Thomas J. Long School of Pharmacy and Health Sciences

Doctor of Pharmacy Program Performance Objectives

&

Doctor of Pharmacy Curriculum

Effective: Fall 2009
March 30, 2009

Dear Alumni, Preceptors and Friends of the School:

In keeping with the School’s long standing tradition of excellence, I am excited to introduce you to the next generation of pharmacy education at Thomas J. Long School of Pharmacy and Health Sciences. As part of our continuing effort to better serve our students and the pharmacy industry we are reshaping the way our pharmacy students are educated. From a reorganization of course content for more efficient learning and encouraging students to be more active in their community to expanding experiential opportunities, our desire is to ensure a dynamic educational environment.

In determining what direction, focus and emphasis our revised Performance Objectives and curriculum should take, the Pharmacy Curriculum Committee was strongly influenced by the profession-wide vision for pharmacy practice and education, environmental factors within pharmacy and the health care industry in general, developments in pharmacy education, regulation and technology, and revised accreditation standards. I would like to thank the faculty and students of the Curriculum Committee as well as all those from the Pacific community who contributed, directly or indirectly, to the revision of our Performance Objectives and Curriculum.

Meeting the professional standards of tomorrow by advancing education today.

The Mission of the Doctor of Pharmacy program continues to guide the philosophy of our Performance Objectives to continually achieve optimal health outcomes by delivering superior patient care. This philosophy reflects an evolving industry standard of care that our students must be prepared to provide.

Service • Science • Scholarship

Changes in the PharmD curriculum seek to expand student opportunities to demonstrate their abilities. Revisions include an enhancement of the existing curriculum focusing on the ability to problem solve and think critically. Additionally, they incorporate an expanded Introductory Pharmacy Practice Experience through diversified fields of experience emphasizing pharmacy-directed care and public health.

The Thomas J. Long School of Pharmacy and Health Sciences’ faculty and staff consistently strive to fulfill our mission of producing highly competent and practice ready pharmacists, and look forward to working with the Pacific community as these new Performance Objectives and curriculum changes are implemented. Our continual goal is to assure the optimal preparation of pharmacists for current and future practice, and ultimately to improve the health care outcomes of the patients and populations that they serve.

If you have any questions, please do not hesitate to contact me or Associate Dean Eric Boyce, PharmD at 209.946.2561.

Best regards,

Phillip Oppenheimer, PharmD
Dean, Thomas J. Long School of Pharmacy and Health Sciences
University of the Pacific
A Doctor of Pharmacy graduate of the University of the Pacific’s Thomas J. Long School of Pharmacy and Health Sciences is a general pharmacy practitioner who has the ability to provide appropriate and rational pharmacist directed patient care and services to diverse populations and enhance patient outcomes in a variety of health care settings as both an independent and a collaborative practitioner / professional. Specifically, the graduate should be a self-directed learner that is able to appropriately, accurately, and efficiently:

**POSSESS AND APPLY PHARMACEUTICAL SCIENCES KNOWLEDGE**

I. Describe and apply the major concepts, important specifics, and inter-relationships among the basic and applied pharmaceutical sciences and related biomedical sciences.

   A. Describe and apply organization schemes for the classification of drugs
      1. Describe and apply an organization for the classification of drugs based on mechanisms of drug action, chemistry, pharmacokinetic properties, and use.
      2. Describe and apply an organization for the classification of drugs based on adverse drug effects and drug interactions.

   B. Describe and apply major concepts of pharmaceutics and pharmacokinetics.
      1. Describe the expected dissolution, absorption, distribution, binding, transport, metabolism, and elimination of a drug based on its general chemical structure, properties, and dosage formulation.
      2. Describe the expected effects of pharmacogenetics, physiology, and pathophysiology on the pharmaceutics and pharmacokinetics of a drug.

   C. Describe and apply major concepts of pharmacology and pharmacodynamics.
      1. Describe the major mechanisms of drug action.
      2. Describe the expected beneficial and harmful effects of a drug based on the chemical structure and pharmacologic action of that drug.
      3. Describe the expected effects of pharmacogenetics, physiology and pathophysiology on the pharmacology and pharmacodynamics of a drug.

D. Describe and apply the major concepts of social, behavioral, and administrative pharmaceutical sciences.

   1. Describe the major components, and use of pharmacoeconomics, outcome measures, and pharmacoepidemiology, medication errors detection and prevention systems, health care delivery systems, and pharmacy law.
   2. Describe and apply the major concepts of communication and interaction to enhance drug knowledge, adherence, compliance, and persistence.
   3. Describe and apply the major concepts and practices of pharmacy informatics systems to pharmacist directed patient care and other aspects of pharmacy practice.

E. Describe and apply the major concepts of clinical pharmaceutical sciences.

   1. Apply the major concepts of pharmaceutics, pharmacokinetics, pharmacology, pharmacodynamics, and the social, behavioral, and administrative pharmaceutical sciences to pharmacist directed patient care.
   2. Describe and apply the inter-relations and interactions among drug-, disease-, and patient-related characteristics to pharmacist directed patient care and other aspects of pharmacy practice.
   3. Describe the mechanisms of drug-drug/herbal, drug-nutrition, drug-disease, and drug-laboratory test interactions based on pharmaceutic, pharmacokinetic, pharmacologic, and pharmacodynamic properties.

