Phcy 402: Foundations of BioMolecular Sciences II

School of Pharmacy

This course is the second semester of a two-semester sequence that integrates the underlying principles of medicinal and natural products chemistry, pharmacology, and toxicology required to develop a detailed understanding of disease processes, natural products and natural product-based drug discovery, chemotherapeutic treatment options for infectious disease, drug associated side effects, and related drug and toxicological considerations. This second semester presents an overview of natural product drugs that derive from natural sources, provides detailed coverage of antimicrobial chemotherapy for the treatment of bacterial and fungal infections, describes important aspects of herbal medicine and alternative medical practices, and introduces principles in pharmaceutical and environmental toxicology. This course integrates the following aspects of biomolecular sciences: Basic Biomedical Sciences Molecular Biology/Genetics - Relate the action of antibiotics to processes involved in replication, transcription, and translation of genetic information, describing the basis for selective inhibition of microbial processes over mammalian processes. - Genetic factors in microbial resistance to antibiotics.

Pharmaceutical Sciences Medicinal Chemistry - Physico-chemical properties of drug molecules in relation to drug absorption, distribution, metabolism, and excretion (ADME) of antimicrobial agents.

Chemical basis of antibiotic pharmacology and therapeutics - Structural and chemical features of antimicrobial agents to enhance their effects in otherwise antibiotic resistant microbes.


Pharmacognosy and Alternative and Complementary Treatments - Concepts of crude drugs, semi-purified, and purified natural products - Variability of occurrence of pharmacologically active substances in plants and impact on regulatory aspects of herbal products - Overview of classes of pharmacologically active natural products.

Pharmaceutical Marketing and Management

Related Areas

- Industrial and Physical Pharmacy and Cosmetic Sciences (MS, PhD)
- Medicinal and Pharmaceutical Chemistry
- Natural Products Chemistry and Pharmacognosy (MS, PhD)
- Pharmaceutical Sciences
- Pharmaceutics and Drug Design (MS, PhD)
- Pharmacoconomics/Pharmaceutical Economics (MS, PhD)
- Pharmacy (PharmD - USA - PharmD, BS/BPharm - Canada)
- Pharmacy Administration and Pharmacy Policy and Regulatory Affairs (MS, PhD)
- Pharmacy, Pharmaceutical Sciences, and Administration, Other

3 Credits

Instruction Type(s)

- Lecture: Lecture for Phcy 402

Course Fee(s)

Pharmacy Practice 8

- $10.00

Subject Areas

- Pharmaceutical Marketing and Management

The University of Mississippi is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award certificates and baccalaureate, master's, specialist, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or visit online at www.sacscoc.org for questions about the accreditation.

http://catalog.olemiss.edu/2019/fall/undergraduate/pharmacy/phcy-402