experienced peer leaders. Professional standing.

PMED 131. Introduction to Dermatology. 2 Units.

This course is an integrated study of dermatological disorders with emphases on triage, medication options, and pharmaceutical care. Prerequisites: PHRM 112 and PHRM 115. Professional standing.

PMED 132. Bench Research in Protein Chemistry and Molecular Biology. 1 or 2 Unit.

This elective course provides bench research experience for 1st and 2nd year pharmacy students and undergraduate students. Research will be related to biochemistry, protein chemistry, and molecular biology. Emphasis will be on the rationale and hypothesis for the experiment. Students will have hand on experience to conduct experiments and opportunities to present findings. Prerequisite: Permission from instructor.

PMED 136. Making of Medicines: The Process of Drug Development. 1 Unit.

Drug discovery and development is very complex and may take up to 20 years and multiple steps to bring a medicine to patients. The medical expertise and processes that contribute to scientific-based drug development are often unfamiliar to students in science and health-related fields. This course addresses the need to increase understanding and awareness of the drug discovery and development process.

PMED 138. Lectures in Nuclear Pharmacy Science. 3 Units.

Students study radioactivity, radionuclides, and nuclear radiations. Topics include methods of detection and measurement of radiations as well as basic rules of use for nuclides and radioactive material.

PMED 143. Facilitating Biologic Mechanism Lab Sessions. 1 Unit.

This course provides academic units for second-year students who assist with teaching/facilitating laboratory discussion sessions for first-year Biological Mechanisms students. Open to second year PharmD students. Prerequisite: PHRM 113 or PHAR 113 with an "B" and permission of instructor.

PMED 153. Pharmaceutical Compounding. 2 Units.

A study of extemporaneously preparing, mixing, assembling, packaging, and labeling of non-sterile compounded prescription drug orders according to the art of the apothecary. Prerequisite: Doctor of Pharmacy student.

PMED 157. Peer Tutoring and Mentoring. 1 Unit.**PMED 164. Advances in Applied Pharmacokinetics. 2 Units.**

This course offers a systematic approach to a rational application of basic pharmacokinetics to patient specific clinical practice.

PMED 185. Cosmetics: Formulation and Function Lab. 1 Unit.

This hands-on course is an introduction to the formulation and function of cosmetic products for the hair, nails, skin, lips and eyes. Prerequisite: PMED 184.

PMED 191. Independent Study. 1-4 Units.**PMED 193. Undergraduate Independent Study. 1-4 Units.****PMED 197. Undergraduate Independent Study. 1-5 Units.**

This course is independent study that involves library and/or laboratory.

Pharmacy Prof Devel Courses

PPDP 149U. Endocrine/Musculoskeletal Ther. 4 Units.

Students will develop the abilities to assess and develop patient-specific care plans for patients with endocrine, musculoskeletal, pain, dermatologic, and ophthalmic conditions, diseases, disorders, and drug-induced problems utilizing basic and applied pharmaceutical science abilities. Lectures, readings, and discussion will enable students to develop the abilities to assess, manage, and document simple to complex patients.

PPDP 191. Independent Study. 4 Units.

Pharmacy Practice Courses

PRAC 070. Clinical Experience Rotations. 18 Units.

PRAC 101. Pharmacy Orientation. 1 Unit.

Students study a general survey of the scope of pharmacy that includes and licensing requirements, career and occupational opportunities, pharmacy organizations (campus, local, state and national), basic pharmacy terminology and University and School of Pharmacy and Health Sciences regulations and pre-pharmacy requirements.

PRAC 110. Developing Effective Learning Strategies. 1 Unit.

This elective course will provide students with information about how learning occurs, determining learning preferences, developing effective strategies, effective time management, and psychosocial/lifestyle factors that impact learning.

PRAC 116. Teaching Pharmacy Dosage Labs. 1 Unit.

This course will present an opportunity for 2nd year pharmacy student to review and reflect on the methods used to teach 1st year professional students the proper techniques for dispensing medications, compounding, and drug consultation. It will also provide students with the opportunity to contribute their thoughts on ways in which these methods may be improved.

PRAC 118. Professional Communication and Interviewing. 1 Unit.

This course enables students to participate in the process of professional communications and interviewing. Students are assigned specific interviewing and facilitator roles and work in cooperation with the Office of Student and Professional Affairs, other students, and faculty in fulfilling those roles.

PRAC 119. Teaching Assistant for Professional Communication and Interviewing. 2 Units.