F. Describe the processes involved in drug discovery, development, and approval.

   1. Describe the scientific basis for drug discovery and development.
2. Describe the stages involved in drug discovery and development, approval, and post-marketing surveillance.
3. Recognize and classify new and emerging technologies in drug discovery, development and application.

PERFORM PHARMACIST DIRECTED PATIENT CARE
II. Demonstrate professional and caring attributes, attitudes and behaviors.
   A. Develop professional rapport with the patient, caregiver, and health care team.
   B. Demonstrate empathy.
   C. Ensure that the patient’s and caregiver’s concerns, desires, and needs are reflected in the development of the care plan.

III. Provide pharmacist directed patient care as part of a health care team and system.
   A. Work as part of an interdisciplinary team.
   B. Consult and collaborate with other health care professionals about patient care.
   C. Refer patients to other health care professionals or health and community resources when appropriate.
   D. Communicate patient care plan to other health care professionals, patients, payers, and caregivers.

IV. Perform patient assessment.
   A. Collect and organize pertinent patient health and related information through patient and family interviews, patient records and profiles, and informatics systems, and other pertinent sources.
      1. Perform medication, medical, and surgical histories, including vaccination histories.
      2. Perform physical assessments
      3. Administer health assessment survey instruments
      4. Assess a patient’s health literacy.
      5. Perform a patient payment system analysis.
   B. Analyze patient information and care plans to determine the presence of any health-related problems and the appropriateness and effectiveness of therapy.
      1. Detect existing or potential disease states, drug-related, or other health-related problems.
      2. Assess patient adherence to drug and non-drug therapy.
      3. Recognize and determine the significance of potential problems or risks to wellness, disease prevention, or disease treatment associated with patient-specific factors, such as socioeconomic factors, diversity and cultural factors, genetics, dietary factors, complementary and alternative medicine, and concurrent prescription and nonprescription medications.
      4. Classify patient response to therapy as partial, complete, or other based on defined, evidence-based therapeutic outcomes.
      5. Interpret and explain results from standard laboratory and other diagnostic and monitoring tests.
      6. Recognize and assess medication-induced problems including side effects, drug toxicity, drug and dose appropriateness, and the misuse or abuse of therapeutic agents.
      7. Recognize and assess problems associated with bioavailability and pharmacokinetics.
      8. Identify and evaluate drug-drug, drug-disease and drug-food interactions.
      9. Determine the need to optimize treatment by adding, deleting, or substituting medications or modifying the drug formulation, dosing, or route of administration.
     10. Determine the need for additional laboratory and other clinical tests.
     11. Determine the urgency of the patient’s needs, including the need for emergency measures.

V. Design, recommend and initiate an individualized care plan.
   A. Determine the appropriateness of and provide recommendations for self-care, pharmacist-directed care, and referral.
   B. Determine desired outcomes using evidence-based resources and guidelines.
   C. Provide comprehensive, evidence-based care plan options that include, when appropriate, drug, non-drug,
prescription, non-prescription, complementary and alternative medicine therapies in addition to basic medical and surgical appliances and devices.

D. Analyze and compare the risks and benefits of the care plan options using sound scientific principles, evidence from clinical trials in humans and practice guidelines from reputable sources.

E. Develop patient-specific care plans according to sound economic and practice guidelines.

F. Recommend and initiate the therapeutic plan under protocol or other practice and when appropriate, order the medication, and administer the medication.

G. Recommend, initiate, and participate in the delivery of emergency measures.

H. Recommend and initiate measures to enhance continuity of care as patients transition from one care setting to another.

I. Administer medications as directed under protocol or other practice.

J. Educate patients about disease prevention.

VI. Design and implement an individualized monitoring plan for the care plan based on evidence-based resources and guidelines.

A. Develop, recommend, and initiate comprehensive, individualized monitoring plans to assess common diseases and disorders and their respective therapies.

B. Predict, assess and provide plans to detect and manage potential drug-drug, drug-disease, drug-nutrition, and drug-laboratory test interactions.

C. Predict the probable outcomes of drug therapies including beneficial and adverse effects and interference with laboratory and other clinical tests.

D. Order laboratory and other clinical tests.

E. Evaluate the patient’s response to therapy.

F. Recognize when to stop therapy based on the patient’s response, protocols, and evidence-based resources.

VII. Design and provide individualized patient education based on patient’s needs and care plan.

A. Evaluate the relative value of non-drug therapy and self-care products.

B. Advise patients in the selection, administration, storage, use, and disposal of care and monitoring modalities.

C. Evaluate the need and provide patients with recommendations on the selection, use, and care of common/basical medical and surgical devices and appliances.

D. Evaluate the need and provide patients with recommendations on the selection, use, interpretation, and care of readily available diagnostic and monitoring devices.

