SCHOOL OF PHARMACY

Vision

The School of Pharmacy Vision is to reduce healthcare disparities and render healthcare to the underprivileged and underserved.

Mission

The School of Pharmacy Mission is to inspire strong Christian values; practice evidence-based, patient-centered care; and foster a community of research and scholarship, so as to meet the healthcare needs of diverse patient populations.

The AUHS School of Pharmacy embraces the educational philosophy of the University, which is dedicated to prepare a professional and culturally diverse workforce for the pharmaceutical, nursing and research sectors of healthcare- a workforce who will utilize research and evidence based practice to guide healthcare delivery, understand the application of research, display high level competencies to health care delivery and value the continuation of learning.

Doctor of Pharmacy

The Doctor of Pharmacy (PharmD) degree program at the American University of Health Sciences (AUHS) is a 3-year, intensive course of study designed to prepare students for a dynamic career in pharmacy. This program provides a strong educational foundation in pharmaceutical sciences and clinical practice, fostering an environment where evidence-based practices and research are integral to the learning process.

At AUHS, the PharmD program emphasizes the inclusion of diverse perspectives, with a commitment to minority inclusion and cultural diversity. Students are encouraged to engage in outreach activities that promote public health and wellness in underserved communities. Additionally, the program supports the development of future scientists and educators, offering opportunities for students to participate in research and academic advancement.

Grounded in a holistic approach, the PharmD program integrates faith-based principles, encouraging students to pursue their professional goals while fostering a belief in God and a dedication to serving others. Graduates of the program will be well-equipped to succeed as pharmacists, leaders, and advocates for health equity in their communities.

Program Overview

The Doctor of Pharmacy (PharmD) degree program is a 3-year course of study that will provide an educational foundation for a career in pharmacy and create a setting in which evidence-based practices and research, minority inclusion as well as outreach to the community, cultural diversity, public health and wellness, development of future scientists and faculty, and a belief in God can be pursued and developed.

Admissions

1. Education Requirement. AUHS School of Pharmacy requires successful completion of pre-requisites coursework. A bachelor's degree is recommended.
2. Grade Point Average (GPA) Requirement. A cumulative GPA of 2.5 is required. Applicants are required to have completed the following prerequisites with a grade of "C" (GPA of 2.0) or higher.

Prerequisite Education Requirement

Prerequisite Courses to Be Completed Prior to Matriculation into PharmD Program:

Prerequisite Courses	Quarter Credit Units	Semester Units

General Inorganic Chemistry with Laboratory	12	8
Organic Chemistry with Laboratory	12	8
General Biology with Laboratory	12	8
Microbiology with Laboratory	4	3
Human Anatomy* with Laboratory	4	3
Human Physiology* with Laboratory	4	3
Calculus	4	3
Principles of Economics (Macro and Micro)	4	3
Statistics	4	3
Psychology/Sociology	4	3
Public Speaking	4	3
English Composition	4	3
Other Humanities and Social/behavioral Science	8	6
TOTAL	**80**	**57**

***NOTE**: *If combined Anatomy & Physiology course, must be a minimum of 5 semester units.*

3. Test of English as a Foreign Language (TOEFL) – International applicants whose native language is not English will be required to have a Test of English as a Foreign Language (TOEFL) composite Score of 100 (iBT) or 250 (CBT) unless they earned a baccalaureate degree from an appropriately accredited college / university in the United States or other countries in which the native language is English.
4. Background/Drug Testing AUHS School of Pharmacy requires a background check and drug testing for admission. Criminal background checks and/or drug testing are also required for placement at clinical facilities/pharmacy practice sites. In addition, the California Board of Pharmacy requires all admitted students to be fingerprinted for criminal background checks and for California licensure. Students must hold a valid license from the Board of Pharmacy to participate in the clinical portions of the PharmD program.
5. Pharmacy College Admission Test (PCAT) – not required but recommended.
6. Pharmacy Experience – not required although pharmacy experience (volunteer or work) is strongly recommended.
7. Submission of ALL application materials by the application deadline including:
    a. PharmCAS complete application
    b. Three completed recommendation forms, one from an instructor, one from a health care provider and the 3rd from either of the above or from an employer. Recommendation letters from friends and family members are not accepted
    c. Personal Statement The personal statement reveals your thoughts about your strengths as a person as well as areas of personal development you believe you need to improve. The essays communicate your motivation, goals, circumstances, and experiences related to a pharmacy career.

Requirement for Licensing in the Program Career Field: There are numerous eligibility requirements for licensure depending on the student's field of study. Regulations vary from state to state, and students are encouraged to carefully read the requirements and conduct further research. Pharmacy career field - https://www.pharmacy.ca.gov/

State and National Board Examinations/Licensure Requirements

Licensure as an Intern

Students enrolled in School must have a valid, current California Pharmacy Intern License. Incoming students are required to apply for a Pharmacy Intern License during the Fall semester of the PY1. Students will be provided with intern application packets during the pre-IPPE co-curricular course and given instructions on its completion. Live Scan Fingerprinting will be completed during this process.

Completed applications are submitted to the Office of Experiential Education. After processing, the Office of Experiential Education will submit the applications for the entire class to the Board of Pharmacy. Once the applications are received and processed, the Board of Pharmacy mails the Intern License to the

student. A copy of the Intern License should be provided to the Office of Experiential Education and the Office of Student Affairs where it will be added to the student's permanent file. https://www.pharmacy.ca.gov/applicants/intern.shtml

Students cannot participate in the IPPE or APPE program without a current California Pharmacy Intern License. In addition, student pharmacists are not allowed to actively immunize unless they are Registered Pharmacist Interns in the state of California. All students must always carry their pocket licenses with them when visiting experiential practice sites.

Visiting Board of Pharmacy Inspectors may ask to examine professional licenses when making site visits; this may also include the licenses of interns participating in experiential education at the site. Preceptors may also ask students to provide a copy of their intern license during your site orientation. All students must disclose information regarding Board of Pharmacy - Board Actions to the Office of Experiential Education within 15 days of receipt of any notice of action against their license from the Board of Pharmacy.

Licensure as A Pharmacist

To become licensed to practice pharmacy in California, you must meet the Registered Pharmacist requirements of the California Board of Pharmacy. These requirements can be found on the state board of pharmacy website at: https://www.pharmacy.ca.gov/index.shtml

California Board of Pharmacy

The California State Board of Pharmacy (CSBP) is a consumer protection agency. One way the board fulfills its consumer protection mandate is to assure that those licensed to practice pharmacy possess minimum competency. To this end, California law requires candidates to take the NAPLEX™ and California Practice Standards and Jurisprudence Examination (CPJE). You can obtain a copy of this code and other California pharmacy laws from the board's Web site. These examinations require candidates to demonstrate that they possess the minimum knowledge and abilities necessary to perform safely and effectively in independent pharmacy practice in the U.S. as well as in California. For more information, Gotō https://www.pharmacy.ca.gov/index.shtml.

North American Pharmacist Licensure Examination (NAPLEX)

The NAPLEX™ (North American Pharmacist Licensure Examination) is developed by the National Association of Boards of Pharmacy (NABP) for use by the state boards of pharmacy as Requirements for pharmacist licensure in California are listed in California Business and Professions Code section 4200(a) (1-6) 40 part of their assessment of competence to practice pharmacy. This computer-adaptive test provides the most precise measurement of the student's knowledge and ability in pharmacy. By using the NAPLEX™, the state boards provide a valid and objective examination that tests the competence in important aspects of the practice of pharmacy. The NAPLEX™ also assists the state boards of pharmacy in fulfilling one aspect of their responsibilities to safeguard the public health and welfare.

For more information, go to https://nabp.pharmacy/. California Practice Standards and Jurisprudence Examination (CPJE)

The California State Board of Pharmacy, through its Competency Committee, develops the CPJE. The board's CPJE is comprised of 90 multiple-choice questions, administered by computers at designated test centers throughout the country. California law (California Business and Professions Code section 4200.2) requires that the CPJE include items that demonstrate proficiency in patient communication skills, aspects of pharmacy practice, and the application of clinical knowledge that is not measured by NAPLEX and California law.

For more information, go to: https://pharmacy.ca.gov/applicants/. Multistate Pharmacy Jurisprudence Examination (MPJE)

The computer-based Multistate Pharmacy Jurisprudence Examination® (MPJE) combines federal and state-specific law questions to serve as the state law examination in participating jurisdictions. The MPJE

is based on a national blueprint of pharmacy jurisprudence competencies; however, the questions are tailored to the specific law in each state.

For more information, go to https://nabp.pharmacy/programs/examinations/mpje/

Program Learning Outcomes (PLOs)

Education outcomes are based on Center for the Advancement of Pharmacy Education (CAPE) Educational Outcomes 2013.

