PHARMACEUTICAL SCIENCES (RXPS)

Courses

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

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

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

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

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

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

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

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

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

RXPS 591. Biochemical Aspects of the Obesity and Metabolic Syndrome. 2 Units.
Explores biochemical factors related to the obesity epidemic in the United States. Emphasizes the impact of these biochemical factors on currently available pharmacotherapeutic options, as well as the development of new therapies. Focuses particularly on the role of pharmacist-guided lifestyle interventions on the treatment of obesity and metabolic syndrome. Coordinator-moderated seminar/discussion format in which students present in-depth analysis and interpretation of papers from the current scientific literature.
RXPS 651. Principles of Medicinal Chemistry I. 3 Units.
The first in a three-course sequence that focuses on the chemistry of
drug entities. Effects of a drug’s chemistry on its various properties,
such as pharmacology, toxicology, absorption, distribution, metabolism,
excretion, mechanism of action, drug-drug interactions, dosage form
formulation(s), stability, cost, and use.

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

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

RXPS 710. Dietary Supplements. 2 Units.
Introduces the use of 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.