CHEM 1125

Division: Natural Science and Mathematics
Department: Chemistry
Course: CHEM 1125
Title: Elementary Organic/Biochemistry Laboratory
Catalog Description:

This is an organic and biochemistry laboratory which reinforces the fundamental facts, theories, and laws of chemistry through laboratory experiences. It is designed for students in family and consumer science, nursing, physical therapy, some areas of biology, forestry and agriculture.

General Education Requirements: Physical Science
Semesters Offered: Spring
Credit/Time Requirement: Credit: 1; Lecture: 0; Lab: 2
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: CHEM 1110 and CHEM 1115 (both successfully completed)

Corequisites: CHEM 1120

Justification:

This course is a practical application of organic and biochemistry principles taught in CHEM 1120. It reinforces principles emphasized in organic and biochemistry. It is a service course for allied health sciences, forestry, agriculture, etc. as required by their major departments. This laboratory course may also fulfill part of the Physical Science General Education Option.

Student Learning Outcomes:

Students will be able to see application of principles taught in organic and biochemistry involving application of functional group reactions, organic synthesis, properties of carbohydrates, lipids, carbohydrates, and enzymes. At the conclusion of this course students should have sufficient knowledge of chemical principles and laboratory techniques to be able to meet requirements in their major department.

Content:

Chemistry 1125 is an introduction to Organic and Biochemistry Laboratory. Experiments will include some or a ll of the following: Laboratory Safety, Alkane Chemistry, Alcohol Reactions, Synthesis of Esters, Carbonyl Rea ctions, Synthesis of Aspirin, Carbohydrates Lab, Lipids, Amino Acids, Enzymes, and others deemed appropriate by the instructor.

General Education Outcomes:

7) Apply scientific reasoning to a variety of contexts.
Students will be able to approach problems logically and come to a solution based on chemical principles. This will include their ability to apply nomenclature rules to compounds with several functional groups, to predict major and minor products of organic reactions, and to solve multi-step organic synthesis problems. They will also be able to observe and predict reactions of carbohydrates, lipids, proteins, and other chemical compound. T heir success will be evaluated by examining their written work on pre-lab assignments and laboratory data sheets.

Key Performance Indicators:

Students will be assessed on pre-lab assignments and laboratory data sheets. Grades will be based on the fo llowing approximate scale of percentages:
LABS 60 %

PRE-LABS 25%

LAB FINAL 15%

Representative Text and/or Supplies:
Most laboratory experiments will be written in-house. A copy of each laboratory experiment will be available on the class Website.

Optimum Class Size: 20
Maximum Class Size: 24

Signatures:

I hereby submit this course syllabus:

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Dan Black, EdD, Associate Professor

I hereby find this course consistent with the goals and resources of the Chemistry Department:

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Mark Wathen, PhD, Assistant Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

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Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)