Medicinal Chemistry (MDCH)

Courses

MDCH 412. Pharmaceutical Applications of Genomics and Bioinformatics. 2 hours.
Introduction to genomics and bioinformatics for advanced pharmacy students. Principles of gene expression, DNA sequencing in bacterial and human genomes, with emphasis on diagnostic and therapeutic applications. Course Information: Same as PMMP 412. Prerequisite(s): PHAR 331 or consent of the instructor. For graduate students: one or two semesters of basic molecular biology and/or biochemistry with a grade of B or better.

MDCH 461. Introductory Organic Medicinal Chemistry. 1 hour.
Covers introductory aspects of graduate organic and physical organic chemistry related to medicinal chemistry. Course Information: Credit is not given for MDCH 461 if the student has credit in MDCH 560. Prerequisite(s): One year of undergraduate organic chemistry and consent of the instructor.

MDCH 507. Drug Discovery, Design and Development. 3 hours.
Overview of drug development process from target identification and screening through clinical trials and FDA evaluation. Course Information: Same as BPS 507 and PMPG 507.

MDCH 553. Cancer Biology and Therapeutics. 2 hours.
Fundamentals of cancer biology with emphasis on biological, hormonal and chemotherapeutic drug therapies currently used and in development. Specific treatment approaches to breast, ovarian, prostate and colon cancers will be explored. Course Information: Same as BPS 553 and PMPG 553. Prerequisite(s): Consent of the instructor. Recommended background: Molecular and Cellular Biology.

MDCH 560. Organic Medicinal Chemistry I. 3 hours.
Organic reactions are discussed in terms of their mechanisms and utility in the field of medicinal chemistry, particularly in the synthesis of medicinal agents. Course Information: Prerequisite(s): One year of organic chemistry with laboratory.

MDCH 564. Physical Medicinal Chemistry. 3 hours.
Focuses on kinetics and thermodynamics in biological systems. Applications to drug action will be emphasized. Course Information: Prerequisite(s): One year of physical chemistry.

MDCH 571. Organic Medicinal Chemistry II. 3 hours.
Heterocyclic chemistry foundation for bio-organic mechanisms of enzyme reactions. Enzymes involved in biosynthesis and metabolism, particularly those that are targets for drug action or involved in drug metabolism. Course Information: Prerequisite(s): MDCH 460 and MDCH 561.

MDCH 573. Principles of Stereochemistry. 1 hour.
Principles of molecular structure and stereochemistry for medicinal and natural products chemists focusing on stereocchemical structures rather than synthesis. Course Information: Prerequisite(s): Credit or concurrent registration in MDCH 560 and one year of organic chemistry with lab or consent of the instructor.