

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY  
CHM 260 - INTRODUCTORY BIOCHEMISTRY (3 CR.)**

**Course Description**

Explores fundamentals of biological chemistry. Includes study of macromolecules, metabolic pathways, and biochemical genetics. Lecture 3 hours per week.

**General Course Purpose**

This is a one-semester college transfer-level course designed to meet the needs of science majors. CHM 260 is an elective course for science majors in their second year of college study following completion of CHM 111-112 - "College Chemistry I-II" and BIO 101-102 - "General Biology I-II". This course would also benefit the student who is in pre-medical, pre-dental, pre-veterinary, and health technologies programs.

**Prerequisites/Corequisites**

Prerequisites: CHM 112 and satisfactory placement score for ENG 111.

**Course Objectives**

At the completion of this course, the student should be able to:

- Explain the chemical and physical properties of water as they relate to life processes
- Describe the structure and chemistry of carbohydrates, lipids, proteins and nucleic acids
- Define and discuss the significance of protein conformation
- Explain enzyme catalysis, kinetics and regulation
- Recognize the structure and function of biological membranes
- Explain the pathways of carbohydrate metabolism and their regulation
- Describe replication, transcription and translation

**Major Topics**

- Water and pH
- Amino acids and peptides
- Protein structure and function
- Enzyme catalysis, kinetics and regulation
- Lipids and membranes
- Nucleotide and nucleic acid chemistry
- DNA, RNA, replication, transcription and translation
- Carbohydrates
- Bioenergetics
- Carbohydrate metabolism
- Gene regulation
- Recombinant DNA

**Optional Topics**

Complex carbohydrates and glycoproteins