

CHEM 314: Drug Design

Drug design and development is a complex interdisciplinary enterprise that draws upon many disciplines in science, engineering, and business. The cost to develop the average FDA-approved drug is estimated to be as much as \$1.5 billion. This course will explore core medicinal chemistry, pharmacology, and molecular biology topics related to drug design and development. Using a case study-focused approach, students will study and present on traditional small molecules, biologically derived larger drugs, and next-generation gene therapies. Topics for discussion include receptor theory, common drug targets, lead molecule discovery and development, pharmacokinetics, ADMET, monoclonal antibody therapies, vaccines, nucleic acid-based drugs, CRISPR, and more.

Units: 3

Prerequisites:

Prerequisite: CHEM 150, CHEM 150L, IBC200, and CHEM 301.