E. Educate patients about expected therapeutic and common adverse effects from medication.

F. Provide patients with information on when and how to seek additional medical care.

VIII. Document the care plan and other pertinent patient information.

A. Collect and organize pertinent patient health and related information.

B. Document the patient’s patient history, assessment, recommendations and plans for therapy and monitoring in the appropriate portion of the medical record.

C. Write a drug order.

D. Report serious adverse drug effects and medication errors to appropriate health care providers, review groups, and national databases such as MEDWATCH, ISMP, etc.

E. Document interventions and the results of those interventions.

IX. Operate a practice according to sound management, quality improvement, and patient outcome principles.

A. Develop, evaluate, initiate, monitor, and, if needed, revise a business plan for an existing or new pharmacy and pharmacy services.

1. Create vision and purpose statements for a pharmacy or pharmacy service.

2. Develop, evaluate, initiate and utilize a needs analysis and environmental scan to determine the feasibility
of the pharmacy or pharmacy service.
3. Determine the needed resources, reimbursement, and other potential sources of funding for the pharmacy or pharmacy service.
4. Set parameters for success and for failure.
5. Develop, initiate, evaluate, and, if needed, revise the pharmacy or pharmacy service.
6. Develop, initiate, monitor, and revise a marketing plan.

B. Develop and maintain a financial management system for pharmaceutical products, services and programs.
1. Devise, evaluate, and implement sound financial planning and business procedures.
2. Monitor the financial plan and business procedures for appropriateness.
3. Bill third party payers for products and services.
4. Develop and maintain an inventory ordering, control, storage, and distribution system.
5. Design and implement economic outcomes studies related to formulary decisions and therapeutic guideline development.

C. Develop and maintain a personnel management system for pharmaceutical services and programs.
1. Describe, analyze, and differentiate the role of pharmacists, pharmacy interns, pharmacy technicians, and clerks in the delivery of pharmacy services.
2. Describe and utilize basic principles in the management of technical and professional personnel.
3. Describe, analyze, review, and participate in the training of pharmacy staff.
4. Recognize signs and symptoms of cognitive impairment in the workplace, and take action when needed.

D. Apply computer skills and technological advancement to practice.
1. Evaluate and utilize existing and emerging technologies to enhance pharmacy services, information management and dissemination, and drug use and safety.

E. Locate, acquire, interpret, evaluate, and utilize medication, patient, practice, and health information.
1. Obtain and maintain health information pursuant to legal standards.
2. Utilize common informatics systems to find and obtain the appropriate health or patient related information.
3. Demonstrate proper interview skills to obtain appropriate health information.
4. Evaluate information and information sources to determine the appropriateness and use of the information.
5. Provide recommendations based on evidence based principles and information from a variety of resources.

F. Develop programs to improve drug use, medication safety, pharmacy errors, economic outcomes, and health care in select populations.
1. Identify and appropriately utilize quality improvement program guidelines.
2. Describe, develop, and utilize practice and disease management guidelines and protocols, medication use management systems, medication use evaluation, critical and clinical pathways, collaborative practice agreements, etc.
3. Describe, develop, and utilize methods to enhance medication use and safety, reduce medication misuse and over- or under-use, reduce medication and medical errors, report adverse drug events, etc.
4. Develop innovative programs to enhance drug use and safety.
5. Utilize pharmacoeconomic principles, concepts, and data in providing recommendations for specific patient populations and individual patients.
6. Develop and initiate programs to evaluate pharmacy service programs.
7. Analyze and utilize data to improve pharmacy service programs.
8. Provide education to participants in the medication use system.

G. Develop and utilize methods to document plans, interventions, and outcomes.
1. Utilize technology to document and communicate pertinent information.

X. Dispense medication in accordance with legal, pharmaceutical and professional standards.
A. Evaluate a prescription or medication order for completeness and appropriateness.
1. Describe and comply with the legal requirements of a valid prescription order.
2. Identify, evaluate, and make any needed recommendations on a medication dose, dosage form, route, regimen (frequency, duration, etc.), and compatibility of medications.
B. Evaluate and respond to a request for a prescription refill.
1. Determine whether or not the prescription can be refilled based on legal and regulatory aspects.
2. Determine whether or not the prescription should be refilled based on the patient’s response, adverse effects, care plan, standards of care, and evidence-based guidelines.
3. Determine and make needed recommendations for adjustments in the drug, dose, frequency, duration, or route.

C. Compound drugs and drug combinations.
1. Perform calculations correctly.
2. Measure quantities needed to compound the medication.
3. Compound the prescribed ingredients according to formula, stability characteristics, intended route of administration, and patient acceptability.
4. Compound for patients’ specialized requirements as needed.
5. Perform packaging and labeling functions to promote product stability and facilitate patient understanding and compliance.

D. Perform quality assurance procedures as part of the dispensing process.
1. Verify that patient records are maintained.
2. Consult with the patient or patient’s representative and review his/her record for pertinent information before dispensing the medication.
3. Verify that medications are processed, compounded, labeled and dispensed based upon accepted standards of practice.

