

CHEM 542 Organic Chemistry II (Winter 2013-14)

Course Objectives: Individuals who successfully complete this course will be able to:

1. Understand the basic concepts of organic stereochemistry
2. Apply stereochemical logic to analyze structure, geometry and reactivity of organic and biological molecules.

Course Prerequisite: Undergraduate Organic Chemistry III. (CHEM 243)

Course Description: This course covers static and dynamic stereochemistry, conformational theory, stereoelectronic theory, relationships between structure and reactivity in organic reactions, and applications to asymmetric synthesis, physical measurements, and biochemical mechanisms.

Lectures: 3 credits. Mondays, 7:30 pm to 8:50 pm, PISB 107; Wednesdays, 6 pm to 7:20 pm, Stratton 101. No class on January 20 (university holiday).

Instructor: Professor Jun Xi. Office: Disque 218. Telephone: 215-895-2648.
e-mail: jx35@drexel.edu. Office hours: open door / by appointment.

Textbook: “*Stereochemistry of Organic Compounds*” by Ernest L. Eliel, Samuel H. Wilen
The following books are also recommended as reference books. Additional reading will also be suggested during the term.

1. “*Advanced Organic Chemistry*” (electronic resource available online from Drexel Library)
Fifth edition. Part A: Structure and Mechanisms
Francis A. Carey and Richard J. Sundberg

Chapter 1 Chemical Bonding and Molecular Structure

Topic 1.1. The Origin of the Rotational (Torsional) Barrier in Ethane and Other Small Molecules

Topic 1.2. Heteroatom Hyperconjugation in Acyclic Molecules

Topic 1.3. Bonding in Cyclopropane and Other Small Ring Compounds

Chapter 2. Stereochemistry, Conformation, and Stereoselectivity

2. “*Organic Stereochemistry*” (Hagerty Library on reserve)
Michael J.T. Robinson

3. “*Basic Organic Stereochemistry*” (Hagerty Library on reserve)
Ernest L. Eliel, Samuel H. Wilen, Michael P. Doyle

Exams and Grading: Two mid-term exams with each worth 100 points (25% each). The final exam is a take-home, cumulative exam that is worth 200 points (50%). The tentative dates for the mid-term exams are *Monday January 27* and *Monday February 24*.

Homework Assignments: They are intended for self-study and are not part of final grades.

Study Tips: Review the lecture notes, read the textbook/reference materials, and do the practice problems (homework assignments and other sources that are available to you through online and library).

Academic Honesty: It is expected that students will maintain the highest standards of academic honesty.