PHARMACY — PHARM.D.

The curriculum at Loma Linda University School of Pharmacy is intensive and dynamic. The school reserves the right to change the curriculum after due deliberation of the Curriculum Committee and the Executive Committee. Students will be notified of all changes.

Admissions

General entrance information

Applicants to the School of Pharmacy must fulfill the prerequisite course requirements listed below. For a course to fulfill the biology, chemistry, organic chemistry, and physics prerequisites, it must be taken at the level of those required for a science major in the field. Introductory courses are not acceptable. Courses accepted to fulfill the prerequisites for biochemistry, microbiology, and human anatomy may be taken at any level as long as the unit requirements are fulfilled. The minimum cumulative G.P.A. and cumulative mathematics/science G.P.A. considered for acceptance to the School of Pharmacy is 2.75 on a 4.00 scale.

Required courses (semester/quarter units)

- General biology, with laboratory* (8/12)
- General chemistry, with laboratory* (8/12)
- Organic chemistry, with laboratory** (8/12)
- General physics, with laboratory* (8/12)
- General biochemistry (3/4)
- General microbiology (3/4)
- Human anatomy** (3/4)
- Calculus – integral and differential (3/4)
- Speech communication (3/4)
- Economics – macro or micro (3/4)
- General psychology (3/4)

Decisions regarding the final determination of acceptable courses as prerequisites reside with the School of Pharmacy Admissions Committee in collaboration with the Office of University Records.

- A full sequence of course work is required for general biology, general chemistry, organic chemistry, and general physics. The semester and quarter units listed in the table above are a general guideline for the minimum number of units that must be completed to fulfill the prerequisite requirements. These minimum units may not be the same in all universities/colleges.
- ** The requirement for human anatomy can be met with a combined human anatomy and physiology course. Courses that only cover human physiology will not be accepted to fulfill this prerequisite.

In rare circumstances, an applicant who has not completed a bachelor’s degree may be considered for admission into the School of Pharmacy. An applicant without a bachelor’s degree must complete an additional 6 semester or 9 quarter units of course work in social and behavioral sciences, an additional 12 semester or 18 quarter units of course work in humanities and fine arts, and an additional 6 semester or 9 quarter units of English composition.

Recommended courses

Cellular and molecular biology
Histology

Immunology
Physiology

Recommended experience

It is highly recommended that applicants obtain volunteer or pharmacy work experience.

Application and acceptance requirements

Application process

The School of Pharmacy only accepts online applications through the central application service PharmCAS. The link to PharmCAS and other required forms are available online at <llu.edu/central/apply>.

Procedure

The application procedure is as follows:

- Online submission of Doctor of Pharmacy application through PharmCAS.
- When the PharmCAS application is received, Loma Linda University School of Pharmacy will request completion of an LLU secondary application.
- Three online letters of recommendation from previous instructors, employers (pharmacist employer, if possible), and a spiritual advisor (required).
- Written personal statement (answer all questions in two pages or less).
- Projected College Work form (if applicable).
- Completed Academic Prerequisite Record form (available after the LLU secondary application is submitted).
- Payment of the $75 application fee by check or credit card, submitted with the online LLU secondary application.
- After the secondary application and letters of reference have been submitted and reviewed, the applicant may be invited for an interview. All application documents are evaluated by the School of Pharmacy Admissions Committee to determine if the applicant is accepted, placed on an alternate list, or denied. All applicants are notified of the final committee decision. Admission into the School of Pharmacy continues until the class is filled.

Acceptance process

The accepted applicant is sent an e-mail acceptance letter that includes a link to the online confirmation process and deadline. At this link, the accepted applicant can confirm and pay the $500 class-holding fee electronically. The class-holding fee can also be paid by check for an additional processing fee of $25. The class-holding fee is applied to the student’s financial account at the time of matriculation. Class-holding fees are nonrefundable. A follow-up acceptance letter is also mailed to the applicant’s home address.

International applicants

International applicants must have their transcripts reviewed by one of the following evaluation services prior to applying:

- Educational Credential Evaluators, Inc. (ECE) <http://www.ece.org/>
- World Education Services (WES) <http://www.wes.org/>

If the applicant’s native language is not English, or if most education was completed in a non-English program, a score of at least 79 (Internet based) on the Test of English as a Foreign Language (TOEFL) is required. Some consideration is given to applicants who have earned a college
degree in an English-speaking country. Please visit <http://www.ets.org/toefl> for more information.