E. Acquire, evaluate and utilize pertinent information necessary for proper drug selection.
1. Set-up, maintain, and utilize patient records.
2. Review patient records for adverse drug reactions and other health-related problems.

F. Describe the regulatory process related to drug studies and the role and services provided by an investigational drug pharmacist.

XI. Comply with legal, regulatory, and accreditation factors and respond to other factors that influence pharmacy practice.
A. Describe and comply with the legal requirements of a pharmacist, pharmacy, and pharmacy practice according to federal and state (California) laws and regulations.
1. Describe the legal responsibilities and roles of the pharmacist, pharmacy intern, pharmacy technician, and other personnel.
2. Describe and comply with the requirements for acquisition and distribution of pharmaceutical products.
3. Describe and comply with the legal procedures and requirements for dispensing and distributing controlled substances and other pharmaceutical products.
4. Describe and comply with the legal requirements regarding documentation and counseling.
5. Describe and comply with the proper procedures for maintaining records on pharmaceutical products and patients, including maintaining confidentiality.
6. Describe the qualifications, application procedure, examinations, certification, and internship requirements for licensure as a pharmacist, pharmacy intern, and pharmacy technician.
7. Describe the requirements, application procedure, and operational requirements for registration, licensure, certification, or permitting of a pharmacy practice or business.
8. Describe the roles of the state and federal administrative agencies related to the practice of pharmacy.
9. Describe the pharmacy practice act and its impact on the practice of pharmacy.
10. Recognize when a pharmacy associated law or regulation is being followed or violated.
11. Describe the actions and consequences of violations of pharmacy associated laws or regulations.
12. Comply with the rules and regulations of fiscal intermediaries.

B. Conform to the standards set by accrediting agencies.
1. Describe the general purpose of health and pharmacy accrediting agencies.
2. Describe the major components of JCAHO accreditation as it relates to pharmacy.
3. Participate in maintaining compliance with accreditation standards.
4. Analyze a report from an accrediting agency and determine the major areas in need of change.
C. Recognize and respond to other external forces and advance the profession of pharmacy.
   1. Analyze the impact of current, new and proposed laws and regulations on pharmacy practice.
   2. Describe how state and federal legislatures, insurance companies, governmental agencies, pharmaceutical manufacturers and wholesalers influence the practice of pharmacy.
   3. Describe methods by which individuals or groups of pharmacists can influence decision makers (governmental legislators, industry).
   4. Identify problems encountered in pharmacy practice.
   5. Identify opportunities for advancement of the profession.
   6. Display initiative and proactively participate in activities to advance the profession.

PROMOTE PUBLIC HEALTH

XII. Promote knowledge and behaviors to enhance the health of the public.
A. Describe public health and how it works.
   1. Describe the organization and function of public health at the local, regional, and national levels.
   2. Describe the interactions involving public health among governmental agencies, volunteer and professional organizations, and private companies.
   3. Describe the major public health initiatives nationally and locally.
   4. Recognize the public’s health care needs within the local community, including needs associated with culture and diversity.
B. Describe the role of the pharmacist in public health.
C. Describe the role of the pharmacist in the development of public health policy.
D. Explore and utilize major national and local health initiatives to identify and utilize methods for pharmacist involvement.
   1. Identify and evaluate public health information, including documents and databases.
   2. Identify and develop methods to enhance health knowledge, behaviors, and access.
   3. Identify public health needs based on local and national health initiatives and information.
   4. Provide pharmacy input and representation to health-oriented boards, committees, commissions, task forces, and regulatory bodies.
E. Utilize services, organizations, and agencies to promote health knowledge, skills, and behaviors.
   1. Identify potential partners for health care outreach projects or services.
   2. Develop a rapport with the appropriate individual in the service, organization or agency.
   3. Identify the rules, regulations, and delivery methods for health care outreach through the service, organization or agency.
   4. Develop a plan for and expected outcomes from the delivery of a health care outreach program through the service, organization or agency.
   5. Participate in health care outreach programs.
   6. Document the activities and outcomes associated with a health care outreach program.
F. Provide public health education and service.
   1. Promote health improvement, wellness, and disease prevention.
   2. Provide screening, disease prevention, and disease monitoring and assessment for common disorders and major health problems.
   3. Provide health-related presentations.
      a. Apply the concepts of effective communication and teaching.
      b. Select and implement methods of information delivery.
   4. Provide health-related information and/or expertise.
      a. Select reputable resources for health care information.
      b. Select and implement methods of information delivery.
      c. Evaluate, interpret, and present health care information.
      d. Provide and justify professional recommendations.
   5. Describe the pharmacist’s role in emergency preparedness and bioterrorism.
DEMONSTRATE PROFESSIONALISM, COMMUNICATION & INTERACTION ABILITIES