1. Foundational Knowledge

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

2. Essentials for Practice and Care

    2.1 Patient-centered care (Caregiver) - Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor, and adjust plans, and document activities).
    2.2 Medication use systems management (Manager) - Manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.
    2.3 Health and wellness (Promoter) - Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.
    2.4 Population-based care (Provider) - Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

3. Approach to Practice and Care

    3.1 Problem Solving (Problem Solver) - Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.
    3.2 Educator (Educator) - Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.
    3.3 Patient Advocacy (Advocate) - Assure that patients' best interests are represented.
    3.4 Interprofessional collaboration (Collaborator) - Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs.
    3.5 Cultural sensitivity (Includer) - Recognize social determinants of health to diminish disparities and inequities in access to quality care.
    3.6 Communication (Communicator) - Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization

4. Personal and Professional Development

    4.1 Self-awareness (Self-aware) - Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.
    4.2 Leadership (Leader) - Demonstrate responsibility for creating and achieving shared goals, regardless of position.
    4.3 Innovation and Entrepreneurship (Innovator) - Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

4.4 Professionalism (Professional) - Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

5. Christian Values

5.1 Christian Values (Humanitarian) - Affect positive patient outcomes by sharing the Christian values of love, caring, justice, and respect, as an advocate for patient needs and rights.

PHARMD PROGRAM INFORAMATION (CIP 51.2001; SOC 29-1051)

Program Length	Quarters	Quarter Credit Units	Clock Hours
36 Months	12 Quarters	183 Units	3380

THE FORMULA USED TO CALCULATE THE NUMBER OF QUARTER CREDIT UNITS:

Type	Credit Hours
Lecture	One Credit = 10 Lecture Hours
Laboratory	One Credit = 20 Laboratory Hours
Experiential	One Credit = 30 Practicum Hours

INSTRUCTIONAL CLOCK HOUR TO CREDIT CONVERSION

A “clock (contact) hour” includes a minimum instructional time of 50 minutes of supervised or directed instruction and appropriate break(s).

DOCTOR OF PHARMACY CORE COURSES

Course Number	Course Name	Quarter Credits Units
PS 717	Biochemistry	4.0
CS 718	Patient Care Process: Health and Drug Information	4.0
PS 719	Pharmaceutical Calculations	4.0
AS 736	Professional Communications	3.0
AS 723	Pharmacy and US Healthcare Systems	2.0
AS 716	Judeo-Christian Values in Patient Care-Old Testament I	1.0
PS 731	Immunology & Medical Microbiology	3.0
CS 713	Self-Care Pharmacotherapy & Alternative Therapy	4.0
PS 720	Pharmaceutics & Biopharmaceutics	4.0
CS 725	Patient Care Lab	1.0
PS 727	Medical Illustration I	2.0
AS 728	Psychosocial Aspect of Health Care	2.0
AS 726	Judeo-Christian Values in Patient Care-Old Testament II	1.0
PS 741	Pathophysiology	3.0
PS 743	Introduction to Medicinal Chemistry	3.0
CS 724	Pharmacy Practice: Medication Use Systems Management	3.0
PS 742	Introduction to Pharmacology & Toxicology	4.0
AS 729	Medical Illustration II	2.0
AS 730	Pharmacy Law & Ethics	3.0
AS 737	Judeo-Christian Ethics-Old Testament III	1.0
PS 738	Extemporaneous & Sterile Compounding with Lab	2.0
PS 733	Basic Pharmacokinetics	3.0
PS 721	Pharmacogenomics & Genetics	2.0
AS 745	Biostatistics & Research Design	3.0
EE 746	IPPE I – Community	2.0
CS 748	Practice Readiness I	2.0

AS 747	Judeo-Christian Leadership-Old Testament IV	1.0
PE 884	Elective I	2.0
CS 732	Health Informatics & Patient Safety	2.0
CS 857	Integrated Pharmacotherapy I: Fluids, Electrolyte & Nutrition	5.0
CS 858	Integrated Pharmacotherapy II: Cardiology	6.0
PE 913	Elective II	2.0
EE 855	IPPE II – Hospital	2.0
AS 856	Judeo-Christian Values in Patient Care-New Testament I	1.0
AS 864	Pharmacy Practice Management	2.0
AS 860	Epidemiology, Public Health & Policy	2.0
CS 859	Integrated Pharmacotherapy III: Pulmonology & Nephrology	5.0
CS 867	Integrated Pharmacotherapy IV: Gastroenterology & Endocrinology	5.0
EE 865	IPPE III – Ambulatory Care	2.0
AS 866	Judeo-Christian Values in Patient Care-New Testament II	1.0
CS 870	Integrated Pharmacotherapy V: Neurology & Psychiatry	5.0
CS 868	Integrated Pharmacotherapy VI: Infectious Disease I	4.0
CS 869	Integrated Pharmacotherapy IX: Dermatology & Rheumatology	2.0
PE 914	Elective III	2.0
EE 874	IPPE IV - Transitions of Care	2.0
AS 875	Judeo-Christian Ethics-New Testament III	1.0
AS 912	Pharmacoeconomics	2.0
CS 876	Integrated Pharmacotherapy VI: Infectious Disease II	4.0
CS 877	Integrated Pharmacotherapy VII: Oncology	6.0
CS 878	Integrated Pharmacotherapy VIII: Urology & Reproductive System	3.0
AS 885	Judeo-Christian Leadership-New Testament IV	1.0
CS 886	Practice Readiness II	4.0
EE 921	APPE I – Acute Care/ General Medicine	6.0
EE 922	APPE II – Health Systems/ Institution	6.0
EE 931	APPE III – Ambulatory Care	6.0
EE 932	APPE IV – Advanced Community	6.0
EE 941	APPE V – Elective I	6.0
EE 942	APPE VI – Elective II	6.0
CS 943	Practice Readiness III	5.0
	TOTAL	**183**

DOCTOR OF PHARMACY COURSE DESCRIPTIONS

Clinical and Administrative Sciences

AS 716 Judeo-Christian Values in Patient Care-Old Testament I (1 Credit)

This course introduces Biblical principles with a spiritual basis and practical approach to contemporary patient care settings. This course also instills the teaching of various Christian values such as love, caring, justice, respect, and compassion, in providing direct patient care through the study of various Biblical concepts. *Prerequisite: None.

AS 723 Pharmacy and US Healthcare Systems (2 Credits)

This course will introduce students to the historical evolution of pharmacy practice in the United States, services within various medication use systems, and the basic principles of patient care in different pharmacy practice settings including community and hospital. The course will also introduce roles of the pharmacists in public health, medication-patient safety, and medication therapy management. In addition, organizational and economic aspects of healthcare delivery will be discussed. *Prerequisite: None.

AS 726 Judeo-Christian Values in Patient Care-Old Testament II (1 Credit)

This course continues to introduce Biblical principles with a spiritual basis and practical approach to contemporary patient care settings. This course also instills the teaching of various Christian values from the Old Testament such as love, caring, justice, respect, and compassion, in providing direct patient care through the study of various Biblical concepts. *Prerequisite: AS 716.

AS 728 Psychosocial Aspects of Health Care (2 Credits)

This interprofessional education course for pharmacy and nursing students presents an exploration of psychosocial concepts, cultural, and environmental factors relative to professional attitudes, behaviors, and dispositions. It is directed toward the development of self-awareness, professional responsibility, teamwork, and leadership qualities for functioning as a member of an interprofessional team. *Prerequisite: AS 730, AS 736.

AS 729 Medical Illustration II (2 Credits)

This interprofessional course is a continuation of Medical Illustration I which will introduce pharmacy and nursing students to art as a form of visual communication. The focus will be on the fundamentals and theory of drawing techniques with techniques, especially on anatomical objects. The course will enable students to apply a unique mix of skills in project management, understanding of science, and breaking medical technologies. Students will develop communication and teamwork skills essential for functioning as a member of an interprofessional team. *Prerequisite: PS 744.

AS 730 Pharmacy Law & Ethics (3 Credits)

This course provides an overview of current state and federal laws that substantially impact the competent delivery of pharmacy care and services in community, interprofessional, ambulatory/clinic, inpatient, administrative, and other key practice settings. Standards, guidelines, rules, requirements, practices, and policies relating to maintaining/improving patient safety and consumer protection are also provided. The laws and professional practice standards of the state of California are emphasized. In addition, the course will discuss the principles of professional behavior, ethical issues in patient care and teamwork, conflicts of interest, delivery of patient-centered care, and end-of-life care from a contemporary perspective. *Prerequisite: CS 724, AS 716.

AS 736 Professional Communications (3 Credits)

This course is designed to introduce the concepts and principles of interpersonal and professional communication and the strategies for effective communication with patients and other healthcare providers. Communication skills that will be covered in this course include motivational interviewing, listening, nonverbal communication, addressing patients' needs and preferences, and assertive communication. In addition, the role of health literacy, and cultural influences on communication of health information are explored. *Prerequisite: None.

AS 737 Judeo-Christian Ethics-Old Testament III (1 Credit)

This course introduces Biblical principles and concepts with a spiritual basis and practical approach to contemporary ethical and moral issues. This course instills the teaching of various Christian ethical and moral values as illustrated in the Old Testament to provide direct patient care and practice in the current healthcare environment. *Prerequisite: AS 726.