**Rolling admission**
The School of Pharmacy has a rolling admission policy in which completed applications are reviewed and students are accepted on a continual basis within the period from November through the end of March.

**Admission deadline**
The School of Pharmacy accepts applications through PharmCAS from July through November (dates may vary) for entry in September of the following year.

Transcripts, evaluation of international transcripts (if applicable), and TOEFL scores (if applicable) should be mailed to the following address:

Admissions Processing  
Loma Linda University  
11139 Anderson Street  
Loma Linda, CA 92350

Letters of recommendation are now accepted only through the online application. Instructions for online letters are given once an application has been started. Committee letters are accepted from Seventh-day Adventist colleges/universities only and will fulfill the requirement for recommendation letters.

**Degree requirements**

### First Year

#### Autumn Quarter

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<th>Course Code</th>
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<td>RXTH 570</td>
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<td>IPDM XIII: Special Populations</td>
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<td>RXTH 775</td>
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<tbody>
<tr>
<td>RXEE 823</td>
<td>Advanced Pharmacy Practice Experience III</td>
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Pharmacy Practice/Pharmaceutical Care Courses

**RXEE 591. Introduction to Community Pharmacy Practice I. 2 Units.**
Part of a two-course sequence for practical exposure to community pharmacy practice. Student learns through practicum and reflection the basic skills required in community pharmacy practice.

**RXEE 592. Introduction to Community Pharmacy Practice II. 2 Units.**
Part of a two-course sequence for practical exposure to community pharmacy practice. Student learns basic skills required in community pharmacy practice through practicum and reflection.

**RXEE 690. Introduction to Hospital Pharmacy Practice. 2 Units.**
Exposes students to the various clinical, administrative, and distributive roles and responsibilities of a hospital pharmacist. Prerequisite: P2 standing.

**RXEE 790. Introduction to Clinical Pharmacy Practice. 2 Units.**
Exposes students to a variety of clinical pharmacy services—including ambulatory care, medicine, and a number of specialty practice areas. Prerequisite: P3 standing.

**RXEE 821. Advanced Pharmacy Practice Experience I. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

**RXEE 822. Advanced Pharmacy Practice Experience II. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

**RXEE 823. Advanced Pharmacy Practice Experience III. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

**RXEE 824. Advanced Pharmacy Practice Experience IV. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

**RXEE 825. Advanced Pharmacy Practice Experience V. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

**RXEE 826. Advanced Pharmacy Practice Experience VI. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

**RXEE 827. Advanced Pharmacy Practice Experience VII. 6 Units.**
Supervised clinical pharmacy practice experience that provides advanced pharmaceutical care skills and opportunities in a specific area of pharmacy practice.

Normal time to complete the program

4 years (12 academic quarters) — full-time enrollment required

Pharmacy Practice/Experiential Education Courses

**RXPC 561. Pharmaceutical Care I. 4 Units.**
The first in a sequence of three courses that uses early practice experiences to expose students to career opportunities and issues currently shaping the profession. Introduces foundational concepts and attitudes—balanced with real-world observation—necessary to understand the practice of pharmaceutical care, the essence of being a professional, and the challenges of applying these ideals. Designed to instill a sense of professionalism, promote positive practice philosophies, develop relationships with practitioners, evaluate potential career paths, and foster appreciation for the lifelong-learning nature of pharmacy. Substantial organized, early practice experiences reinforce knowledge and skills taught in didactic course work and encourage reflection. Oral and written communication practice through presentations and class discussions. Students required to learn the top 200 drugs by brand and generic names, therapeutic and drug classifications, and manufacturer.

**RXPC 571. Pharmacist Guided Self-Care I. 3 Units.**
Familiarizes the student with nonprescription health care products. Emphasizes patient assessment, indicated medical conditions, pharmacology, product selection, self-administration techniques, and patient counseling/follow-up. Lecture/discussion to simulate patient encounters.

**RXPC 572. Pharmacist Guided Self-Care II. 3 Units.**
Continues RXPC 571.

**RXPC 760. Clinical Pharmacokinetics. 2 Units.**
Focuses on initiating and adjusting individualized drug dosages for selected medications based on patient demographics, organ function, concomitant medications, disease states, and measured drug-plasma levels. Addresses altered drug disposition in special patient populations, i.e., pediatrics, geriatrics, and the obese. Challenges students to critically apply mathematical modeling and clinical pharmacotherapy knowledge at higher levels of sophistication. Students apply knowledge acquired in classroom to longitudinal case study while following patients in the pharmaceutical care laboratory. Prerequisite: P3 standing.
Pharmaceutical Sciences Courses

RXPC 761. Pharmacy Practice I. 2 Units.
The first of three quarters of laboratory course work that familiarizes students with and educates them about major issues in contemporary pharmacy practice. Teaches the important roles of the pharmacist in drug-therapy management— including evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management. Stresses the application of appropriate communication and computer skills in conjunction with these activities. Emphasizes the role of the pharmacist as a health educator. Student gains experience in other practical situations—such as drug-administration techniques, devices, and compounding techniques.