XIII. Demonstrate professionalism with patients, other health professionals, and the public.
   A. Demonstrate professionalism in attitude, action, and appearance.
      1. Demonstrate confidence, initiative, responsibility, proactivity, independence, and collaboration in professional interactions and activities.
      2. Assume personal responsibility and accountability for communications, decisions, and actions.
      3. Dress in a professional manner appropriate for each situation and setting.
      4. Communicate and interact respectfully with others.
      5. Adhere to confidentiality and privacy practices in accordance with HIPPA regulations, health care site policies and procedures, and standards of practice.
      6. Respond to feedback in a productive, positive, and timely manner.
   B. Practice pharmacy and interact with others according to accepted professional codes of ethics and resolve personal moral conflicts with the patient’s best interests as the foremost concern.
      1. Describe the basic elements of the professional code of ethics for pharmacists.
      2. Identify an ethical issue and describe and demonstrate an approach to analyzing and resolving the ethical issue.
      3. Determine when a professional code of ethics has been adhered to or violated and respond with appropriate action.
   C. Demonstrate cultural competence and diversity awareness and sensitivity.
      1. Describe the major differences in philosophy, life style, health care practices, risk for disease, and access to health care for major groups based on gender, age, ethnicity/culture, socioeconomics, and religion.
      2. Describe and demonstrate a sensitive and respectful approach to individuals from diverse population groups.
   D. Be an effective team member and team leader.
      1. Identify the roles of the leader and members on a team.
      2. Lead a team in completion of a project.
      3. Be an active, productive member of a team.
      4. Analyze the group dynamics on a team and identify the major strengths and weaknesses of the team and the leader.
      5. Identify different leadership skills, methods, and approaches.

XIV. Communicate and interact with patients, other health care professionals, and the public.
   A. Demonstrate caring behaviors.
   B. Communicate using oral, written, electronic, and multi-media methods.
   C. Assess and insure the comprehension of the communication or interaction.
   D. Communicate with individual patients and health care professionals.
      1. Obtain a patient’s medication and medical history.
         a. Obtain a detailed medication history of current and previous use of prescription, nonprescription, and complementary and alternative, and nondrug therapies.
         b. Obtain a history of dietary habits and use of alcohol, tobacco, and recreational drugs.
         c. Obtain information and assess a patient’s adherence with a care plan.
         d. Obtain a patient’s past medical history and history of recent/current symptoms.
      2. Counsel patients regarding drug and non-drug therapy, monitoring, prevention, and disease state.
         a. Educate a patient about the proper use, administration, and storage of drugs.
         b. Educate a patient to recognize and manage potential adverse drug reactions, including when to seek additional medical assistance.
         c. Educate the patient on their disease or medical problem.
         d. Educate the patient on how to prevent disease development and exacerbation.
e. Counsel a patient on the usefulness, instructions, and desired or expected results of self-monitoring
devices, including when to seek additional medical assistance.
f. Verify the patient’s understanding of information presented.
g. Identify a patient’s willingness and ability to comply with a care plan.
h. Provide unbiased information, advice, and other sources of information to patients.

E. Communicate with a team of health care professionals / providers.
   1. Consult with other health professionals about the care of the patient.
      a. Be able to define the relationship between the patient and other health care providers.
      b. Be able to present a case and discuss pertinent patient information with the health care providers.
   1. Educate health care professionals on pharmacological disease state management, formulary considerations, and implementation of treatment guidelines.
   2. Select and utilize pertinent, reputable resources of health care information.
   3. Educate health care professionals on pharmacology, pharmacodynamics, pharmacokinetics, pharmacogenomics, pharmacoeconomics, and best therapeutic options.
   4. Evaluate, interpret and present health care information.
   5. Provide and justify professional recommendations.
   6. Provide unbiased information and recommendations to other health care professionals.

F. Communicate with large groups of individuals.
   1. Design, prepare, and deliver an oral presentation to a large audience.
   2. Design and prepare written and other visual materials for a large audience, such as posters and informational pamphlets.

PROBLEM SOLVE AND CONTINUE TO LEARN

XV. Demonstrate problem solving and critical thinking abilities.

A. Identify and solve problems in pharmacy practice and related settings.
   1. Recognize and identify a problem.
   2. Determine the likely causes of the problem.
   3. Collect and analyze additional pertinent information to clarify the significance, nature, and likely causes of the problem.
   4. Prioritize the problem relative to other problems to determine how to proceed in solving and resolving the problem.
   5. Develop potential solutions and select the best option(s).
   6. Create, defend, and implement the solution(s) to the problem.
   7. Monitor the problem for resolution and need for adjustments.

B. Identify & test hypotheses,
   1. Generate hypotheses to answer a specific question.
   2. Collect and analyze background information in order to justify and refine the hypothesis.
   3. Create and implement a method to test the hypothesis based on the literature.
   4. Collect, store, analyze, and report the data collected.
   5. Create a summary and rationale conclusion based on the methods, data collected, and limitations.
   6. Provide appropriate extrapolations of the data to similar and general scenarios.

C. Analyze and critique biomedical and health-related literature and information based on scientific methodology and logical reasoning.
   1. Identify and analyze the background, rationale for, potential importance, and goals and objectives of the study or report.
   2. Identify and analyze the methodology used, including the general study design, inclusion and exclusion criteria, interventions and controls, primary and secondary outcome measures, and statistical methods.
   3. Determine the strengths and weaknesses of the design of the study or problem solving method used.
   4. Summarize and interpret the results for the primary and pertinent secondary outcome measures.
   5. Determine the specific and general conclusions, solutions, and alternatives.
6. Determine the significance and relevance of the results, including application to specific and general populations or situations.