This course enables students to participate at a coordinator level in the process of professional communications and interviewing. Students are assigned specific coordinator roles and work in cooperation with the Office of Student and Professional Affairs, other students, and faculty in fulfilling those roles. Prerequisite: PRAC 118.

PRAC 120. Advanced Immunizations: Immunology and Influenza. 1 Unit.

This is an advanced course on immunizations that will emphasize the immunological basis for vaccine effectiveness and provide an in-depth review of the influenza virus and vaccines. Prerequisites: PHRM 111, PHRM 112, PHRM 113, PHRM 114, PHRM 115, PHRM 118; certification through APhA's Pharmacy Based Immunization Delivery training program.

PRAC 124. Developing Consumer Fact Sheets. 2 Units.

Students develop written communication skills geared towards consumers by writing consumer friendly fact sheets about relevant health topics. All facts sheets are submitted to the California State Board of Pharmacy for use at their discretion. Students receive acknowledgement for their contributions. Open to second year Doctor of Pharmacy students or those with permission of the instructor.

PRAC 127. Teaching the Drug Information Lab. 1 Unit.

PRAC 127A. RxTract Writer. 1 Unit.

Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 127B. RxTract Writer. 1 Unit.

Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 127C. RxTract Writer. 1 Unit.

Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 127D. RxTract Writer. 1 Unit.

Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 127E. RxTract Writer. 1 Unit.

Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 127F. RxTract Writer. 1 Unit.

Students write and publish pharmacotherapy reports in a newsletter format.

PRAC 129. Dynamics of Student Leadership. 2 Units.

Students explore and apply of basic leadership theories and processes which foster personal and interpersonal development via cognitive experiential classroom methods and mentoring relationships with experienced peer leaders. Professional standing.

PRAC 130. Practice of Pharmacy- A Multicultural and International Approach. 1-2 Units.

The focus of this course is to develop a culturally competent and multifaceted approach to patient care in a diverse cultural and dynamic healthcare setting. This course takes into consideration the various health and illness needs, religious beliefs, complementary health practices, cultural orientation of various ethno cultural groups as well as the dynamics of transcultural communications between patients and healthcare professionals. Prerequisite: successful completion of semester 1 in the Doctor of Pharmacy program or permission of instructor.

PRAC 131. Managed Care: P&T Competition. 1-2 Units.

This course focuses on the practical and hands-on skills of formulary management through understanding the steps involved in evaluating the AMCP (Academy of Managed Care Pharmacy) Dossier format of pharmaceutical products, literature search and evaluation, interpreting pharmacoeconomic/cost-impact analysis, Comparative Effectiveness Research (CER), monograph creation and presentation to a Pharmacy and Therapeutics (P&T) Committee. Open to Doctor of Pharmacy students only.

PRAC 132. Advanced Immunizations: Introduction to Travel Medicine. 1 Unit.

Introduction to the practice of travel medicine with an emphasis on vaccines and pharmacological prophylaxis and treatment of tropical diseases. Prerequisites: PHRM 111, PHRM 112, PHRM 113, PHRM 114, PHRM 115, PHRM 118; certification through APhA's Pharmacy Based Immunization Delivery training program.

PRAC 133. Adv IMM Introduction to Travel Medicine II. 1 Unit.

An introduction to the practice of travel medicine with an emphasis on parasitic and non-vaccine preventable tropical diseases. Prerequisites: PHRM 118, certification through APhA's Pharmacy Based Immunization Delivery training program. Prerequisite, may be taken concurrently: PRAC 132.

PRAC 134. Past, Present and Future of Vaccine Preventable Diseases. 1 Unit.

A general overview of the successes and issues surrounding vaccine preventable diseases with topics ranging from small pox eradication to the therapeutic use of vaccines for non-infectious diseases. Prerequisite: PHRM 118.

PRAC 135. Student Journal Club. 2 Units.

This elective course is designed to help students practice and master 1) literature retrieval and evaluation skills and 2) information dissemination skills that help prepare them for rotations and the rotation requirement of reviewing and presenting journal articles. Students select, review, analyze and present articles each week that are related to topics of interest in other courses they are taking. Prerequisite: PHRM 121 and 3rd semester standing (or higher) in the Doctor of Pharmacy program.

PRAC 136. Entrepreneurial Pharmacy Practice. 2 Units.