RXPC 762. Pharmacy Practice II. 2 Units.
The second of three quarters of laboratory course work that familiarizes students with and educates them about major issues in contemporary pharmacy practice. Teaches the important roles of the pharmacist in drug-therapy management—including evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management. Stresses the application of appropriate communication and computer skills in conjunction with these activities. Emphasizes the role of the pharmacist as a health educator. Student gains experience in other practical situations—such as drug-administration techniques, devices, and compounding techniques.

RXPC 763. Pharmacy Practice III. 2 Units.
The third of three quarters of laboratory course work that familiarizes students with and educates them about major issues in contemporary pharmacy practice. Teaches the important roles of the pharmacist in drug-therapy management—including evaluating patient medication profiles, monitoring patient outcomes, patient counseling, and disease-state management. Stresses application of appropriate communication and computer skills in conjunction with these activities. Student gains experience in other practical situations—such as drug-administration techniques, devices, and compounding techniques.

RXPS 511. Pharmaceutics I. 2 Units.
The first in a series of three courses that presents the physicochemical and biological factors affecting the stability, kinetics, bioavailability, and bioequivalence of drugs in dosage forms. Applies this knowledge to dosage form design, formulation, and drug-delivery systems. Focuses on the theory, technology, formulation, evaluation, and dispensing of solid, semisolid, and liquid dosage forms. Laboratory sessions involve students in the preparation and evaluation of dosage forms.

RXPS 512. Pharmaceutics II. 4 Units.
Surveys conventional dosage forms— including oral, topical, and parenteral medications— with emphasis on formulation, preparation, and effectiveness. Continues RXPS 511.

RXPS 513. Pharmaceutics III. 3 Units.
Studies the mathematical, physicochemical, and biological principles concerned with the formulation, preparation, and effectiveness of pharmaceutical dosage forms. Continues RXPS 512. Prerequisite: RXPS 512.

RXPS 515. Pharmaceutics Laboratory I. 0.5 Units.
Laboratory designed for the student to apply pharmaceutical principles and to develop proficiency when compounding selected formulations and employing aseptic techniques. Prerequisite: RXPS 511. Corequisite: RXPS 512.

RXPS 516. Pharmaceutics Laboratory II. 0.5 Units.
Continues RXPS 515.

RXPS 524. Physiology I. 4 Units.
The first in a sequence of three courses. Covers the nervous, endocrine, and urinary systems. Focuses on physiological processes required for maintenance of whole-body homeostasis. Presentation of anatomical relationships and structures serves to support the physiological topics discussed. Emphasizes targets for pharmaceutical intervention and the relationship between biochemical processes and drug metabolism and action.

RXPS 525. Physiology II. 3 Units.
The second in a sequence of three courses. Covers the gastrointestinal, cardiovascular, and respiratory systems. Focuses on the physiological processes required for maintenance of whole-body homeostasis. Presentation of anatomical relationships and structures serves to support the physiological topics discussed. Emphasizes targets for pharmaceutical intervention and the relationship between biochemical processes and drug metabolism and action.

RXPS 581. Biochemistry I. 3 Units.
The first in a two-part series that addresses the structure-function relationships of major biomolecules; enzymes in biochemistry; human energy metabolism; and major pathways for human protein, carbohydrate, and lipid metabolism. Discusses important organic functional groups, nomenclature and physical properties, characteristic reactions, stereochemistry, and acid-base properties that are important considerations for drug action. Emphasizes principles of biochemistry as they relate to pH and buffers; hemostasis; enzyme functions; regulation of intermediary metabolism; chemical signaling; and interconversions in the living system, including the role of vitamins, hormones, and enzyme inhibitors. Discusses biotechnological advances, when appropriate.