AS 745 Biostatistics & Research Design (3 Credits)

This course is to introduce statistical concepts and research design to students so that they can make evidence-based decisions in pharmacy practice. The statistical concepts include types of variables, levels of measurement, statistical distributions, descriptive statistics, hypothesis testing, statistical power, confidence interval, sample size, and inferential statistical testing such as parametric and non-parametric. This course also covers various methodologies and their applications in study design. In addition,

students will learn to estimate risks and odds in clinical trials, as well as different approaches to reviewing evidence-based scientific literature. *Prerequisite: CS 718.

AS 747 Judeo-Christian Leadership-Old Testament IV (1 Credit)

This course introduces Biblical principles with a spiritual basis and practical approach to contemporary leadership, entrepreneurship, and resource management. This course also instills the teaching of various Christian values as illustrated in the Bible, in providing knowledge, skill, and attitude of leadership, entrepreneurship, and resource management in the current healthcare environment. *Prerequisite: AS 737.

AS 856 Judeo-Christian Values in Patient Care-New Testament I (1 Credit)

This course introduces Biblical principles from the New Testament Bible with a spiritual basis and practical approach to contemporary patient care settings including acute illness, chronic diseases, death & end-of-life care. This course also instills the teaching of various Christian values such as spirit-mind-body connection, grace, mercy, prayer, compassion, and spiritual gifts in providing direct patient care through the study of various Biblical concepts. *Prerequisite: None.

AS 860 Epidemiology, Public Health & Policy (2 Credits)

This course is designed to introduce students to the basic principles of public health with an emphasis on health promotion and disease prevention with an emphasis on the role of pharmacists in public health. Students will learn areas of epidemiology, determinants of health, and how the epidemiology of diseases differs based on race, gender, and geography. This course also teaches the students to advocate for patients and the profession in health care policy. *Prerequisite: AS 745.

AS 864 Pharmacy Practice Management (2 Credits)

Students will learn about practice management in different settings. Additionally, students will learn the essentials for practice settings that include operations, human resources, finances, marketing, logistics, risk management, and the development of innovative pharmacy care services. The course will also focus on managerial responsibilities in healthcare settings. *Prerequisite: AS 912, CS 724.

AS 866 Judeo-Christian Values in Patient Care-New Testament II (1 Credit)

The course series will introduce pharmacy as a ministry of the healing arts and sciences, with a spiritual basis to the approach of contemporary patient care. Also covered are various Christian values, including love and compassion, in providing direct patient care through the study of Biblical principles. The fruits of the spirit will be discussed to empower inter-professional practice. *Prerequisite: AS 856.

AS 875 Judeo-Christian Ethics-New Testament III (1 Credit)

These courses will explain the principles of behavior and ethics dealing with individual conflict of interest, delivery of patient-centered care, and teamwork relevant to contemporary pharmacy practice from a Biblical perspective. *Prerequisite: AS 856.

AS 885 Judeo-Christian Leadership-New Testament IV (1 Credit)

These courses will develop skills for pharmacy practice leadership, resource management (including operational and managerial issues), and teamwork relevant to contemporary pharmacy practice from a Biblical perspective. *Prerequisite: AS 875.

AS 912 Pharmacoeconomics (2 Credits)

This course introduces students to the basic concepts, terminology, and applications of Pharmacoeconomics and its usefulness in making informed decisions in health care. Students will learn types of outcome evaluation and outcome measures, the appropriate uses and applicability of cost-of-illness, cost-minimization, cost-effectiveness, cost-benefit, cost-utility, and decision analyses. Emphasis is

placed upon the reading, interpretation, and critical evaluation of different types of published pharmacoeconomic studies in medical literature. *Prerequisites: AS 745; CS 871; CS 872.

CS 718 Patient Care Process: Health and Drug Information (4 Credits)

This course will introduce the fundamental concepts of the Pharmacist Patient Care Process (PPCP) and systematic approach to drug information and literature evaluations. Students will learn how to respond to medication and health information requests systematically and the information retrieval processes. The commonly used drug information resources that are available both in print and electronically will be discussed. Students will begin learning general information about the top 200 medications. The student will build a basic understanding of evidence-based medicine, the fundamentals of evaluating primary literature, and the types of studies that are available. This course will use active learning strategies using group projects to help students learn important drug information and literature evaluation skills. *Prerequisite: None.

CS 713 Self-Care Pharmacotherapy & Alternative Therapy (4 Credits)

This course discusses the concept of self-care and provides an in-depth review of conditions that are self-treatable with over-the-counter (OTC) products including nonprescription medications, non-pharmacological therapies, and complimentary and natural medicines. This course will provide students with the knowledge and skills to assess patients and assist with proper product selection and provide counseling and recommendations regarding self-care inquiries. Appropriate written documentation of findings and patient encounters using SOAP note format as well as laws that govern nonprescription therapy will be introduced. The course will also examine the role of pharmacists in public health through pharmacy-based health education, health promotion, and disease prevention in community pharmacy practice. *Prerequisite: CS 718.

CS 724 Pharmacy Practice: Medication Use Systems Management (3 Credits)

This course provides an overview of the roles and responsibilities of a pharmacist in general and in various practice settings that involve dispensing, distribution, and administration. This course provides knowledge about the preparation and dispensing of prescriptions, the development and maintenance of patient medication profiles, identification, and prevention of medication errors. The importance of leadership and professional development in these processes will be discussed. *Prerequisite: CS 718, AS 723.

CS 725 Patient Care Lab (1 Credit)

This interprofessional education course introduces pharmacy and nursing students to methods for obtaining a comprehensive patient history, basic assessment techniques, medical terminology, how to recognize abnormal findings, and how to triage and refer patients. This course will help students develop communication and teamwork skills essential for functioning as a member of an interprofessional team. *Prerequisite: CS 713.

CS 732 Health Informatics & Patient Safety (2 Credits)

This course will introduce students to the use of technology for organizing, analyzing, and managing information in healthcare settings. Students will get a better understanding of the roles of pharmacists in the implementation, maintenance, and use of informatics in hospital settings (e.g., Electronic Health Record [EHR], Computerized Prescriber Order Entry [CPOE], and Barcode Medication Administration [BCMA]). Patient safety as well as the benefits and current constraints of these systems will be explored. Systems in place to maintain the confidentiality of health information in accordance with federal policies will also be discussed. *Prerequisite: AS 723, CS 724.

CS 748 Practice Readiness I (2 credits)

This capstone course provides a comprehensive and integrated review of the first-year pharmacy curricular content including communication, drug and patient information, pharmaceutical calculations, self-care, medication use systems, and pharmaceutical compounding. Students are required to complete

a milestone examination as a fulfillment of the course. *Prerequisite: AS 736, CS 713, CS 724, PS 718, PS 719, PS 743.

CS 857 Integrated Pharmacotherapy I: Fluid, Electrolytes & Nutrition (5 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to fluid and electrolyte imbalance and hematological disorders. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with fluid and electrolyte imbalance or hematological disorders. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743.

CS 858 Integrated Pharmacotherapy II: Cardiology (6 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to cardiovascular diseases. The pathophysiology of a particular disease condition will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with cardiovascular disease. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743.

CS 859 Integrated Pharmacotherapy III: Pulmonary & Nephrology (5 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to pulmonary and nephrology diseases. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with pulmonary and/or nephrology disease. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743, CS 857.

CS 867 Integrated Pharmacotherapy IV: Gastroenterology & Endocrinology (5 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to gastroenterological or endocrinological disorders. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with gastroenterological or endocrinological diseases. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743.

CS 868 Integrated Pharmacotherapy VI: Infectious Disease I (4 Credits)

This course is a continuation of the Integrated Pharmacotherapy series with a focus on therapies for infectious diseases. This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to infectious

diseases. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with infectious diseases. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743, PS 731.

CS 869 Integrated Pharmacotherapy IX: Dermatology & Rheumatology (2 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to dermatologic and rheumatologic conditions. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with dermatologic and rheumatologic conditions. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743.

CS 870 Integrated Pharmacotherapy V: Neurology & Psychiatry (5 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to neurologic and psychiatric conditions. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with a neurologic and/or psychiatric condition. The laboratory section of the course will involve recitation with case discussions. *Prerequisite: PS 741, PS 742, PS 743.

