BIOCHEMISTRY (BCHM)

BCHM 420 - PHYSICAL CHEMISTRY FOR BIOSCIENCE
Survey of the principles of physical chemistry that govern molecular structure and chemical reactivity in biochemical systems. Topics include thermodynamics, kinetics, quantum mechanics, computational chemistry and spectroscopic techniques and their application for the study of structure and functioning of biomolecules.
Credits: 3
Course Notes: CHEM 212 with minimum grade of C-, BIOL 301 recommended.

BCHM 444 - BIOINORGANIC CHEMISTRY
Survey of biological molecules that involve metal ions and/or metal-containing cofactors; the interaction and biological significance of metal ions including medicinal applications.
Credits: 3
Course Notes: CHEM 212 with a minimum grade of C-; BIOL 301 recommended.

BCHM 454 - EXPERIMENTAL METHODS IN BIOCHEMISTRY & BIOTECHNOLOGY
Biochemical techniques including enzyme and lipid assays, isolation, and analysis of macromolecules.
Credits: 2
Course Notes: Must have BCHM 355/BCHM 455 or concurrent.

BCHM 455 - BIOCHEMISTRY
Electron transport chain, protein structure, enzyme kinetics, biosynthesis and intermediary metabolism of amino acids, and carbohydrates and lipids. Included in the biotechnology certificate program.
Credits: 3
Course Notes: BIOL 301 strongly recommended.

BCHM 457 - ADVANCED BIOCHEMISTRY
This course covers advanced topics in the chemistry of life and is designed to build upon the fundamental understanding of biochemical topics as presented in introductory biochemistry. The course will focus on protein structure-function relationships and metabolic pathways in human and non-human organisms. Modern biochemical problems and new developments in biochemical techniques will also be explored through primary literature readings and student presentations.
Credits: 3
Course Notes: BCHM 355 with a minimum grade of C.

BCHM 464 - PROTEIN STRUCTURE DETERMINATION
Computer methods for converting electron microscopy of purified proteins into 3D protein structures.
Credits: 3
Course Notes: Prerequisites: BIOL 301 or BCHM 355/BCHM 455, with C or better.

BCHM 485 - THESIS
Independent laboratory research culminating in a written thesis under supervision of a faculty sponsor and thesis committee.
Credits: 1-6

BCHM 485Y - THESIS COMPLETION
Credits: 0
Prerequisites: BCHM 485
Course Notes: Completion of the MS thesis beyond BCHM 485.