RXPS 582. Biochemistry II. 3 Units.
The second in a two-part series that addresses the structure-function relationships of major biomolecules; enzymes in biochemistry; human energy metabolism; and major pathways for human protein, carbohydrate, and lipid metabolism. Discusses important organic functional groups, nomenclature and physical properties, characteristic reactions, stereochemistry, and acid-base properties that are important considerations for drug action. Emphasizes principles of biochemistry as they relate to pH and buffers; hemostasis; enzyme functions; regulation of intermediary metabolism; chemical signaling; and interconversions in the living system, including the role of vitamins, hormones, and enzyme inhibitors. Discusses biotechnological advances, when appropriate.

RXPS 510. Pharmacokinetics. 4 Units.
Teaches the basic principles of absorption, distribution, metabolism, and elimination of drugs from the body. Focuses on physical, physiological, and biochemical factors that impact these processes. Includes clinical pharmacokinetics principles and practical examples in the recitation periods. Prerequisite: Successful completion of all P1-level courses and P2; Autumn Quarter standing.

RXPS 616. Neuropsychopharmacology. 3 Units.
Introduces the fundamentals of neuropsychopharmacology, including the functional organization of the brain and the physiology and biochemistry of major neurotransmitters. Studies how drugs—including medications for neurologic and psychiatric disorders, as well as drugs of abuse— affect the brain and alter behavior. Discusses some of the most common brain disorders—such as schizophrenia, depression, Parkinson’s disease, and drug addiction—with a focus on the mechanisms of action of drugs used for treatment of these disorders.
RXPS 617. Natural Products in Current Therapeutics. 2 Units.
A journal club-style course in which students lead the discussion and dialogue. Explores cases of natural product-derived therapeutics from the history of discovery, synthesis, and biological activity to drug development and marketing. Students perform literature searches, read and summarize journal articles, present summaries of multiple articles on a similar topic, and prepare topical presentations for the class.

RXPS 619. Nutrition and Culinary Arts. 2 Units.
Enhances the pharmacist's current understanding of patient care while developing new skills in basic nutrition and the culinary arts. Lecture and hands-on culinary experimentation in the School of Allied Health Profession's (SAHP) teaching kitchen, where students follow recipes and create simple and healthy meals weekly. Students define, discuss, and understand concepts such as disease reversal, lifestyle-change programs, lifestyle medicine, culinary medicine, culinary prescription, and the whole-food plant-based diets. Chronic disease states classified, research on disease reversal discussed, and strategies to improve community health examined. Students learn to distinguish and apply the importance of label reading, to integrate appropriate portion sizes, to compare and contrast nutrients in specified recipes, and to prepare healthy meals on a student budget.

RXPS 630. Biochemical Aspects of the Obesity and Metabolic Syndrome. 2 Units.
Explores biochemical factors related to the obesity epidemic in the United States. Emphasizes the impact of these biochemical factors on currently available pharmacotherapeutic options, as well as the development of new therapies. Focuses particularly on the role of pharmacist-guided lifestyle interventions on the treatment of obesity and metabolic syndrome. Coordinator-moderated seminar/discussion format in which students present in-depth analysis and interpretation of papers from the current scientific literature.

RXPS 651. Principles of Medicinal Chemistry I. 3 Units.
The first in a three-course sequence that focuses on the chemistry of drug entities. Effects of a drug’s chemistry on its various properties, such as pharmacology, toxicology, absorption, distribution, metabolism, excretion, mechanism of action, drug-drug interactions, dosage form formulation(s), stability, cost, and use.

RXPS 652. Principles of Medicinal Chemistry II. 4 Units.
The second in a three-course sequence that focuses on the chemistry of drug entities. Effects of a drug’s chemistry on its various properties, such as pharmacology, toxicology, absorption, distribution, metabolism, excretion, mechanism of action, drug-drug interactions, dosage form formulation(s), stability, cost, and use. Prerequisite: RXPS 651.

RXPS 653. Principles of Medicinal Chemistry III. 3 Units.
The third in a three-course sequence that focuses on the chemistry of drug entities. Effects of a drug’s chemistry on its various properties, such as pharmacology, toxicology, absorption, distribution, metabolism, excretion, mechanism of action, drug-drug interactions, dosage form formulation(s), stability, cost, and use. Prerequisite: RXPS 652.

RXPS 710. Dietary Supplements. 2 Units.
Introduces the use of herbas and other supplements in patient health. Topics include key regulatory and practical concerns; resources for supplement information; and evidence-based use and adverse effects of commonly used supplements for CNS, digestive, reproductive, immune, fitness, and other conditions.

