



## CHEM 1125

**Division:** Natural Science and Mathematics

**Department:** Chemistry

**Course:** CHEM 1125

**Title:** Organic/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 home economics, 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 1130 (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 that includes the following major laboratory experiments: Alkane Chemistry (review), Laboratory Safety Organic Chemistry, Alcohol Reactions, Carbonyl Reactions (I), Carbonyl Reactions (II), Synthesis of Aspirin, Carbohydrates Lab (I), Carbohydrates Lab (II), Lipids, Amino Acids (I), Amino Acids (II), Enzymes (I), Enzymes (II), Biochemical Research Topics, and Review / Lab Final.

**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 enzymes.

**Key Performance Indicators:**

Students will be assessed on a weekly basis through in-laboratory assignments and occasional quizzes. Homework will be assigned on a regular basis to give students the opportunity to check their own progress.

**GRADING POLICIES:**

LABS (about 12) 100 %

QUIZZES (occasional, as needed) 10-15% of lab grade

Written LAB Final (final counts as two labs)

**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:** 16

**Maximum Class Size:** 22

**Signatures:**

I hereby submit this course syllabus:

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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)