7. Present specific and general findings and the use of those findings.

8. Implement practices and solutions based on the conclusions, recommendations, and guidelines.

9. Apply the findings or content to appropriate situations.

D. Maintain and enhance professional competence through continued / lifelong learning

1. Demonstrate the desire to learn, maintain, and improve professional abilities

2. Describe the need for and benefits of life-long learning

3. Describe methods to enable and enhance life-long learning

4. Develop and initiate an individualized plan for lifelong learning.
University of the Pacific  
Thomas J. Long School of Pharmacy and Health Sciences  
Doctor of Pharmacy Program Curriculum Overview

The Mission of the Doctor of Pharmacy Program at the Thomas J. Long School of Pharmacy and Health Sciences is to provide an exemplary educational experience leading to highly competent and practice-ready, caring pharmacists and pharmaceutical scientists who will be accountable for improving the health and well-being of society. We seek to advance knowledge through collaborative education, science, research, service, patient care, and advocacy. We strive to achieve academic and professional excellence.

The Doctor of Pharmacy program is an accelerated program completed over eight consecutive semesters. The newly revised curriculum, which will be implemented for students starting in August 2009, is highlighted by increased emphasis on early practice experience and problem solving while maintaining solid development in the basic and applied pharmaceutical sciences.

The revised Doctor of Pharmacy curriculum is as follows:

**Doctor of Pharmacy Curriculum**

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<th>141 Units</th>
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<tr>
<th>Semester I - 19 Units</th>
<th>Semester II - 18 Units</th>
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<tr>
<td>Pharmacy Practice &amp; Professionalism</td>
<td>Informatics, Statistics &amp; Research Design</td>
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<td>Dispensing, Compounding &amp; Calculations</td>
<td>Physiology &amp; Pathophysiology I</td>
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<td>Molecular &amp; Cellular Biochemistry</td>
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<th>Semester IV - 17-19 Units</th>
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<td>Pharmacology &amp; Medicinal Chemistry I</td>
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<th>Semester VI - 15-17 Units</th>
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<td>Pharmacy Law &amp; Ethics</td>
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<td>Therapeutics III Cardiology</td>
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<td>Therapeutics VII Endocrine/Musculoskeletal</td>
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*APPE = Advanced Pharmacy Practice Experience, IPPE = Introductory Pharmacy Practice Experience*

* Each student must complete a total of at least 4 units of electives during Semesters I to VI.

@ PHRM 160 Practice-Based IPPE may be taken instead of PHRM 159

$ PRAC 143 Health Care Outreach IPPE – Medicare Part D may be taken instead of PHRM 169
PHRM 111  Pharmacy Practice & Professionalism  
3 Units  
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.

PHRM 112  Dispensing, Compounding and Calculations  
3 Units  
This course will present mathematical concepts as they apply to the practice of pharmacy. The course will also present 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  
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  
A study of 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  
Principles of triage and self care using 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 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, 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 & Research Design  
3 Units  
Students will 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: Successful completion of (passing grade in) all required courses in Semester 1 in the Doctor of Pharmacy program.

PHRM 122  Physiology & Pathophysiology I  
5 Units  
An integrated study of the cellular, anatomical, physiological, and pathophysiological components of the nervous and gastrointestinal systems. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 of the Doctor of Pharmacy program. Concurrent enrollment or prior successful completion of PHRM 123 Physiology & Pathophysiology II.
PHRM 123  Physiology & Pathophysiology II  5 Units
An integrated study of the cellular, anatomical, physiological, and pathophysiological components of the pulmonary, cardiovascular and renal systems. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 of the Doctor of Pharmacy program. Concurrent enrollment or prior successful completion of PHRM 122 Physiology & Pathophysiology I.

PHRM 124  Drug Metabolism and Disposition  3 Units
A continuation of PHRM 114 (Physical Pharmacy and Dosage Form) utilizing the LADME framework (Liberation, Absorption, Distribution, Metabolism, and Excretion) to understand the biopharmaceutic, biometabolic and pharmacokinetic concepts underlying drug action. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 of the Doctor of Pharmacy program.

PHRM 129  Community I Introductory Pharmacy Practice Experience  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. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 of the Doctor of Pharmacy Program. Current Pharmacy Intern license.

PHRM 134  Pharmacokinetics & Advanced Drug Delivery Systems  4 Units
A continuation of PHRM 114 Physical Pharmacy & Dosage Forms and PHRM 124 Drug Metabolism & Disposition utilizing 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 will be covered. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 2 in the Doctor of Pharmacy program.

PHRM 135  Pharmacology & Medicinal Chemistry I  4 Units
A continuation of PHRM 114 Physical Pharmacy & Dosage Forms and PHRM 124 Drug Metabolism & Disposition utilizing 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 will be covered. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 2 in the Doctor of Pharmacy program.