RXPS 719. Nutrition and Metabolic Syndrome. 2 Units.
Introduces the role of nutrition, including dietary supplements, in patient health. Topics include the basics of nutrition and nutritional adequacy; vegetarian diets, including the Adventist Health Study; and nutritional considerations related to metabolic syndrome.

RXPS 730. Current Topics in Medicinal Chemistry and Drug Design. 1 Unit.
Focuses on discovery and design of new drugs for new therapeutic targets, and on development of new approaches for treatment of diseases.

RXPS 782. Special Topics in Pharmaceutical Sciences. 1-4 Units.
Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

RXPS 783. Special Topics in Pharmaceutical Sciences. 1-4 Units.
Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

RXPS 784. Special Topics in Pharmaceutical Sciences. 1-4 Units.
Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

Pharmacy Conjoint Courses

RXRX 501. School of Pharmacy Forum. 0 Units.
Offered each quarter throughout the four-year program. Weekly meetings to provide opportunity for presentations and discussions on current topics affecting pharmacy, health care, and students’ career paths. Serves as a forum for students to network and be informed of activities and developments within the School of Pharmacy and Loma Linda University. Exposes students to leaders within the profession, reputable practitioners from various settings, top researchers, and other renowned individuals who discuss important issues, career opportunities, latest research results, and the practice of pharmacy.

RXRX 506. Introduction to Pharmacy Leadership. 1 Unit.
Offers academic credit for activities related to leadership development associated with the California Pharmacy Student Leadership Program. Strengthens leadership behavior. Students invited to take part in this program must register for this course and complete it as a condition of their participation. May be repeated once for a maximum of 2 units. Prerequisite: Permission of the Office of Student Affairs; PY-1 Spring Quarter professional year standing.

RXRX 507. Professional Development. 1 Unit.
A nine-sequence course that occurs each quarter during the PY1 through PY3 years. Emphasizes professional knowledge, skills, abilities, behaviors, and attitudes required to produce a competent, practice-ready professional; and to develop a successful career in pharmacy.

RXRX 601. School of Pharmacy Forum. 0 Units.
Weekly meetings provide opportunity for presentations and discussions on topics currently affecting pharmacy, health care, and students’ career paths. Serves as a forum for students to network and be informed of activities and developments within the School of Pharmacy and Loma Linda University. Exposes students to leaders within the profession, reputable practitioners from various settings, top researchers, and other renowned individuals who will discuss important issues, career opportunities, latest research results, and the practice of pharmacy. Offered each quarter throughout the four-year program. Prerequisite: P2; AQ standing.
RXRX 604. Professional Development. 1 Unit.
A nine-sequence course that occurs each quarter during the PY1 through PY3 years. Emphasizes professional knowledge, skills, abilities, behaviors, and attitudes required to produce a competent, practice-ready professional; and to develop a successful career in pharmacy.

RXRX 701. School of Pharmacy Forum. 0 Units.
Required weekly meetings provide opportunity for presentations and discussions on current topics affecting pharmacy, health care, and students’ career paths. Serves as a forum for students to network and be informed of activities and developments within the School of Pharmacy and Loma Linda University. Exposes students to leaders within the profession, reputable practitioners from various settings, top researchers, and other renowned individuals who will discuss important issues, career opportunities, latest research results, and the practice of pharmacy. Repeated through the third professional year. Offered each quarter throughout the four-year program.

RXRX 704. Professional Development. 1 Unit.
A nine-sequence course that occurs each quarter during the PY1 through PY3 years. Emphasizes professional knowledge, skills, abilities, behaviors, and attitudes required to produce a competent, practice-ready professional; and to develop a successful career in pharmacy.

RXRX 798. Independent Study with Faculty. 1-4 Units.
Individual student research or project directly mentored by a faculty member. Must include a half-page description of the research or project and associated budget (if any), and must specify the means of assessment of the student’s achievement of the research or project requirements. Requires approval of the respective department chair and the student’s faculty advisor. May be repeated to a total of 4 units toward the 9-unit elective requirement. Prerequisite: P2 standing and approval of the project by the respective department chair and the student’s faculty advisor.

Pharmacy Practice/Drug Information Courses
RXDI 664. Drug Information and Literature Evaluation. 3 Units.
Introduces drug information resources. Trains students to retrieve and critically evaluate literature related to providing pharmaceutical care to patients. Introduces multiple forms of drug literature, including primary, secondary, tertiary, and Internet resources. Trains students to document drug information requests and report adverse drug reactions. Discusses issues related to herbal medicine and alternative therapeutic options. Using knowledge obtained through classroom course assignments, students examine published information to answer common drug information questions.

