

# BIOCHEMISTRY (BCH)

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**BCH-403: Biochemistry (4 Credits)**

**Co-requisite(s):** BCH-403L is required.

**Pre/Co-requisite(s):** CHM-206 is required.

This course provides an introduction to biochemistry. The organizing principles of cellular biochemistry are emphasized. Within this framework the structures, chemistry, and function of proteins, nucleic acids and amino acids, lipids and carbohydrates are presented. Molecular topics such as evolution, protein sequencing, proteomics are also introduced.

*Lab Fee:* \$150.00

**BCH-403L: Biochemistry Lab (0 Credits)**

**Co-requisite(s):** BCH-403 is required.

This course consists of laboratory exercises to give the students experience with fundamental biochemistry and structure and function of biomolecules. Lab exercises to give the students experience with amino acid properties and protein purification along with techniques to examine enzyme kinetics.

**BCH-404: Advanced Biochemistry (4 Credits)**

**Pre-requisite(s):** BCH-403 is required.

**Co-requisite(s):** BCH-404L is required.

The metabolic pathways of carbohydrates, lipids, amino acids and their metabolic controls are presented. The central concepts of genomics, nucleic acid sequencing, the molecular basis of self-assembly, morphogenesis and cellular differentiation are stressed. Emphasis is also given to the important ultra-structural elements of the cell, neurotransmission, hormones, and cell signaling.

*Lab Fee:* \$150.00

**BCH-404L: Advanced Biochemistry Lab (0 Credits)**

**Co-requisite(s):** BCH-404 is required.

The laboratory portion of the course complements and reinforces the lecture through the use of modern techniques in experimental biochemistry. Experiments may include enzymology, protein purification, and gene expression and organization. Methods include spectrophotometry, polymerase chain reaction, DNA cloning, electrophoresis, protein detection by immunoblot, RNA hybridization, and computer analysis of DNA and protein sequence data.

**BCH-410: Pharmacology and Toxicology (3 Credits)**

The fundamentals of how chemicals produce therapeutic and toxic responses are presented. Emphasis is given to the absorption, distribution, metabolism and elimination of drugs from the body and their receptors and interactions. Through case studies and informed debate, students learn the effects of drugs on the human population and the environment. Junior or senior academic standing; Biology major or Neuroscience minor are required.

*Lab Fee:* \$150.00