

CHEM 2614 Organic Physiological Chemistry

Catalog Description: Organic chemistry survey basic to the understanding of biological systems and related physiological chemistry. Special emphasis placed upon specific biohazardous materials. Three hours lecture and 3 hours laboratory weekly.

Prerequisite: CHEM 1024, CHEM 1074, or CHEM 1104, with a grade of C or better, or equivalent

Credit hours/ Contact hours/ Load hours: 4 /6 /5

Target Audience/Transferability: This course is required by some Agriculture, Food and Life Science majors but may be accepted as a general education requirement for non-science programs as well. This course may meet the needs of students in health profession programs that require a second semester chemistry course with a biochemistry emphasis. Students should check with the transfer institution and specific departments to confirm transferability of this course.

Student Learning Outcomes: Students completing this course will:

- Distinguish the general classes of organic compounds in terms of functional groups.
- Demonstrate knowledge of nomenclature and basic reactions of organic compounds.
- Differentiate the structure of biochemical molecules and describe their functions in biochemical systems.
- Demonstrate proper techniques in the laboratory by utilizing appropriate instrumentation, collecting data, constructing graphs, interpreting outcomes, and communicating results in a form appropriate for written and/or oral presentations.

Topics:

- An Introduction to Organic Chemistry
- The Saturated Hydrocarbons: Nomenclature and reactions
- The Unsaturated Hydrocarbons: Nomenclature and reactions
- Alcohols, Phenols, Thiols, and Ethers
- Aldehydes and Ketones
- Carboxylic Acids and Derivatives
- Amines and Amides
- Carbohydrates
- Lipids and Their Functions in Biochemical Systems
- Protein Structure and Function
- Enzymes
- Nucleic Acids
- Metabolism

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Forms of Assessment: Variable methods which may include, but are not limited to, exams and laboratory activities.