Pharmacy Practice/Therapeutics Courses
RXTH 570. IPDM I: Introduction to Disease Management. 2.5 Units.
Introduces students to medical terminology, physical examination, interpretation of major diagnostic tests/laboratory results, and important patient safety considerations. Familiarizes students with various disease states—such as benign prostatic hyperplasia, urinary incontinence, glaucoma, gout, osteoarthritis, and rheumatoid arthritis. Prepares students to assess patients and determine the appropriate nonpharmacologic and pharmacologic treatment options for specific conditions.

RXTH 603. Interprofessional Dental Clinic. 2 Units.
Provides opportunity for pharmacy and dentistry students to work and learn together in the setting of an urgent care dental facility. Students interview patients and collect data (chief complaint, medical history, medication history, etc.) pertinent to the patients’ dental care. Emphasizes the collaboration of different professions to deliver health care and improve the health of patients. Develops communication skills between health care providers.

RXTH 604. Medical Missions. 3 Units.
Prepares students to participate in an organized, interprofessional, cross-cultural medical mission trip, health-care experience, or international health program. Includes hands-on, experiential learning that enhances competence in physical assessment. Reviews major chronic diseases encountered in select medical mission destinations, including the appropriate role for student pharmacists in diagnosis and treatment.

RXTH 606. Antimicrobial Stewardship. 1 Unit.
Develops an understanding of the role of the pharmacist in antimicrobials stewardship programs (ASP), as well as the process of ASP. Includes hospital practice and administrative duties associated with ASP.

RXTH 609. Advanced Literature Evaluation. 1 Unit.
Provides an opportunity for students to critically evaluate journal articles in a systematic format. Introduces students to the journal club format of presenting literature and learning how to assess the merit of studies with respect to design, statistical methods, and potential applications.

RXTH 610. Introduction to Pharmacy Informatics. 1 Unit.
Provides a foundation for understanding health information technology (HIT) and pharmacy informatics. Presents the HIT and specific informatics language that make up the infrastructure for real-world information management and health information exchange.

RXTH 611. Introduction to Nuclear Pharmacy. 2 Units.
Provides a brief introduction to the principles behind radiopharmaceutical application and use, and introduces various types of diagnostic and therapeutic agents that patients will experience as part of routine medical care. Students evaluate radiopharmaceuticals in depth to learn about their indications, dosages, side effects, drug interactions, and potential for pharmacist intervention. Introduces students to basic scientific principles, practice guidelines, and regulatory requirements applicable to radiopharmaceuticals and nuclear pharmacy. Discusses the diagnostic and therapeutic utility of radiopharmaceuticals. Incorporates several active learning strategies—such as case studies, group discussions, primary literature evaluation, and writing assignments—to enhance student learning.

RXTH 614. Parenteral and Enteral Nutrition. 1.5 Unit.
Provides a comprehensive review of malnutrition in critically ill patients, and discusses the treatment approach based on patient’s medical and nutritional status and requirements. Introduces students to therapy-related complications and discusses how to prevent and manage them.

RXTH 671. IPDM II: Fluids and Electrolytes. 2 Units.
As part of a twelve-course integrated pharmacology and disease-state management sequence, covers the pathophysiology and management of conditions related to fluid, electrolyte, anemia, acid-base, and nutritional disorders. Discusses pharmacotherapy, dietary requirements, and sources of electrolytes. Prepares the student to manage these disorders, establish and employ rational treatment, and provide parameters to monitor progress of recommended therapies.
RXTH 674. IPDM VI: Renal and Respiratory Diseases. 3.5 Units.
Part of a twelve-course sequence. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical trial evidence as related to renal and respiratory diseases. Enables students to integrate their knowledge of these disciplines to manage renal and respiratory diseases by establishing and employing rational treatment and providing parameters to monitor progress of the regimen.

RXTH 683. IPDM IV: Endocrine. 3.5 Units.
Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient. Prerequisite: completion of all P1 and Autumn Quarter P2 courses.

RXTH 684. IPDM III: Cardiovascular I. 3.5 Units.
Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of cardiovascular agents; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with common cardiovascular disorders. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes anatomy, physiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to cardiology. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient. Prerequisite: P2, Spring Quarter standing.

RXTH 685. IPDM V: Cardiovascular II. 3.5 Units.
Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

RXTH 701. Pediatrics. 3 Units.
Introduces the core concepts involved in the care of pediatric patients and expands students' therapeutic knowledge regarding common pediatric and geriatric disease states. Prepares students for clinical rotations and inpatient pharmacy practice.