PHRM 136  Pharmacology & Medicinal Chemistry II  4 Units
The second course in the Pharmacology and Medicinal Chemistry series, effects of antimicrobial, hematologic, and gastrointestinal 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 mechanisms of drug toxicity is also covered. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 to 2 of the Doctor of Pharmacy program.

PHRM 138  Practicum II  2 Units
Students will develop communication, assessment and documentation abilities to prepare them for didactic courses and practice experience. Students will 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 will assess simulated patient scenarios using a standardized SOAP (subjective data, objective data, assessment, plan) format. Each student will be expected to demonstrate proficiency in each major ability. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 2 of the Doctor of Pharmacy program.

PHRM 139  Geriatrics Introductory Pharmacy Practice Experience  2 Units
An introductory practice-based introductory experience focusing 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. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 and 2 of the Doctor of Pharmacy program. Current Pharmacy Intern license.
PHRM 142  Physiology & Pathophysiology III  5 Units
An integrated study of the cellular, anatomical, physiological, and pathophysiological components of the pulmonary, cardiovascular and renal systems. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 to 3 of the Doctor of Pharmacy program.

PHRM 145  Pharmacology & Medicinal Chemistry III  4 Units
The third course in the Pharmacology and Medicinal Chemistry series, effects of cardiovascular, endocrine, cancer chemotherapy, immunologic 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. Prerequisite: Successful completion of (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 will develop the abilities to assess and develop patient-specific care plans for patients with specific 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. Prerequisite: Successful completion of (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 will 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 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. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 3 in the Doctor of Pharmacy program.

PHRM 149  Hospital Introductory Pharmacy Practice Experience  2 Units
Hospital introductory pharmacy practice experiences are a method to enhance each student’s understanding of the role and responsibilities of pharmacists in the institutional setting and to gain experiences with the medication use system and with other health care providers within a hospital. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 and 2 of the Doctor of Pharmacy program. Current Pharmacy Intern license.

PHRM 151  Pharmacoeconomics, Benefits & Outcomes  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 and Medicare and its role in US health care delivery. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program.

PHRM 152  Pharmacy Law & Ethics  4 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. Focus is upon analyzing, understanding and applying these issues through case studies and hypotheticals. Considerable emphasis on professionalism and the historical events that have shaped today’s professional pharmacy practice, as well as the drug development and distribution system. Prerequisite: Successful completion of (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 will develop the abilities to assess and develop patient-specific care plans for patients with specific cardiovascular diseases 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. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 4 in the Doctor of Pharmacy program.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td>PHRM 157</td>
<td>Therapeutics IV Renal/Respiratory</td>
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<td>Students will develop the abilities to assess</td>
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<td>and develop patient-specific care plans for</td>
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<td>patients with renal and respiratory diseases.</td>
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<td>Lectures, readings, and discussion will enable</td>
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<td>students to develop the abilities to assess,</td>
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<td>manage, and document simple to complex patients</td>
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<td>with renal and respiratory-related issues.</td>
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<td>Prerequisite: Successful completion of (passing</td>
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<td>PHRM 158</td>
<td>Practicum III</td>
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<td>Problem solving and critical thinking skills</td>
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<td>will be developed through the discussion and</td>
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<td>solution of complex cases and problems, with a</td>
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<td>focus on patients with multiple disorders and</td>
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<td>patients from various cultures or diverse</td>
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<td>populations and pediatric and geriatric</td>
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<td>populations. Problem solving and critical thinking</td>
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<td>skills will also be developed through the</td>
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<td>discussion and solution of cases and problems</td>
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<td>involving the clinical pharmacokinetics of</td>
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<td>select drugs, including the determination and</td>
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<td>documentation of initial dosing recommendations,</td>
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<td>dosage adjustments, drug concentration</td>
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<td>predictions, and monitoring plans. Prerequisite:</td>
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<td>Doctor of Pharmacy program. Concurrent enrollment</td>
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<td>or prior successful completion of PHRM 156-157</td>
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<td></td>
<td>Therapeutics III-IV.</td>
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<td>PHRM 159</td>
<td>Community II Introductory Pharmacy Practice</td>
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<td></td>
<td>Experience</td>
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<td></td>
<td>Community II introductory pharmacy practice</td>
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<td>experiences are a method to enhance each student’s</td>
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<td>understanding of the role and responsibilities</td>
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<td>of pharmacists in the community setting and to</td>
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<td>gain experiences with the medication use system</td>
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<td>within a community pharmacy and expand the</td>
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<td>abilities developed in Community I</td>
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<td>introductory pharmacy practice experience.</td>
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<td>Pharmacy Intern license.</td>
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<td>PHRM 160</td>
<td>Practice-Based Introductory Pharmacy Practice</td>
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<td>Experience</td>
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<td>The Practice-Based introductory pharmacy practice</td>
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<td>experience is another method to enhance each</td>
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<td>student’s understanding of the role and</td>
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<td>responsibilities of pharmacists and medication</td>
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<td>distribution and use process in any one of a</td>
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<td></td>
<td>variety of pharmacy practice settings. Prerequisite:</td>
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<td>Successful completion of this course satisfies</td>
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<td>completion of PHRM 159 Community II Introductory</td>
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<td>Pharmacy Practice Experience.</td>
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<td>PHRM 161</td>
<td>Pharmacy Management</td>
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<td></td>
<td>An analysis of financial management principles</td>
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<td>applicable to pharmacy practice. An analysis of</td>
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<td>human resources management applicable to pharmacy</td>
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<td>practice. Prerequisite: Successful completion of</td>
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<td>(passing grade in) all required courses in</td>
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<td>Semesters 1 to 5 in the Doctor of Pharmacy</td>
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<td>program.</td>
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<td>PHRM 165</td>
<td>Therapeutics V Infectious Diseases</td>
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<td>Infectious Disease Therapeutics is an integrated</td>
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<td>course where students will be taught to bring</td>
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<td>Medical Microbiology, Pharmacology, Physiology,</td>
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<td>Immunology, Pharmacokinetics, Pharmacodynamics</td>
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<td>and Chemotherapeutics together in order to care</td>
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<td>for patients with treatable infectious diseases.</td>
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<td>and develop patient-specific care plans for</td>
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<td>patients with infectious disease conditions,</td>
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<td>including prevention and drug-induced problems</td>
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<td>utilizing applied pharmaceutical science principles and knowledge. Lectures, readings,</td>
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<td>presentations and discussions will enable students to develop the ability to assess, manage, and document therapeutic care plans of varying complexity for patients with infectious disease. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 5 in the Doctor of Pharmacy program.</td>
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<td>PHRM 166</td>
<td>Therapeutics VI Oncology/Transplantation</td>
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<td>Students will develop the abilities to assess</td>
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<td>and develop patient-specific care plans for</td>
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<td>patients with specific conditions, diseases,</td>
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<td>disorders of cancers and transplants and drug-</td>
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<td>induced problems utilizing basic and applied</td>
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<td>pharmaceutical science abilities. Lectures,</td>
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<td>readings, and discussion will enable students to</td>
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<td>develop the abilities to assess, manage, and</td>
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<td>document simple to complex patients with cancers</td>
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<td>or transplants. Prerequisite: Successful</td>
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<td>completion of (passing grade in) all required</td>
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<td>courses in Semesters 1 to 5 in the Doctor of</td>
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<td>Pharmacy program.</td>
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PHRM 167  Therapeutics VII Endocrine/Musculoskeletal   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. Prerequisite: Successful completion of (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 will be 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 will also be developed through the discussion and solution of cases and problems involving the clinical pharmacokinetics of select drugs, including the determination and documentation of initial dosing recommendations, dosage adjustments, drug concentration predictions, and monitoring plans. Prerequisite: Successful completion of (passing grade in) all required courses in Semesters 1 to 5 of the Doctor of Pharmacy program. Concurrent enrollment or prior successful completion of PHRM 165-167 Therapeutics V-VII.