CS 876 Integrated Pharmacotherapy VI: Infectious Disease II (4 Credits)

This course is a continuation of the Integrated Pharmacotherapy series with a focus on therapies for infectious diseases. This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to infectious diseases. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach of learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with infectious diseases. The laboratory section of the course will involve recitation with case discussions. **Prerequisite: PS 741, PS 742, PS 743,* CS 868, *PS 731 .*

CS 877 Integrated Pharmacotherapy VII: Oncology (6 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to oncology and nutrition support. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug

classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach of learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with oncology and/or requiring nutrition support. The laboratory section of the course will involve recitation with case discussions. **Prerequisite: PS 741, PS 742, PS743.*

CS 878 Integrated Pharmacotherapy VIII: Urology & Reproductive System (3 Credits)

This course horizontally integrates pathophysiology, medicinal chemistry, pharmacology, clinical pharmacokinetics, and pharmacotherapeutics concepts related to urologic conditions and reproductive system. The pathophysiology of specific disease conditions will be discussed, followed by the respective drugs or drug classes emphasizing structure-activity relationship, mechanisms of action, pharmacokinetics, and pharmacological actions on various organ systems, toxicity profiles, contraindications, and drug-drug interactions. Pharmacotherapeutics will be taught in a sequential and integrative manner to link concepts of medicinal chemistry coupled with the pharmacology of the drugs used in the corresponding disease. Through this integrated approach to learning, students will be able to apply knowledge of the basic sciences and clinical sciences to the management of patients with urologic or reproductive dysfunction/conditions. The laboratory section of the course will involve recitation with case discussions. **Prerequisite: PS 741, PS 742, PS 743.*

CS 886 Practice Readiness II (4 credits)

This is a case-based capstone course that provides a comprehensive and integrated review of the second-year pharmacotherapeutics content. The cases mimic complex clinical scenarios that students are likely to encounter during advanced pharmacy practice experiences. A broad range of assessment tools are used to evaluate student knowledge and skills including a milestone examination.

**Prerequisite: CC 857, CS 858, CS 859, CS 867, CS 870, CS 863, CS876, CS 877, CS 878.*

CS 943 Practice Readiness III (5 Credits)

This course will provide a review of selected materials encompassing the learning objectives from the didactic years. Students will further refine skills, apply knowledge, and demonstrate the attitudes and values of a healthcare professional. Students also engage in a variety of active learning strategies including the Objective Structured Clinical Examination (OSCE) where knowledge, skills, attitudes, and values are assessed and student readiness for Advanced Pharmacy Practice Experiences (APPEs) is evaluated.

**Prerequisite: PS 719, CS 713, PS 738, CC 857, CS 858, CS 859, CS 867, CS 870, CS 863, CS876, CS 877, CS 878.*

EE 746 IPPE I –Community (2 Credits)

The Introductory Pharmacy Practice Experience in Community Pharmacy provides students with hands-on experience in contemporary practice models under the guidance and supervision of a licensed pharmacist. Students will be introduced to the practical aspects of community pharmacy including, but not limited to prescription processing, preparation/filling of medications, patient consultation, immunization, inventory control, pharmacy operations and management, and compliance with regulatory requirements. Within this practice setting, students will also observe and practice professional ethics and behaviors. **Prerequisite: CS 718, CS 713, CS 725, AS 730, CS 724*

EE 855 IPPE II –Hospital (2 Credits)

The Introductory Pharmacy Practice Experience in Hospital Pharmacy settings provides students with hands-on experience in contemporary practice models in hospital settings under the guidance and supervision of a licensed pharmacist. Students will be introduced to hospital practice and the roles of pharmacists in the hospital. Within this practice, students will participate in accurate medication order processing, and demonstrate knowledge of unit dose and intravenous admixture systems, sterile IV medication compounding, medication procurement, medication distribution systems, monitoring of drug therapy, and medication safety. Students will also learn the role of organizations such as The Joint Commission (TJC) and regulatory agencies such as the State Board of Pharmacy, Pharmacy and Therapeutics (P&T) Committee, and IT infrastructure including automated dispensing systems, electronic medical records, and computerized prescriber order entry. **Prerequisite: EE 746.*

EE 865 IPPE III - Ambulatory Care (2 Credits)

The Introductory Pharmacy Practice Experience in Ambulatory Care provides students with hands-on experience in contemporary practice models in ambulatory care pharmacy settings under the guidance and supervision of a licensed pharmacist. Unlike IPPE I Community, IPPE III Ambulatory Care will have an emphasis on the management of patients. Students will obtain patient medication histories, assess the appropriateness of medication regimens, and identify drug-related problems for common chronic diseases. Students will utilize the Pharmacists' Patient Care Process to develop a care plan for an assigned patient to provide continuity of care. Students will learn to empower patients to manage their disease by educating them on the importance of health, immunization, wellness, and disease prevention. **Prerequisite: EE 746*

EE 874 IPPE IV –Transitions of Care (2 Credits)

The Introductory Pharmacy Practice Experience in Transitions of Care provides students with hands-on experience in transitional care in pharmacy settings such as hospital or outpatient settings under the supervision of a licensed pharmacist. Students will assist in transitioning a patient from one setting to another by conducting medication reconciliation, obtaining medication use behavior and history to assess medication adherence, identifying high-risk medications, and ensuring patient follow-up with their primary care provider. Students will ensure patients have access to medications and continuity of care by conducting follow-up telephone calls to discharged patients. Students will also design materials for patients in a comprehensible manner to communicate with patients with low health literacy. **Prerequisite: EE 746.*

EE 921 APPE I - Acute Care/General Medicine (6 Credits)

This course will provide students with advanced pharmacy practice experiences toward achieving competency in the acute care and inpatient/general medicine setting. The course integrates, reinforces, and applies the knowledge, skills, attitudes, and values developed in the didactic, IPPEs, and co-curricular activities. Students will be expected to utilize their skills and abilities to provide effective and appropriate patient-centered care. Students will be exposed to patients with a variety of disease states during the rotation. Students will actively engage in direct patient care activities such as obtaining and recording patient medication history, developing, and updating patient therapeutic plans, monitoring lab values, assessing for drug interactions and adverse drug reactions, and attending rounds as a member of the interprofessional team. **Prerequisite: EE 746, EE 855, EE 865, EE 874.*

EE 922 APPE II - Health Systems/Institution (6 Credits)

This course builds on the knowledge, skills, attitudes, and values developed in the didactic, IPPEs, and co-curricular activities. Students will be provided with advanced experience toward competency in health systems or institutional pharmacy practice, including management, system use, and direct patient care. The students will engage in activities including processing and dispensing of medication orders, performing dosage conversion and pharmacokinetic dosing of medications, conducting antibiotic

stewardship, evaluating drug therapy, retrieving, and evaluating drug information, consulting with physicians and other healthcare providers, and attending P & T committee meetings. Students will also be exposed to formulary management, monograph preparation, in-service activities, inventory management, therapeutic substitutions, or Regulatory affairs audit support. **Prerequisite: EE 746, EE 855, EE 865, EE 874.*

EE 931 APPE III - Ambulatory Care (6 Credits)

This course will provide students with advanced experience toward competency in pharmacist-provided care in ambulatory care settings and working with diverse patient populations. Students will actively participate in the management of common chronic diseases such as chronic heart failure, hypertension, dyslipidemia, anticoagulation, and pulmonary diseases (asthma and COPD) in a general or specialized outpatient setting. Students will be expected to utilize knowledge, skills, and abilities learned in prior courses to collect patient-specific information, evaluate, and monitor drug therapy appropriateness, develop patient-specific care plans, implement, follow up, and educate patients or caregivers, and collaborate with other healthcare professionals where applicable. **Prerequisite: EE 746, EE 855, EE 865, EE 874.*

EE 932 APPE IV - Advanced Community (6 Credits)

This course will provide students with advanced experience toward competency in the community pharmacy setting. Students will have opportunities to integrate and apply knowledge and skills acquired through didactic, IPPEs, and co-curricular experiences in various patient-centered activities. Students will develop critical thinking and decision-making skills while engaging in pharmacy operations, advanced patient-care services, and patient-focused dispensing functions. These activities will focus on obtaining patient medical history, performing drug regimen reviews, evaluating therapy adherence, counseling patients on appropriate self-care products, delivering immunizations, developing patient care plans with follow-up, and providing education to patients and other healthcare professionals. This course will allow students to explore the expanding roles of community pharmacists and prepare them to begin practice upon graduation. **Prerequisite: EE 746, EE 855, EE 865, EE 874.*

EE 941 APPE V - Elective I (6 Credits)

This elective course will provide students the opportunity to further develop experience in areas of professional interest, expand their understanding of professional opportunities, and achieve the outcomes of the curriculum. Elective clerkships may include but are not limited to, areas focused on academia, administration, community outreach, pharmacy entrepreneurship, international practice, long-term care, managed care, nuclear pharmacy, professional organizations, and research. Students may also choose to elect a clerkship in acute care and ambulatory care.

**Prerequisite: EE 746, EE 855, EE 865, EE 874.*

EE 942 APPE VI - Elective II (6 Credits)

This elective course will provide students the opportunity to further develop experience in areas of professional interest, expand their understanding of professional opportunities, and achieve the outcomes of the curriculum. Elective clerkships may include but are not limited to, areas focused on academia, administration, community outreach, pharmacy entrepreneurship, international practice, long-term care, managed care, nuclear pharmacy, professional organizations, and research. Students may also choose to elect a clerkship in acute care and ambulatory care.

**Prerequisite: EE 746, EE 855, EE 865, EE 874.*

PE 884 Elective I (2 Credits)

These are elective courses that will enable the student to further develop areas of professional interest, expand their understanding of professional opportunities, and achieve the outcomes of the curriculum. Elective courses offered include but are not limited to Advanced Topics (in various pharmacy/pharmacotherapy fields), Biotechnology, Independent Research Study, Nuclear Pharmacy,

Advanced Practice Management, Patient Advocacy, Pharmacy Leadership, Industrial Pharmacy, Introduction to Drug Development, Grant Writing, Special Issues in Clinical Research.