RXTH 704. IPDM XIII: Special Populations. 3 Units.
Introduces students to the core concepts involved in the care of pediatric and geriatric patients, and expands their therapeutic knowledge regarding common pediatric and geriatric disease states. Broadens students' knowledge base of pharmacology, pharmacokinetics, and pharmacodynamics of drugs used in pediatric and geriatric populations. Includes anatomy, physiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical trial evidence as they relate to the care of pediatric and geriatric populations. Helps students integrate knowledge, attitudes, and skills in a variety of ways to accomplish the course outcomes and formulate individualized treatment plans for pediatric and geriatric patients.

RXTH 757. Advanced Cardiovascular Life Support. 3 Units.
Focuses on the development of skills necessary for the management of patients with acute cardiovascular emergencies.

RXTH 770. IPDM VII: Infectious Diseases I. 3.5 Units.
Part of an eleven-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of anti-infectives; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with neurological diseases. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes anatomy, physiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to anti-infectives. Enables students to integrate their knowledge of the disciplines in the context of formulating individualized pharmacotherapeutic plans. Prerequisite: P3, Autumn Quarter standing.

RXTH 771. IPDM X: Neurology. 3.5 Units.
Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.

RXTH 772. IPDM IX: Infectious Diseases II. 3.5 Units.
Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of endocrine and GI dysfunction; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with endocrine and GI dysfunctions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to endocrine and GI drugs. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient.
RXTH 773. IPDM VIII: Psychiatry. 3.5 Units.
Part of an eleven-course sequence. Introduces students to the pharmacology, pharmacokinetics, and pharmacodynamics of agents used in the treatment of psychiatric disease and addictions; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with these conditions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish the course outcomes. Presents pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy and clinical trial evidence as they relate to the drugs used for these miscellaneous conditions. Enables students to integrate their knowledge of the disciplines in the context of formulating an individualized pharmacotherapeutic plan for a given patient. Prerequisite: P3, Autumn Quarter standing.

RXTH 774. IPDM XII: Miscellaneous Conditions and GI Disorders. 2.5 Units.
Part of a twelve-course sequence. Introduces students to the pharmacology, pharmacokinetics and pharmacodynamics of agents used in the treatment of gastrointestinal disorders and various other conditions—including but not limited to arthritis, gout, glaucoma, dermal conditions, incontinence, SLE, MS, and BPH; as well as management (evaluation, treatment, monitoring, and follow-up) of patients with these conditions. Students integrate knowledge, attitudes, and skills in a variety of ways to accomplish the course outcomes. Includes pathophysiology, pharmacology, pharmacokinetics, pharmacotherapy, and clinical-trial evidence as they relate to the drugs used for the conditions indicated. Enables students to integrate their knowledge of the disciplines studied in the context of formulating an individualized pharmacotherapeutic plan for a given patient. Prerequisite: P3 Spring Quarter standing.

RXTH 775. IPDM XI: Oncology. 2.5 Units.
As part of the twelve-course integrated pharmacology and disease-state management sequence, introduces student pharmacists to the pathophysiology, pharmacology, and therapeutic management of the common hematologic malignancies and solid tumors. Helps students understand the management of adverse side effects due to chemotherapy, as well as transplant. Provides an avenue for student pharmacists to practice critical thinking skills and clinical decision making using interactive, case-based lecturing and recitation cases.

RXTH 782. Special Topics in Pharmacy Practice. 1-4 Units.
Lecture and discussion on a current topic in pharmacy practice. May be repeated for a maximum of 6 units.

RXTH 783. Special Topics in Pharmacy Practice. 1-4 Units.
Lecture and discussion on a current topic in pharmacy practice. May be repeated for a maximum of 6 units.

RXTH 784. Special Topics in Pharmacy Practice. 1-4 Units.
Lecture and discussion on a current topic in pharmacy practice. May be repeated for a maximum of 6 units.

Pharmacy/Social and Administrative Sciences Courses

RXSA 545. Public Health and Lifestyles. 3 Units.
Introduces the first-year pharmacy student to fundamental principles of public health and public health practice, as well as to how pharmacy practice interfaces with public health delivery in a variety of settings. Student identifies and evaluates public health education and health promotion programs, as well as identifies where the pharmacist plays a significant role in ensuring the conditions under which all peoples can be healthy. Introduces the student to the fundamentals of public health principles and practice, while examining how the pharmacist is an integral player to public health-systems delivery and practice.