PHRM 169  Health Care Outreach Introductory Pharmacy Practice Experience   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 those activities on the public and on themselves. Prerequisite: Successful completion of (passing grade in) all required courses in Semester 1 of the Doctor of Pharmacy program Current Pharmacy Intern license, Current blood bourne pathogen and CPR certifications.

PHRM 171  Internal Medicine 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. 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 entry into advanced pharmacy practice experiences Satisfy the institution’s policies and procedures on healthcare trainee or worker eligibility, such as background.

PHRM 172  Ambulatory Care APPE   6 Units
A clinical pharmacy practice rotation at an affiliated clerkship site with emphasis on providing pharmaceutical care for ambulatory care patients, including the medical management of disease states, rational drug therapy, and patient monitoring. 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 entry into advanced pharmacy practice experiences. Satisfy the institution’s policies and procedures on healthcare trainee or worker eligibility, such as background checks and screenings, HIPAA training, etc. Valid pharmacy intern license.

PHRM 173  Hospital Pharmacy APPE   6 Units
A hospital pharmacy practice rotation at an affiliated clerkship site with enhanced experience 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. 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. Satisfy the institution’s policies and procedures on healthcare trainee or worker eligibility, such as background checks and screenings, HIPAA training, etc. Valid pharmacy intern license.
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 will allow 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 will actively participate in the day-to-day activities that comprise the work of a pharmacist practicing in the community setting. In addition, students will have the opportunity to engage in pharmacy practice activities including pharmacy management, medication therapy management and other pharmaceutical care services, and public health promotion and preventive care services. 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. Satisfaction of academic standards for progression into Advanced Pharmacy Practice Experiences. Satisfy the institution’s policies and procedures on healthcare trainee or worker eligibility, such as background checks and screenings, HIPAA training, etc. Valid pharmacy intern license.

PHRM 184  Elective APPE 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 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 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. Satisfy the institution’s policies and procedures on healthcare trainee or worker eligibility, such as background checks and screenings, HIPAA training, etc. Valid pharmacy intern license.

PHRM 185  Elective APPE 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. Satisfy the institution’s policies and procedures on healthcare trainee or worker eligibility, such as background checks and screenings, HIPAA training, etc. Valid pharmacy intern license.