

# PHARMACEUTICAL SCIENCES (RXPS)

## Courses

### **RXPS 501. Pharmaceutical Calculations. 2 Units.**

Presents foundational mathematical principles concerned with the formulation, preparation and effectiveness of pharmaceutical dosage forms and dispensing of prescription medication commonly seen in a variety of practice settings.

### **RXPS 502. Pharmaceutics I. 4 Units.**

Addresses the study and application of physical and chemical principles to the development, preparation, and stabilization of pharmaceutical dosage forms. Also included is a study of biological and physicochemical factors that influence availability of a drug from dosage form and subsequent disposition and response of the drug in the body.

### **RXPS 503. Pharmaceutics II. 3 Units.**

Studies the mathematical, physicochemical, and biological principles involved in the design, preparation and effectiveness of pharmaceutical dosage forms employed for various routes of administration.

Prerequisite: RXPS 502.

### **RXPS 541. Foundations of Biomedical Science I. 4 Units.**

Foundational biological, chemical, physiological, and pharmacological principles related to drug action, wellness, and disease. Focuses on the roles that proteins play in enzymatic catalysis, gene regulation, pharmacogenomics, membrane transport, signal transduction, drug toxicity, and the physiology and pharmacology of neurons and myocytes.

### **RXPS 542. Foundations of Biomedical Science II. 4 Units.**

Pharmacologic basis for drug treatment of diseases of the nervous, respiratory and endocrine systems. Addresses basic physiologic principles and the pathophysiology of key pathways of all three systems. Themes include: molecular and cell physiology, drug receptor physiology, transporters, asthma, ventilation-perfusion mismatch, lung function changes in obstructive and restrictive lung diseases, diabetes and hypothalamic and pituitary regulation of the endocrine organs.

### **RXPS 543. Foundations of Biomedical Science III. 4 Units.**

Presents foundational principles of the pathophysiology of endocrine, cardiovascular, and renal system diseases. Focuses on the pharmacology of drugs used to treat endocrine, cardiovascular, and renal disorders.

### **RXPS 544. Foundations of Biomedical Science IV. 4 Units.**

Presents foundational principles of the digestive system, the immune system, and infectious diseases. Focuses on the pharmacology of drugs used to treat digestive and immune disorders as well as bacterial and viral infections.

### **RXPS 545. Foundations of Biomedical Science V. 4 Units.**

Provides foundational knowledge for understanding the pathophysiology of diseases that affect the central nervous system (CNS) and cancer—including cancer immunotherapy. Also covers the pharmacology of drugs used to treat CNS disorders and cancer.

### **RXPS 610. Pharmacokinetics. 4 Units.**

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

### **RXPS 615. Learning and Memory. 2 Units.**

Introduces students to evidence-based, effective strategies to optimize learning and memory. Develops active learners with lifelong learning skills to promote success not only in school but also in the workplace.

### **RXPS 616. Neuropsychopharmacology. 3 Units.**

Fundamentals of neuropsychopharmacology, including the functional organization of the brain, and the physiology and biochemistry of major neurotransmitters. Examines how medications and drugs of abuse affect the brain and alter behavior. Discusses common brain disorders with a focus on the mechanisms of action of drugs used for treatment.

### **RXPS 617. Natural Products in Current Therapeutics. 2 Units.**

A journal club-style course in which students lead the discussion and dialogue. Explores specific cases of natural product-derived therapeutics from the history of discovery, synthesis, and biological activity to drug development and marketing. Students perform literature searches, read and summarize journal articles, present summaries of multiple articles on a similar topic, and prepare topical presentations for the class.

### **RXPS 619. Nutrition and Culinary Arts. 2 Units.**

Develops basic nutrition and culinary arts skills for patient care. Addresses disease reversal, lifestyle-change programs, lifestyle medicine, culinary medicine, culinary prescription, and the whole-food plant-based diets. Includes: chronic disease classification, disease reversal research, label reading, portion size, nutrient comparisons, budgeted meal planning, and community health strategies.

### **RXPS 630. Biochemical Aspects of the Obesity and Metabolic Syndrome. 2 Units.**

Explores biochemical factors related to obesity. Emphasizes the impact of these factors on currently available pharmacotherapeutic options and development of new therapies. Focuses on the role of pharmacist-guided lifestyle interventions on the treatment of obesity and metabolic syndrome.

### **RXPS 651. Principles of Medicinal Chemistry I. 3 Units.**

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

### **RXPS 652. Principles of Medicinal Chemistry II. 4 Units.**

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

### **RXPS 653. Principles of Medicinal Chemistry III. 3 Units.**

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

### **RXPS 710. Dietary Supplements. 2 Units.**

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

**RXPS 719. Nutrition and Metabolic Syndrome. 2 Units.**

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

**RXPS 730. Current Topics in Medicinal Chemistry and Drug Design. 1 Unit.**

Focuses on discovery and design of new drugs for new therapeutic targets, and on development of new approaches for treatment of diseases.

**RXPS 782. Special Topics in Pharmaceutical Sciences. 1-4 Units.**

Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

**RXPS 783. Special Topics in Pharmaceutical Sciences. 1-4 Units.**

Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.

**RXPS 784. Special Topics in Pharmaceutical Sciences. 1-4 Units.**

Lecture and discussion on a current topic in pharmaceutical sciences. May be repeated for a maximum of 6 units.