**Prerequisite: None.*

PE 913 Elective II (2 Credits)

These are elective courses that will enable the student to further develop areas of professional interest, expand their understanding of professional opportunities, and achieve the outcomes of the curriculum. Elective courses offered include but are not limited to Advanced Topics (in various pharmacy/ pharmacotherapy fields), Biotechnology, Independent Research Study, Nuclear Pharmacy, Advanced Practice Management, Patient Advocacy, Pharmacy Leadership, Industrial Pharmacy, Introduction to Drug Development, Grant Writing, Special Issues in Clinical Research.

**Prerequisite: None.*

PE 914 Elective III (2 Credits)

These are elective courses that will enable the student to further develop areas of professional interest, expand their understanding of professional opportunities, and achieve the outcomes of the curriculum. Elective courses offered include but are not limited to Advanced Topics (in various pharmacy/pharmacotherapy fields), Biotechnology, Independent Research Study, Nuclear Pharmacy, Advanced Practice Management, Patient Advocacy, Pharmacy Leadership, Industrial Pharmacy, Introduction to Drug Development, Grant Writing, Special Issues in Clinical Research.

**Prerequisite: None.*

PS 717 Biochemistry (4 Credits)

This course provides students with a review of functional groups, their properties, and their function in important biological molecules and drug substances. The structure, physical and chemical properties, biological functions, applicable kinetics, and the metabolic fate of molecules essential to life will be covered with an emphasis on application to pharmaceutical, medical, and clinical uses. **Prerequisite: None.*

PS 719 Pharmaceutical Calculations (4 Credits)

Students will be taught to perform accurate compounding and dosage calculations for solid and liquid dosage forms, injectable medications, and extemporaneously compounded prescription products to ensure the safety and efficacy of patients' therapy. **Prerequisite: None.*

PS 721 Pharmacogenomics & Genetics (2 Credits)

This course introduces the students to the genetic basis for disease and drug action, the genetic basis for alterations of drug metabolism (e.g., poor vs. normal metabolizers) and transport, and the genetic basis for individualized drug doses and/or changes to the drug of choice. The course discusses the role of pharmacogenomics in the development of diseases of high socioeconomic impact and in the pharmacotherapeutic efficacy of drugs used in these diseases. **Prerequisite: PS 731, PS 742.*

PS 720 Pharmaceutics and Biopharmaceutics (4 Credits)

This course will discuss the physicochemical properties of drugs and excipients used in the formulation and delivery of various dosage forms. This course will also include a discussion of critical factors (for ex: stability, dissolution, degradation, etc.) which have an impact on the biopharmaceutics, pharmacokinetics, and pharmacotherapy of drugs and dosage forms. This course includes the fundamental knowledge of pharmaceutical dosage forms that will be useful in future requisite courses like pharmacotherapeutics and pharmacokinetics. The laboratory component will provide students with a hands-on opportunity to apply classroom knowledge.

**Prerequisite: PS 719*

PS 727 Medical Illustration I (2 Credits)

This interprofessional education course introduces pharmacy and nursing students to foundational drawing methods, how to use art as a form of communication, how to develop imagination and creativity and find the relationship between art, science, and God. Students will study figurative art, and its strong references to the real world and human figure, anatomical art, which shows the interior of the body with context in the background, and medical illustration, which shows the interior of the body without context. This course is also designated to help foster empathy and appreciation for patient-centered care. Students will also learn communication and teamwork skills essential for functioning as a member of an interprofessional team. **Prerequisite: None.*

PS 731 Immunology and Medical Microbiology (3 Credits)

This course provides a fundamental background of the human immune system and medical microbiology. The topics covered include bacterial, viral, and fungal pathogens and parasites; composition and function of the human immune system; responses of the immune system to pathogens and parasites, injury, and disease; disorders of the immune system; tumor immunology; transplant rejection; and clinical application of immunology including therapeutic antibodies, vaccines, and diagnostic tools. **Prerequisite: PS 717.*

PS 733 Basic Pharmacokinetics (3 Credits)

This course is an introduction to basic principles of in vivo drug kinetics (linear and nonlinear) including principles of bioavailability/bioequivalence, physiologic determinates of drug onset and duration, drug, disease, and dietary influences on absorption, distribution, metabolism, and excretion and the pharmacokinetic-pharmacodynamic interface. **Prerequisite: PS 720, PS 742.*

PS 738 Extemporaneous & Sterile Compounding with Lab (2 Credits)

This course discusses the drug policy in US Pharmacopoeia guidance on compounding and FDA Compliance Policy Guidelines including techniques and principles used to prepare and dispense individual extemporaneous non-sterile and sterile preparations. The laboratory component will provide students with the opportunity to apply classroom knowledge. **Prerequisite: PS 719, PS 720.*

PS 741 Pathophysiology (3 Credits)
This course is designed to teach pharmacy students the principles of pathophysiological concepts and clinical practice guidelines for disease states and their interpretation in the clinical setting. This course emphasizes the pathological changes of the organ and cellular physiology which necessitates pharmacist intervention. The course examines the molecular, cellular, tissue, and organ-level basis of the pathophysiological changes leading to human diseases. **Prerequisite: PS 717, PS 731.*

PS 742 Introduction to Pharmacology & Toxicology (4 Credits)
This course will provide students with the foundational scientific knowledge pertaining to drug action. The conceptual understanding of the pharmacodynamic principles, receptor theory, drug-receptor interactions, drug metabolism, principles of drug toxicity, and drug-drug interaction will form the basis of understanding patient-directed therapeutic approaches that will be covered in subsequent Integrated Therapeutic course series. Students will also be introduced to the basis of the autonomic nervous system and the pharmacology of autonomic drugs. **Prerequisite: PS 717, PS 741, PS 743.*

PS 743 Introduction to Medicinal Chemistry (3 Credits)
The Introduction to Medicinal Chemistry course introduces foundational concepts in medicinal chemistry leading to students understanding of drug structure-activity relationships, physiochemical properties related to drug action, drug-target interactions, chemical aspects of drug metabolism, and medicinal chemistry of autonomic drugs. **Prerequisite: PS 717.*

Graduation Requirements

A student will be recommended for the degree of Doctor of Pharmacy provided the student:

1. Has completed three years in School of pharmacy (183 credit hours) meeting Satisfactory Academic Progress (SAP) progression.
2. Is not on provisional academic status, has completed all prescribed courses with a cumulative grade point average of 2.0 or higher, has no outstanding grade which is incomplete, and has a passing grade for all clinical rotations and all courses.
3. Has performed and behaved in a manner which is ethical, professional, and consistent with the practice of pharmacy.
4. Has satisfactorily passed prescribed exams.
5. Has completed 100 hours of community service.
6. Has completed all programmatic co-curricular and non-credit requirements (including but not limited to interprofessional activities, outreach events, PCOA, student portfolios, and course and programs surveys).
7. Has completed SAP requirements including all degree requirements within SEVEN AND A HALF (7.5) years following initiation of the matriculation process.
8. Has completed at least one AUHS authorized and/or sponsored international mission trip.
9. Has met all AUHS legal, financial requirements, and obligations are paid in full.

Bachelor of Science in Pharmaceutical Sciences

Program Overview

The AUHS Bachelor of Science in Pharmaceutical Sciences is a three-year interdisciplinary program that focuses from the outset on the foundation of coursework in mathematics and the basic sciences including Chemistry and Biology. The program then progresses to advanced coursework in the pharmaceutical sciences, including aspects of drug design and synthesis, mechanisms of drug action, pharmacology and toxicology, dosage formulation, manufacturing, quality assurance, and regulatory compliance.

The anticipated outcome of the BSPS program will be centered on the expected ability for the graduates to secure positions in pharmacy schools/colleges, other professional schools, and graduate schools. This BSPS program presents various career path opportunities that include entry-level technical positions in the pharmaceutical and biotechnology industry; graduate education in pharmaceutical, medical, and basic sciences; and post-baccalaureate professional education in pharmacy, medicine, law, and business.

Admissions

Follow the university's general admissions requirements for baccalaureate degree.

Transferring into BSPS

College students or previous college students who have completed at least one year of college may be admitted if:

- Completed at least 2 semesters (semester system) or 3 quarters (quarter system) of a college program from an accredited college. Must have attained an overall GPA of at least 2.5.
- Students who have achieved a bachelor’s degree with a 2.5 or greater meet the admission requirement in this category.

Objectives

The Objectives of the Bachelor of Science in Pharmaceutical Science program are:

- To provide a well-rounded undergraduate education with an emphasis on pharmaceutical sciences. To integrate knowledge with hands-on experience to enhance career path development in pharmaceutical sciences.
- To provide educational solutions to health issues centered around professional pharmacy and pharmaceutical sciences.
- To attract and prepare students, especially minority students, to enter and successfully graduate from the school of pharmacy.

- To attract and prepare students, especially minority students, for a career in the pharmaceutical industry.
- To prepare underrepresented students as future lifelong learners and future leaders in the healthcare and research sectors, as well as serve as future policy advocates in regulatory affairs.