An overview of entrepreneurship in general, the traits of an entrepreneur, current topics in entrepreneurship with a specific focus on pharmacy practice and patient care programs. The course teaches the participants a comprehensive set of critical skills needed to develop a profitable business project. Preference is given to students enrolled in the Entrepreneurial Program. Prerequisite: PHRM 111.

PRAC 137A. RxTract Editor. 2 Units.

Students organize and edit reports that are published in a newsletter format. Prerequisite is enrollment as a second year PharmD student.

PRAC 137B. RxTract Editor. 2 Units.

Students organize and edit reports that are published in a newsletter format. Prerequisite is enrollment as a second year PharmD student.

PRAC 137C. RxTract Editor. 2 Units.

Students organize and edit reports that are published in a newsletter format. Prerequisite is enrollment as a second year PharmD student.

PRAC 138. Behavioral Medicine in Pharmaceutical Care. 1 Unit.

This course will cover the basic principles of behavior, behavioral medicine, and health psychology. In addition, the application of these principles will be demonstrated through examples from disease states such as diabetes, asthma, chronic pain, cardiovascular diseases and cancer. Professional standing.

PRAC 139. Health Literacy: Fundamental Skills for Patient Care. 1-2 Units.

The course explore the link between literacy and health in the U.S. and how poor health literacy impacts access to health information and quality health care services. Students practice writing and speaking in plain language, and consider the Internet as a vehicle for achieving consumer health information literacy. The course provides an overview of the adult literacy system in the U.S. and explores opportunities for collaboration across fields. Prerequisites: PHRM 111, PHRM 112, PHRM 115, PHRM 118.

PRAC 140. Healthcare Finance: Pharmacy Applications. 2 Units.

Healthcare Finance offers an introduction to accounting, financial theory and practice in health care settings. It is designed to familiarize students with financial concepts and issues that confront managers in the health and pharmaceutical sectors. Second year standing in the Doctor of Pharmacy program or permission of instructor.

PRAC 141. Medicare Part D and MTM - Application and Outreach. 2 Units.

This course focuses on examining the Medicare Part D prescription drug benefit, utilization of the Medicare Plan Finder Tool and Medication Therapy Management (MTM). We will also focus on incorporating patient-specific considerations and evaluate the economic implications of Medicare Part D plan selection by beneficiaries. We will also train students about the process and how to perform MTM.

PRAC 142. Intro to the Medicare Benefit & Medication Therapy Management. 2 Units.

A course which focuses on understanding the eligibility, structure, financing and administration of the Medicare benefit. The prescription drug benefit ("PartD") is discussed in detail and topics such as formulary requirements, restrictions, coverage determination and appeals are explored. Cost-minimization strategies including the late-enrollment penalty, Medicaid, the low-income subsidy, and pharmaceutical assistance programs are highlighted. Students also learn about the most common medications filled by Medicare beneficiaries, have a series of mini-modules on prevalent chronic conditions in the senior population, learn how to use the MTM billing platform and conduct MTM services. Prerequisites: Second year PharmD student or instructor permission. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunization for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PRAC 143. Health Care Outreach IPPE- Medicare Part D. 1 Unit.

Community health care outreach introductory pharmacy practice experiences are a method to enhance each student's understanding, participation, and commitment to enhancing the health of the public, with a focus on enhancing Medicare beneficiary understanding and enrollment in a Medicare Part D prescription drug plan. Groups of students work to develop, organize, manage, implement, deliver, and assess Medicare Part community outreach activities in settings serving Medicare beneficiaries. This course is given in conjunction with PRAC 141 Medicare Part D- Fundamentals, Application and Outreach. Students also reflect on their activities to determine the impact of those activities on both the beneficiaries they serve and on themselves. Successful completion of this course satisfies completion of PHRM 169 Health Care Outreach Introductory Pharmacy Practice Experiences. Prerequisites: a passing grade in all required courses in Semester 1 of the Doctor of Pharmacy program or permission of the instructor, current Pharmacy Intern license, and current blood borne pathogen and CPR certifications. Corequisite: PRAC 141.

PRAC 150. Careers in the Pharmaceutical Industry. 1 Unit.

This course will serve as an introductory course for the development of students who are interested in pharmaceutical industry fellowships and/or a career in the pharmaceutical industry. During the course students will learn about the recruitment process used by pharmaceutical and biotech companies. The course will expose students to the daily work of professionals in different functions of the pharmaceutical industry. Students will be linked with current and past pharmaceutical industry fellows and learn about the pharmacist's role in molecule development, medical science, regulatory affairs, clinical operations, clinical sciences, and the emerging global landscape of clinical trials. In addition, the course will be prepared for the rigors of the application process at the American Society of Health-System Pharmacists Mid-Year Clinical Meeting.

