



## CHEM 2320

**Division:** Natural Science and Mathematics

**Department:** Chemistry

**Course:** CHEM 2320

**Title:** Organic Chemistry II

**Catalog Description:**

This is the second course in a two semester sequence of Organic Chemistry. Study includes functional group approach devoted to mechanisms and application of principles. This course is designed for chemistry, chemical engineering, pre-medical, pre-pharmacy, pre-veterinary, pre-dental, medical technology, and many biological and agriculture majors. This is a standard pre-professional course as commonly taught in the sophomore and junior years.

**General Education Requirements:** N/A

**Semesters Offered:** Spring

**Credit/Time Requirement:** Credit: 4; Lecture: 4; Lab: 0

**Clock/Hour Requirements:** 0

**Offered for Non-Credit:** No

**Prerequisites:** CHEM 2310 and CHEM 2315 (formerly 2330)

**Corequisites:** CHEM 2325

**Justification:**

This course is offered by Chemistry departments at most institutions in the state and will transfer to all of them. It is required of most science related majors in the sophomore year. It will provide students majoring in Chemistry or other pre-professional areas a detailed course in organic structure, synthesis, and reaction mechanisms. Although this course is sometimes considered an upper division course at transfer institutions, for Chemistry Majors and pre-professional students it is expected to be taken in the the sophomore year.

**Student Learning Outcomes:**

Students will know basic organic functional groups, organic nomenclature and basic reactions and mechanisms. They will have a working knowledge of chemical reactivity, physical properties, preparation, nomenclature, and synthesis of organic compounds. Students will understand biochemistry at a basic level.

**Content:**

Chemistry 2320 is the second semester of a full year Organic Chemistry course. It includes the following major topics: Aldehydes and Ketones, Carboxylic Acids, Acid Derivatives, Enolate and Enamines, Aromatics I and II, Amines, Dienes, Carbohydrates, Lipids, Metabolism, Proteins, and Nucleic Acids.

**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, to solve multi-step organic synthesis problems, and to relate metabolic pathways. The successful achievement of this outcome will be illustrated in the written answers to test and quiz questions and the level of achievement will be determined by the grade they receive on these assignments.

**Key Performance Indicators:**

Students will be assessed through quizzes (5%), tests (75%), homework (10%), and other assignments (10%). These percentages are approximate.

**Representative Text and/or Supplies:**

Bruice, Organic Chemistry, 5th Edition, Prentice Hall Publishing, Philadelphia, Pa., current edition.

**Optimum Class Size:** 30

**Maximum Class Size:** 46

**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)