Program Learning Outcomes (PLOs)

The purpose of the health sciences program is to provide graduates with the relevant knowledge base, skills, attitudes, ethics, and values to succeed in basic and applied health-related careers.

Graduates will have a strong foundation in the physical, biological, clinical, and behavioral sciences coupled with an understanding of how business and management models apply to health sciences-related fields. Graduates will develop the skills and habits to acquire and apply new knowledge.

1. Demonstrate the ability to communicate effectively with others and to be understood in both the spoken and written word.
2. Use critical thinking skills to identify, analyze, and solve pharmaceutical science problems.
3. Use logic to solve problems and draw valid conclusions by interpreting mathematical formulas, tables, and graphs.
4. Recognize and assess the interdependence of social and cultural systems and evaluate their impact on achieving unity and harmony in everyday life.
5. Demonstrate Christian values in serving others.
6. Retrieve, assess, and use information effectively to improve outcomes of academic and personal endeavors.
7. Apply the chemical and biological principles that govern the function of the human body to assess health-related problems.
8. Integrate principles of chemistry, biochemistry, biology, and mathematics in drug development and in the design of drug delivery systems.

BSPS PROGRAM INFORMATION (CIP 51.2010; SOC 29-1051)

Program Length	Quarters	Quarter Credit Units	Clock Hours
36 Months	12 Quarters	189 Units	2260

THE FORMULA USED TO CALCULATE THE NUMBER OF QUARTER CREDIT UNITS:

Type	Credit Hours
Lecture	One Credit = 10 Lecture Hours
Laboratory	One Credit = 20 Laboratory Hours
Experiential	One Credit = 30 Practicum Hours

INSTRUCTIONAL CLOCK HOUR TO CREDIT CONVERSION

A “clock (contact) hour” includes a minimum instructional time of 50 minutes of supervised or directed instruction and appropriate break(s).

BSPS REQUIRED GENERAL EDUCATION COURSES

Course Number	Course Name	Quarter Credit Units
Art 200	Medical Illustration I	3
Art 300	Medical Illustration II	3
Biology 101 w/Lab	General Biology I with Laboratory	4
Biology 102 w/Lab	General Biology II with Laboratory	4
Biology 200A & 200AL	Human Anatomy with Laboratory	4
Biology 200B & 200BL	Human Physiology with Laboratory	4

Chemistry 151 A&B	General, Organic and BioChemistry with Laboratory	6
Communications 150	Oral Communications & Public Speech	4
English 101	English College Composition I	4
English 207	Creative Writing	4
History 101	American History & Constitution	4
Mathematics 110	Quantitative Reasoning	4
Microbiology 201 & 201L	Microbiology with Laboratory	4
Philosophy 160	Critical Thinking	4
Political Science 101	American Political Institutions	4
Psychology 100	Psychology	4
Sociology 100	Sociology	4
TOTAL		**68**

OTHER REQUIRED COURSES

Course Number	Course Name	Quarter Credit Units
Biochemistry 201	Biochemistry	6
Biology 202 & 202L	Cell Biology I with Laboratory	4
Biology 204 & 204L	Cell Biology II with Laboratory	4
Biology 230	Pathophysiology	4
Biology 301 & 301L	Molecular Biology with Laboratory	4
Calculus 102	Calculus I	4
Calculus 201	Calculus II	2
Chemistry 160 & 160L	General Chemistry II with Laboratory	4
Chemistry 203 & 203L	General Chemistry III with Laboratory	4
Chemistry 303 & 303L	Organic Chemistry I with Laboratory	4
Chemistry 304 & 304L	Organic Chemistry II with Laboratory	4
Chemistry 401 & 401L	Organic Chemistry III with Laboratory	5
Economics 202	Micro-Economics	4
Nutrition 240	Nutrition	3
Philosophy 304	Ethics	4
Physics 305 & 305L	College Physics I with Laboratory	5
Physics 403 & 403L	College Physics II with Laboratory	5
Spanish 201	Healthcare Spanish	4
Statistics 415	Statistics	4
Technical Writing 301	Technical Writing	3
TOTAL		**81**

BSPS CORE COURSE LIST

Course Number	Course Name	Quarter Credit Units
BMS 302	Intro Clinical Research	3
BMS 405	Genetics	2
PHM 101	Pharmacy I	6
PHM 102	Pharmacy II	6
PHM 103	Pharmacy III	6
PHM 201	Pharmacy IV	6
PHM 301	Pharmacology I	4
PHM 302L	Pharmacy Experience V	2
PHM 401	Therapeutics I	2
PHM 403L	Pharmacy Experience VI	2
PHM 407L	Pharmacy Experience VII	2

PHM 411L	Pharmacy Experience VIII	2
TOTALS		**40**

NOTE: Courses may be taught in a sequence that differs from the order represented above.

BSPS GENERAL EDUCATION COURSE DESCRIPTION

ART 200: Medical Illustration I
(3 Credit Units)
This course will introduce the student to art as a form of communication. The focus will be on drawing and the introduction of foundation art techniques. The knowledge and skill acquired are related to enhanced assessment and visualization as part of the communication process. The course will enable the students to apply a unique mix of skills in project management, understanding of science and breaking medical technologies, as well as the fundamentals of art, animation, design, and Web development.

ART 300: Medical Illustration II
(3 Credit Units)
Literally, the term 'illustrations' can be defined as any kind of visualization such as painting, drawing, photograph, or other art form that depicts or elaborates a story or textual information. The ART 300 course is a continuation of ART 200, which will introduce the student to art as a form of communication. The course will enable the student to articulate a unique mix of skills in project management, understanding of science and breaking medical technologies, as well as the fundamentals of art, animation, design, and Web development.
Prerequisite: ART 200

BIOCHEMISTRY 201: Biochemistry
(6 Credit Units)
To develop an understanding of the major biomolecules found in living organisms, the control and regulation of protein structure and function, enzyme kinetics, nucleic acids, lipids and membrane transport, biochemical evolution, and an introduction to carbohydrates and metabolism.

BIOLOGY 101: General Biology I
(3 Credit Units)
This course is an introduction to general biology principles. Emphasis will be on the influence biological systems will have at a cellular (and molecular) level on the biological functioning of living systems. The course includes laboratory aspects of general biology, its organization, and biodiversity. Emphasis will also be on the genetic mechanisms influencing the organization of biological systems at cellular and molecular levels.
BIOLOGY 101L
(1 Credit Unit)
Lab portion of the Biology 101 course.

BIOLOGY 102: General Biology II
(3 Credit Units)
This course introduces biological principles underlying human biology. The course includes an introduction to human biology, its organization, and an understanding of structure-function relationships. Emphasis will be on structure-function aspects of organ systems. The course includes practical concepts of human biology and its organization at the organ system level.

BIOLOGY 102L
(1 Credit Unit)
Lab portion of the Biology 102 course.

BIOLOGY 200A: Human Anatomy

(3 Credit Units)
This course provides a comprehensive study of the structure and functions of the human body through analysis of the body systems. The student will progress from the cellular structure and function of each system to homeostatic mechanisms among all systems and the external environment.

BIOLOGY 200A L: Human Anatomy - Laboratory
(1 Credit Unit)
Lab portion of the Biology 200A: Human Anatomy course.

BIOLOGY 200B: Human Physiology with Laboratory
(3 Credit Units)
This course provides students with an understanding of the basic principles and concepts of cellular and organ system physiology and pathophysiology. The course includes an introduction to the chemistry and metabolism of biological molecules such as carbohydrates, lipids, amino acids, proteins, and nucleic acids; and coverage of vitamins and their components, with an emphasis on their relationship to disease states and drug therapy.

BIOLOGY 200B L: Human Physiology - Laboratory
(1 Credit Unit)
Lab portion of the Biology 200B: Human Physiology course.

BIOLOGY 202: Cell Biology I
(3 Credit Units)
The Cell Biology course focuses on the foundations of biological sciences and emphasizes the molecular approaches to understanding cell structure, function, and regulation. Topics include endocytosis, intra-membrane transport, protein targeting, organelle biosynthesis, protein sorting, and exocytosis.

BIOLOGY 202L: Cell Biology I - Laboratory
(1 Credit Unit)
Lab portion of the Biology 202 course.

BIOLOGY 204: Cell Biology II
(3 Credit Units)
This course is a continuation of Biology 202, focusing on molecular approaches to understanding cell structure and function. Topics include motility, cell-to-cell interaction, and cellular functions relevant to programmed cell death.
Prerequisite: BIOLOGY 202

BIOLOGY 204L: Cell Biology II - Laboratory
(1 Credit Unit)
Lab portion of the Biology 204 course.
Prerequisite: BIOLOGY 202

BIOLOGY 230: Pathophysiology
(4 Credit Units)
This course explores the response of the human body to illness and injury with respect to common disorders of the major physiologic systems. Clinical correlations are provided to assist the health professional in applying this knowledge toward proposing therapeutic interventions.
Prerequisite: BIOLOGY 200A; BIOLOGY 200B

BIOLOGY 301: Molecular Biology
(3 Credit Units)
The course considers the concepts of cellular and molecular biology as applied to human disease with emphasis on current experimental approaches to investigate disease mechanisms and the contributions of model systems from cancer biology and viral-induced disease to gene therapy. The course blends

integrated reading, writing, and experimentation in molecular biology to evaluate the design and implementation of experiments using modern molecular biology techniques to address current questions in biology.
Prerequisites: Chemistry 151 A&B, Chemistry 160, Chemistry 203

BIOLOGY 301L: Molecular Biology - Laboratory
(1 Credit Unit)
Lab portion of the Biology 301: Molecular Biology course.

