# Phcy 401: Foundations of BioMolecular Sciences I

## SCHOOL OF PHARMACY

This course is the first 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 first semester presents an overview of introduction to the chemical and physical properties of medicinal agents, relationships of structural properties of drugs to pharmacological properties, absorption, distribution and metabolism profiles, chemical stability, mechanism of action, clinically significant drug interactions, rational drug design, and hit-to-lead optimization. This course integrates the following aspects of biomolecular sciences: Pharmaceutical Sciences Medicinal Chemistry  Physicochemical properties of drug molecules in relation to pharmacodynamics and pharmacokinetics  Relationships of structural properties of drugs to pharmacological properties  Chemical stability, mechanisms of action, and clinically significant drug interactions  Rational drug design and hit-to-lead optimization Pharmacology  Mechanisms of action of drugs in various categories  Principles of receptor and ligand pharmacology  Membrane transport

3 Credits

## Prerequisites

- Pre-Requisite: 24 Earned Hours

## Instruction Type(s)

- Lecture: Lecture for Phcy 401

## Subject Areas

- Pharmaceutical Marketing and Management

## Related Areas

- Clinical and Industrial Drug Development (MS, PhD)
- 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)
- Pharmacoeconomics/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

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