PRAC 151. Intro to Pediatrics. 2 Units.

Students are introduced to the pediatric patient, physiologic considerations, population-specific disease states and pharmacotherapy. Prerequisites: successful completion of all courses in the first three semesters of current Doctor of Pharmacy curriculum and current enrollment in fourth semester coursework or higher.

PRAC 152. Practicum I Teaching Assistant. 1 Unit.

This course presents an opportunity for 2nd year pharmacy student to act as teaching assistants (TA) and to help teach and foster learning for 1st year professional students in the practicum course. The practicum experiences relate to effective patient counseling for the most commonly prescribed and select non-prescription medications, pulmonary devices, smoking cessation products, in addition to application of appropriate techniques for measurement of blood pressure, blood glucose, and administration of immunizations for adults. Prerequisite: Permission of the instructor and a grade of B or better (or grade of Pass if Pass/No Credit) in PHRM 118, pharmacy students in the 2nd year of their professional studies. Students must not be on probation and must not have failed or received no credit in any required pharmacy course.

PRAC 153. Introduction to Spanish for the Pharmacy Professional I. 1 Unit.

This elective course is designed to develop a beginning level competence in Spanish for use in pharmacy practice settings. Basic communication skills related to everyday situations in the pharmacy will be presented using lecture, interactive laboratory sessions, and online and textbook listening and speaking exercises. Vocabulary, phrases, questions, patient assessment, and patient interview for basic conditions and OTC counseling will be presented and practiced. The goal of this course is not to develop fluency but to introduce the student to the Spanish language and its application in the pharmacy and also to develop a foundation for lifelong learning.

PRAC 154. Introduction to Spanish for the Pharmacy Professional I - Teaching Assistant. 1 Unit.

The course is designed to present an opportunity for pharmacy students who are fluent or proficient in the Spanish language to act as teaching assistants and assist other pharmacy students to learn Spanish for the Pharmacy Professional. Teaching assistants will meet with the instructor prior to each class session for class preparation and will then participate during class sections.

PRAC 155. Biotechnology and Product Development. 2 Units.

This course offers the students comprehensive information and insights about the science of biotechnology, as well as a focus on product development, and the differentiations of biological from drugs. Actual industry experiences are provided. The students also gain an understanding of key biological product attributes, and the business and science practices in the biopharma industry, plus regulatory issues. Through a student presentation, an understanding of a "Total Product Profile", is provided, which is essential in product development examining the clinical parameters of diseases in healthcare systems with the product applications, along with business potential of a biological product. Prerequisite: Second year Doctor of Pharmacy student.

PRAC 156. Opportunities in Pharmacy Practice. 1 or 2 Unit.

Students learn personal and business tools to make the transition from the academic environment to the daily practice of pharmacy, with an emphasis on entrepreneurship.

PRAC 157. Peer Tutoring and Mentoring. 1 Unit.

This course is designed to provide training for students to become effective tutors for courses in the Pharmacy curriculum and/or peer mentors for the Office of Academic Success and Instructional Support. Students will be in one of two tracks: tutoring for specific courses or serving as peer mentors for the OASIS office. Prerequisite: Cumulative GPA of 3.0 or better.

PRAC 158. Population Health Management Introductory Pharmacy Practice. 1 Unit.

Population health management introductory pharmacy practice experiences are a method to enhance each student's understanding, participation, and commitment to enhancing the health of a population. Students will work with healthcare professionals with the VA Northern California Health Care System (VANHCOS) to coordinate, deliver and measure the effectiveness of population management activities. Students will utilize VA Dashboard to identify populations at risk. Students will contact and counsel those patients at risk, and document those discussions and recommendations in electronic health records under the supervision of a licensed pharmacist. Completion of this course will satisfy the requirements for PHRM 169. Prerequisites: PHRM 111, PHRM 112, PHRM 113, PHRM 114, PHRM 115, PHRM 118.

PRAC 159. Pharmaceutical Care for Ambulatory Care Clinic Patients. 1 Unit.