CALCULUS 102: Calculus I
(4 Credit Units)
This course is an introduction to calculus, the subject that studies change. The concept of limit, the key idea of calculus, will be introduced. Using the limit, students will be able to understand the notion of instantaneous rate of change (the derivative) and the total change (the integral). The course will be presented using a conceptual approach that emphasizes understanding.
Prerequisites: Mathematics 110

CALCULUS 201: Calculus II
(2 Credit Units)
This course builds on the solid knowledge of Calculus I, particularly differentiation and integration techniques and their applications. Following the discussion of techniques of integration, the course reviews the calculus of curves defined by parametric equations and polar coordinates. It concludes with an in-depth discussion of series and their application to the representation of functions by power series.
Prerequisites: Calculus 102

CHEMISTRY 151 A & B: General, Organic, and Biochemistry
(4 Credit Units)
This course is a descriptive course in inorganic and organic chemistry. Basic laws and chemical calculations are stressed with an emphasis on theory and technique of qualitative analysis. Organic chemistry includes the principles underlying the chemistry of living systems, providing an introduction to bioenergetics, metabolism, biosynthesis, and molecular physiology.

CHEMISTRY 151 A & B L: General, Organic, and Biochemistry - Laboratory
(2 Credit Units)
Lab portion of the Chemistry 151 A & B: General, Organic, and Biochemistry course.

CHEMISTRY 160: General Chemistry II
(3 Credit Units)
This course continues the Chemistry 151 A & B series, focusing on inorganic and organic chemistry. Topics include bonding (including molecular orbital theory) and states of matter. The course provides an introduction to bioenergetics, metabolism, biosynthesis, and molecular physiology.
Prerequisites: Chemistry 151 A & B

CHEMISTRY 160L: General Chemistry II - Laboratory
(1 Credit Unit)
Lab portion of the Chemistry 160: General Chemistry II course.
Prerequisites: Chemistry 151 A & B

CHEMISTRY 203: General Chemistry III
(3 Credit Units)
This course concludes the General Chemistry series, emphasizing the chemistry of the elements, properties of solutions, and principles of qualitative analysis. Topics include bioenergetics, metabolism, and biosynthesis with applications to formulation chemistry.
Prerequisites: Chemistry 160

CHEMISTRY 203L: General Chemistry III - Laboratory
(1 Credit Unit)
Lab portion of the Chemistry 203: General Chemistry III course.

CHEMISTRY 303: Organic Chemistry I
(3 Credit Units)
This course is the first in the Organic Chemistry series, focusing on the principles underlying the chemistry of living systems. Topics include bioenergetics, metabolism, biosynthesis, and molecular physiology.
Prerequisites: Chemistry 151 A & B, Chemistry 160, Chemistry 203

CHEMISTRY 303L: Organic Chemistry I - Laboratory
(1 Credit Unit)
Lab portion of the Chemistry 303: Organic Chemistry I course.

CHEMISTRY 304: Organic Chemistry II
(3 Credit Units)
The second in the Organic Chemistry series, this course continues the exploration of living systems' chemistry, emphasizing metabolism and biosynthesis.
Prerequisites: Chemistry 303

CHEMISTRY 304L: Organic Chemistry II - Laboratory
(1 Credit Unit)
Lab portion of the Chemistry 304: Organic Chemistry II course.

CHEMISTRY 401: Organic Chemistry III
(4 Credit Units)
The final course in the Organic Chemistry series, emphasizing bioenergetics, metabolism, and biosynthesis with practical applications in advanced organic chemistry topics.
Prerequisites: Chemistry 304

CHEMISTRY 401L: Organic Chemistry III - Laboratory
(1 Credit Unit)
Lab portion of the Chemistry 401: Organic Chemistry III course.

COMMUNICATIONS 150: Oral Communications & Public Speech
(4 Credit Units)
This course is an introduction to effective oral communication through study and experiences in analysis, synthesis, and presentation of informative and persuasive discourse in a public speaking forum.

ECONOMICS 202: Microeconomics
(4 Credit Units)
The course teaches basic economic concepts, emphasizing the nature and functions of product markets (supply and demand), marginal analysis, and opportunity costs. Topics include factor markets, market failure, and the role of government.
Prerequisites: Mathematics 110

ENGLISH 101: English College Composition I
(4 Credit Units)
This is a foundation course in critical reading and writing skills required for university studies. The course focuses equally on writing and critical reading of a diverse variety of literature; preparation of research papers in which students accurately, clearly, and coherently synthesize ideas and information from a variety of sources and points of view.

ENGLISH 207: Creative Writing
(4 Credit Units)
A beginning creative writing workshop that introduces students to techniques of imaginative writing in fiction, poetry, and drama in a constructive workshop setting that includes analysis of published literary works.

HISTORY 101: American History & the Constitution
(4 Credit Units)
A survey of United States history from the Colonial Period to the present emphasizing major political, social, economic, and cultural developments.

MATHEMATICS 110: Quantitative Reasoning
(4 Credit Units)
Principles of quantitative reasoning, data presentation, descriptive statistics, correlation, probability, distributions of random variables, sampling distributions, interval estimation, and statistical inference, with multi-disciplinary applications.

MICROBIOLOGY 201: Microbiology
(3 Credit Units)
This course introduces the fundamental principles of microbiology, including general aspects of the structure, metabolism, multiplication, genetics, and classification of bacteria, fungi, protozoa, and viruses. Topics also include control methods for these microorganisms, the human body's natural defense mechanisms, and selected microbial pathogens.

MICROBIOLOGY 201L: Microbiology - Laboratory
(1 Credit Unit)
Lab portion of the Microbiology 201 course.

NUTRITION 240: Nutrition
(3 Credit Units)
This course covers basic human nutrition, including the process of digestion and absorption, metabolic roles of macronutrients (carbohydrates, fats, and proteins), and micronutrients (vitamins, minerals, and water). Topics include medical nutritional therapy as applied throughout the life cycle and to specific disease states, nutrient-drug interaction, consumer food safety, menu planning, and current trends in nutrition.

PHILOSOPHY 160: Critical Thinking
(4 Credit Units)
This course presents a logical analysis of language and critical evaluation of arguments in everyday language. Topics include deductively valid and invalid argument forms, rudiments of inductive logic, scientific reasoning, and informal fallacies.

PHILOSOPHY 304: Ethics
(4 Credit Units)
This course involves the analysis of empirical and normative factors involved in choice, types of ethical theory, and the nature of moral standards and judgments. The course examines value theories in Eastern and Western philosophies with relevance to educational, aesthetic, religious, and social problems. Prerequisite: English College Composition I

PHYSICS 305: College Physics I
(4 Credit Units)
This course develops students' understanding of physics concepts and principles required to describe and predict the motion of objects. The laboratory component provides opportunities to perform

experiments on concepts discussed in class. Students learn techniques and methods of experimental physics and the analysis and interpretation of experimental data.

PHYSICS 305L: College Physics I - Laboratory
(1 Credit Unit)
Lab portion of the Physics 305 course.

PHYSICS 403: College Physics II
(4 Credit Units)
This course builds on College Physics I, advancing students' understanding of physics concepts and principles. The laboratory component includes hands-on experiments and data interpretation.
Prerequisites: Physics 305

PHYSICS 403L: College Physics II - Laboratory
(1 Credit Unit)
Lab portion of the Physics 403 course.
Prerequisites: Physics 305

POLITICAL SCIENCE 101: American Political Institutions
(4 Credit Units)
A study of national, state, and local governments, national and state constitutions, the rights and responsibilities of citizens, and the political processes, issues, and policies of those governments.

PSYCHOLOGY 100: Psychology
(4 Credit Units)
This course provides a general survey of psychology, including the development of the individual, learning, thinking, motivation, emotion, and perception.

SOCIOLOGY 100: Sociology
(4 Credit Units)
This course surveys the theories, philosophies, and problems of sociology, analyzing human relationships through the study of concepts, institutions, cultural origins, and social interaction and change.

SPANISH 201: Healthcare Spanish
(4 Credit Units)
The Healthcare Spanish course equips students with the vocabulary and grammar needed for basic conversations in Spanish. Students explore cultural aspects of the Spanish-speaking world while developing communication skills in speaking, listening, reading, and writing. The course also introduces intermediate-level grammar and vocabulary relevant to healthcare settings.

STATISTICS 415: Statistics
(4 Credit Units)
This course covers descriptive and inferential statistics, mathematics of finance, linear programming, and graph theory.