RXSA 547. Pharmacy Law. 2 Units.
Introduces students to the most relevant federal and state laws and regulations that define legal and ethical pharmacy practice. Provides students with the tools necessary to practice pharmacy consistent with these standards. Includes lectures, discussions, small-group problem solving, assignments, and examinations.

RXSA 600. Philippines Medical Mission Preparation. 1 Unit.
Emphasizes preparation activities designed to orient student team members to the cultural, professional, and clinical experiences that may be encountered in the Philippines. Includes a survey of the geographical, cultural, and epidemiological history of the Batangas people, as well as a review and preparation of medications that will be dispensed during the mission. Prepares student pharmacists to describe the pharmacist’s scope of practice in the medical mission, as well as provide competent pharmacy care to the local population. Develops and implements mission responsibilities, tasks, and itineraries.

RXSA 618. Writing for Publication. 3 Units.
Students seeking residency and positions in academic pharmacy will be required to write extensively and must possess the skills necessary to write an article worthy of publication in an academic or scholarly journal. This course is designed to teach students how to write effectively for the purpose of publication. Specific topics covered will include pre-writing exercises, basic components of articles, journal style sheets, bibliographies, citing works within a text, and writing conventions (mechanics, usage, sentence formation). Dual degree (PharmD/Bioethics) students will find this course especially useful.

RXSA 640. Epidemiology and Biostatistics. 3 Units.
Introduces epidemiology, basic statistical concepts, analytical methods, and medical literature-evaluation techniques. Exposes students to biostatistical concepts through clinical application of statistics, using SPSS7 or other currently available statistical packages. Prerequisite: Successful completion of all P1-level courses; P2; Autumn Quarter standing.

RXSA 646. Principles of Management. 3 Units.
Introduces pharmacy students to the five core managerial sciences, i.e., human resource management, operations management, marketing, accounting, and finance. Particularly emphasizes human resource management and operations management skills. Lectures incorporate real-life management cases for discussion, followed by lecture on the principles of management topics.

RXSA 743. Health Systems, Reimbursement, and Pharmacoeconomics. 3 Units.
Presents fundamental concepts of health outcomes research and pharmacoeconomic analysis, and provides a basic framework to optimize health care resource allocation. Discusses principles of measuring and analyzing costs and outcomes and techniques used to evaluate them across drug treatments. Includes various interactive group assignments to illustrate the methodologies discussed in lecture. Reviews current practice guidelines for pharmacoeconomic evaluation and describes real world contexts in which pharmacoeconomic research is conducted. Reviews the structure of the American health system and the role that pharmacists play in it. Presents and evaluates basic concepts of drug reimbursement and clinical pharmacy reimbursement for different pharmacy practice settings.
RXSA 748. Advanced Topics in Pharmacy Law. 1 Unit.
Exposes the student to current issues in pharmacy law and regulation
both at the federal and state levels. Introduces pending legislation at
both the state and federal levels. Assigned legal articles and pending
legislation read and presented during class allow the student to become
familiar not only with the issue(s) being presented, but also to analyze
and present the issues’ impact on the practice of pharmacy in general
and on the student’s personal practice of pharmacy.

RXSA 750. Wall Street Journal. 1 Unit.
Students read selected Wall Street Journal health-related articles and
discuss the events that have resulted in news coverage each week in the
areas of pharmaceutical/biotechnology, providers/insurance, research,
policy, and medical products.

RXSA 751. Social-Behavioral Aspects of Pharmacy Practice. 3 Units.
Focuses on models and theories of behavior change, with particular
emphasis on primary models of behavior change relative to public
health, health education, preventive health, health promotion, and
pharmacological practice. Combining pharmacological and public health
practice, student gains a broad understanding of the various health-
behavior models and theories that can be applied to assessing a patient’s
level of behavior change and meeting his/her needs. Students use
knowledge to meet the individual needs of the patient.

RXSA 757. Clinical Research and Methodology (CRM). 2 Units.
Builds on the principles of biostatistics and drug information to develop
the skills necessary for a practitioner to design and develop a clinical
research study worthy of scholarly publication and presentation. Highly
recommended for students who wish to pursue a career in managed care,
pharmacy practice in an academic setting, or as a clinical coordinator in
hospital settings. Offered Spring Quarter of PY3. Prerequisite: Completion
of RXDI 664 and RXSA 640 with a grade of B- or better.