A course which focuses on education and actively involving students in the provision of pharmaceutical care provided to patients through our four clinics [asthma, osteoporosis & falls, pharm. care (which includes smoking cessation), and wellness] and our associated education, assessment, and interventional community programs. Prerequisites: Doctor of Pharmacy student. Meet the minimum site and IPPE requirements, including but not limited to criminal background checks, drug and tuberculosis screening, up to date personal immunization for healthcare provider, annual completion of University approved HIPAA training course, APhA immunization certificate, current blood borne pathogen certificate, current AHA CPR for healthcare provider certificate and valid pharmacy intern license. Complete experiential requirements also include but are not limited to proof of medical and auto insurance and signed student photo release form.

PRAC 160. Pain Management. 2 Units.

Students examine pharmaceutical care for the patient with pain disorders and focus on pathophysiology, pharmacology and toxicology, pain assessment skills, appropriate medication therapy, side effect management and non-medication management of these disorders. Prerequisites: successful completion of all courses in semesters 1-4 of the Doctor of Pharmacy program.

PRAC 161. Practicum II TA 1. 2 Units.

In this course, 2nd year pharmacy students will focus on preparing to serve as teaching assistants for students in PHAR 331 Pharmacy Skills III through guided activities. Students will be expected to serve as teaching assistants in the PHAR 331 Pharmacy Skills III course in the current semester. Prerequisites: Second year Pharm.D. student. Permission from the instructor and a grade of B or better in PHAR 331 Pharmacy Skills III. Students must be in good academic standing and must not have failed any required pharmacy course.

PRAC 162. Practicum II TA 2. 1 Unit.

This is the second of a two-semester course series. In this course, second year pharmacy students serve as teaching assistants for students in PHRM 138. Prerequisites: Second year Pharm.D. student. Completion of PRAC 161. Permission from the instructor. Students must be in good academic standing and not tutoring first year pharmacy students for PHRM 138. Students must not have failed any required pharmacy course.

PRAC 164. Applied Therapeutics and Managed Care. 2 Units.

This course is a blend of therapeutics and pharmacoeconomics that apply the principles of outcome research situations in managed care (real-life situations). Open to second year students in the Doctor of Pharmacy program.

PRAC 166. Becoming an Advanced Practice Pharmacist (APP)

Practitioner. 1 Unit.

This course will provide students with strategies to advance pharmacy practice and become an integral part of the inter-professional health care team. Prerequisite: First or Second year standing in the pharmacy program.

PRAC 167. Pursuit of Residency or Fellowship Opportunities I. 1 Unit.

This course will serve as an introductory course for the development of students who are interested in pursuing residency or fellowship opportunities. During the course students will learn about various aspects involved in post-graduate training focused on residency and fellowship opportunities. As the basis of residency and fellowship knowledge is developed, the course will tackle various aspects related to finding the right residency or fellowship as well as securing and excelling in the residency or fellow application process. In addition, students will be linked to peers and mentors who are already pursuing residency/fellowship opportunities as well as alum during their post-graduate training.

PRAC 168. Introduction to Spanish for the Pharmacy Professional II. 1 Unit.

This elective course is designed to further develop competence in Spanish for use in pharmacy practice settings. Basic communication skills related to everyday situations in the pharmacy will be presented using lecture, interactive laboratory sessions, and online and textbook listening and speaking exercises. Vocabulary, phrases, questions, patient assessment, and patient interview for basic conditions and OTC counseling will be presented and practiced. The goal of this course is to continue to develop pharmacist skills using the Spanish language and its application in the pharmacy and also to develop a foundation for lifelong learning. Prerequisite: PRAC 153 with a 'C' or higher.

PRAC 169. Introduction to Spanish for the Pharmacy Professional II - TA. 1 Unit.

This course is designed to present an opportunity for pharmacy students who are fluent or proficient in the Spanish language to act as teaching assistants and assist other pharmacy students to learn in the class Spanish for the Pharmacy Professional. Teaching assistants will meet with the instructor prior to each class session for class preparation and will then participate in and lead class sessions. Prerequisites: First or second year standing in the pharmacy program. Current fluency or proficiency in Spanish as demonstrated to the course instructor. Students must not be on probation and must not have failed or received no credit in any required pharmacy course. Enrollment as a Spanish teaching assistant will be by permission of the instructor.

PRAC 172. Social Determinants of Health and Health Disparities. 2 Units.

This elective course is designed to enhance student understanding of social determinants of health and health disparities by extending content from other courses in order to meet curricular, student, and societal needs.

PRAC 191. Independent Study. 1-4 Units.

PRAC 193. Undergraduate Independent Study. 4 Units.

PRAC 197. Independent Research. 1-4 Units.