TECHNICAL WRITING 301: Technical Writing
(3 Credit Units)
This course focuses on translating technical information into readable, accessible writing for diverse audiences. Students create manuals, help systems, and instructional materials. The course covers approaches and techniques for organizing and producing various types of technical documents.

BSPS CORE COURSES

BMS 402: Grant Writing
(4 Credit Units)
Funding to support both applied research and service provision is a critical aspect of professionals in the

pharmaceutical and health sciences. Students in pharmaceutical and health sciences often complete their education with little formal training in grant writing beyond the investigator-initiated R01. The course will discuss strategies for identifying appropriate funders and applying for support, which are instrumental to the initiation of new areas of study and service provision and the sustainability of ongoing public health programs. An understanding of the utility of various types of funders, including local, state, and federal governments, foundations, and corporations, provides a catalyst for diversifying funding sources. Students will attend weekly sessions presented in a lecture/workshop format. Sessions will be held in a computer laboratory to foster hands-on exploration of information resources. The course will derive projects from the spectrum of topics covered in the Clinical Research program and students' interests.

BMS 405: Genetics
(2 Credit Units)
This course introduces the students to the genetic basis for disease and individualizing drug therapy and healthcare. The genome and proteomic principles in relation to disease and drug development will be discussed.

PHM 101: Pharmacy I
(6 Credit Units)
This course serves as an introduction to pharmacy practice for the BS Pharmaceutical Science student in preparation for taking the PTCB exam to obtain CPhT by the end of the 4th quarter. This course is designed to expose the student to fundamentals, principles, and practice of pharmacy at an introductory level. Coursework includes theory and application of theory to lab experience necessary for an entry-level position as a certified pharmacy technician capable of working in any pharmacy environment or related allied health industry.

PHM 102: Pharmacy II
(6 Credit Units)
This course serves as a continuation of the introduction of pharmacy in preparation for taking the PTCB exam to obtain CPhT by the end of the 4th quarter. The course includes a review of the role of the pharmacist and pharmacy technician, SPF's for Controlled Substances, Applied Aseptic Technique along with the Preparation of Sterile Products - LVP, TPN, and IVPB, and will progress with the practice of dispensing drugs that affect the Skin, Eye, and Ear, Digestive System, Muscle Skeletal System, Endocrine System, and Infection. Discussion and practice of Medication Safety and Errors will be further developed. Multiple Drug Report Presentations: The student will progress from presenting one drug report to presenting multiple drug reports.

Prerequisite: *PHM 101*
PHM 103: Pharmacy III
(6 Credit Units)
The PHM 120 course is the final sequence of preparatory courses that introduces the BSPS student to the health science technician arena with the purpose of preparing for a career as a pharmacy technician in both community and hospital pharmacies and functioning successfully in the role. The course has a large amount of time spent in the clinical setting for the purpose of hands-on training that prepares the student for national certification.

Prerequisite: *PHM 102*
PHM 201: Pharmacy IV
(6 Credit Units)
This course builds on PHM 101, 102, and 103, giving the student an insight into the field of pharmacy and pharmacy practice. This course focuses on introducing the BSPS student to community and hospital pharmacy. The student will become familiar with the important roles of the pharmacist in community practice, including the dispensing process for prescription medications, medication compounding, patient consultations, over-the-counter drug counseling, education of pharmacy students and residents, and patient-oriented clinical services such as the administration of immunizations. The student will gain knowledge of the many roles that pharmacists are responsible for in hospital practice, including the

distribution of medications, medication compounding, collaborations as a member of the healthcare team, and therapeutic drug monitoring.

Prerequisite: *PHM 103*

PHM 301: Pharmacology I

(4 Credit Units)

During the course, basic pharmacological principles and various classifications of drugs will be discussed. The mechanism of action of drugs associated with interaction with biological receptors as well as the concepts of absorption, distribution, metabolism, and excretion will be emphasized. When the different classifications of drugs are instructed, the student is expected to know indications, clinical uses, side effects, and drug interactions. Clinical management of patients and therapeutics is also emphasized as problem-oriented situations are presented.

PHM 302L: Pharmacy Experience V

(2 Credit Units)

This course is the continuation of the series of pharmacy field experience courses focused on introducing the BSPS student to community and hospital pharmacy. The course focuses on integrative medicine and consultant pharmacy. The student will learn firsthand the work of pharmacists in ambulatory clinical practices such as medication therapy management, disease management, wellness and prevention, and specialty services. The practice in integrative medicine incorporates treatments from conventional medicine and complementary and alternative medicine (e.g., herbal therapies). The student will also learn about consultant pharmacists whose varied roles include reviewing patient medication profiles at long-term care facilities, recommending medication changes when appropriate, collaborating with other healthcare providers, providing information to patients and their families, educating students, and conducting in-service training sessions.

PHM 401: Therapeutics I

(2 Credit Units)

The Foundations of Pharmaceutical Sciences I course will introduce the student to traditional physical pharmacy aspects such as solubility, stability, interfacial tension, and drug complications that can affect product selection and therapeutics. There will be an emphasis on the physicochemical properties of drug compounds and dosage forms, particularly as they correlate to biopharmaceutics and pharmacokinetics. Pharmaceutical calculations and extemporaneous compounding principles will be core highlights of the course.

PHM 403L: Pharmacy Experience VI

(2 Credit Units)

This course is the continuation of the series of the PHM 302L course aimed at introducing the BSPS student to the practice of pharmacy. The present PHM 403L is focused on the managed care environment and pharmacy benefit management. This includes managing prescription benefit plans for employers, communicating with prescribers and patients, prescription processing and dispensing, providing medications to patients through mail-service delivery, and medication therapy management services.

PHM 407L: Pharmacy Experience VII

(2 Credit Units)

This course continues the introduction of the BSPS student to the practice of pharmacy and focuses on the practice of home infusion pharmacy, including the preparation of sterile solutions and monitoring of patients who need intravenous medications at home. The student will learn why infusion therapy is needed and how the medications are prepared and delivered to the patient. During this course, the student will also be introduced to the practice of nuclear pharmacy, including the preparation of radioactive compounds used to diagnose or treat specific diseases. The student will learn about the importance of consultations within the nuclear medicine healthcare team, training requirements, and specialty certification available for the nuclear pharmacy field.

PHM 411L: Pharmacy Experience VIII

(2 Credit Units)
This course focuses on “Anticoagulation Pharmacy” and describes the role of the pharmacist in the practice of managing anticoagulation drug therapy. The student will learn why these drugs are needed, devices used to monitor various parameters in the patient’s blood, collaborations with other health professionals, training pharmacy students, and educating patients about their therapies. The student will also learn firsthand about various antithrombotic medications, especially Coumadin®, which is used to reduce the degree to which a patient’s blood clots.

GE 498: Special Topics
(2 Credit Units / 20 Clock Hours)
This course is an independent study. The student will be required to complete the contact hours as described in the syllabus under "Instructional Methods" and "Attendance." This special topic course involves directed study through readings, projects, papers, community engagement, and/or focused seminars. Students pursue an area of interest with the guidance of a faculty mentor and create an original work focused on teaching and/or service. The course is intended to further student development by applying leadership skills, assessing problems affecting quality healthcare delivery, and relating evidence-based practice to the care of vulnerable populations. The student is expected to complete a culminating project focused on University and Program outcomes and will upload the approved project on social media.

GE 499: Special Topics
(1 Credit Unit / 10 Clock Hours)
This course is an independent study. The student will be required to complete the contact hours as described in the syllabus under "Instructional Methods" and "Attendance." This special topic course involves directed study through readings, projects, papers, community engagement, and/or focused seminars. Students pursue an area of interest with the guidance of a faculty mentor and create an original work focused on teaching and/or service. The course is intended to further student development by applying leadership skills, assessing problems affecting quality healthcare delivery, and relating evidence-based practice to the care of vulnerable populations. The student is expected to complete a culminating project focused on University and Program outcomes and will upload the approved project on social media.

Graduation Requirements

1. In addition to the requirements for the BSPS major, all students in the university follow the “pattern of degree requirements” in the AUHS Catalog. The minimum requirement for graduation is 189 quarter credit units of prescribed bachelor’s degree courses.

2. Completion of course requirements within 4½ years of entrance to the program.

3. Students must complete all coursework, examinations, and clinical experiences with a cumulative grade point average of 2.00 or a letter grade of C or higher.

4. Present at Poster Session for a selected drug, medical device, or research question on health care and present a final paper for that poster session.

5. Complete at least 100 clock hours of community service in university-sponsored community-driven initiatives.

6. Each BSPS student is required to maintain a portfolio showcasing their work, education, and learning experiences while attending the AUHS BSPS Program. Refer to Portfolio Content Guidelines. Successful completion of the Student Portfolio is contingent upon the maintenance of the Portfolio throughout the BSPS program, and it will be used as a basis for evaluation and to provide evidence of growth. A satisfactorily completed portfolio is a requirement for graduation from the program.

7. Students are eligible for graduation upon completion of all the University and BSPS program requirements.

8. All financial obligations to the university are paid in full.