

Chemistry 25a Organic Chemistry I

Summer 2018 Syllabus

Brandeis University

Lecturer

Dr. Kristen Mascall (Email: kmascall@brandeis.edu)
Office: SSC 00-08B (Telephone: 6-2545)

Course description

Organic chemistry is the fascinating study of carbon-containing compounds. CHEM 25A is the first module of a two-semester course that introduces you to fundamental topics of organic chemistry such as structure, function and reactivity of organic molecules. In this course we will explore how and why organic reactions occur. The relevance of organic chemistry to biological systems, medicine, environmental science, and industry will be emphasized through current literature examples. This course meets the first half of the organic chemistry requirement for chemistry, biology, premedical, and pre-dental majors when taken in conjunction with the laboratory course CHEM 29A.

Prerequisite: A satisfactory grade (C- or better) in CHEM 11B or CHEM 15B or the equivalent.

Learning goals and objectives

In CHEM 25A, emphasis is placed on understanding fundamental concepts and applying to problems, rather than memorizing. You will develop problem-solving skills and learn how to think logically through questions to derive an answer. Your greatest benefit in learning the material will come from practicing many problems continually. By the end of this course, you should (1) understand the structures and notations of organic compounds; (2) know how to write reasonable reaction mechanisms; and (3) be familiar with the reactivity of certain functional groups.

Class times and office hours

Lectures: Mon, Tues, Thurs, Fri 8:30 – 10:50 am.

Office hours: Mon, Tues, Thurs, Fri 11:00 am – 12:00 pm in SSC 00-08B.

Examinations and quizzes will be given during lecture times.

Required materials

- *Organic Chemistry, 6th ed.* by Marc Loudon and Jim Parise, Roberts & Company, 2016. ISBN 978-1-936221-34-9, and accompanying *Study guide and solutions manual*.
- Molecular Model Kit: Darling organic and inorganic molecular models ISBN 978-09648837-1-0 (or any other organic chemistry model kit)
- Course handouts and supplemental material will be available on LATTE.

Academic credit

Grades will be distributed as follows:

- | | |
|----------------------------------|-----|
| – Four quizzes | 20% |
| – Two examinations | 40% |
| – Final examination (cumulative) | 40% |

Course grades will be determined based on the class average and student distributions around the average.

Examinations and quizzes

Examinations and quizzes will be held during lecture times.

- Quizzes will be given every Friday (June 8th, 15th, 22nd, 29th)
- Exam 1: Monday June 18th; Exam 2: Monday July 2nd.
- Final exam: Summer Session I final exam period is July 5 – 6. The CHEM 25A final exam date and time will be set by the Summer School Office.

Makeup exams and quizzes

There will be NO makeup examinations or quizzes. If you arrive late to an exam or quiz, no additional time will be given. If you miss an exam or quiz with a documented medical excuse, your grade will be based on the average of the other 3 quizzes and/or 1 exam and the final.

Regrades

You may request that an exam or quiz be regraded if you suspect errors in grading. The graded document, along with a note explaining the nature of the grading dispute, must be submitted to Dr. Mascall *no later than two days after the graded document is returned*. Please note that the entire document will be regraded.

Homework

You are expected to be reading the chapter before or while we cover it. Practice problems from the textbook will be suggested for each chapter, with the answers available in the solutions manual. Homework will not be collected or graded; it is in your best interest to practice as many questions as possible.

Use of electronics

The use of cellular phones and laptops during lectures and exams is prohibited. The use of tablets is allowed during lectures for taking notes, but is prohibited during exams and quizzes. If you require special accommodations for electronic use not addressed above, please see me.

Disabilities

If you are a student with a documented disability on record at Brandeis University and wish to have a reasonable accommodation made for you in this class, please present your letter of accommodation to Dr. Mascall as soon as possible. Please note that accommodations cannot be granted retroactively.

Academic Integrity

You are expected to be familiar with, and to follow, the University's policies on academic integrity. Please consult the Brandeis University Handbook on Rights and Responsibilities for all policies and procedures (pay particular attention to section 4). All policies related to academic integrity apply to in-class and take home assignments, exams and quizzes. Any work submitted by a student for academic credit will be the student's own work. Students may only collaborate on assignments with permission from the instructor. Allegations of alleged academic dishonesty will be reported to the Brandeis Student Rights and Community Standards Office. A first offense may result in zero assignment credit for all involved, and a repeat offense may result in suspension or dismissal from the University.

Course schedule

| | Mon | Tues | Wed | Thurs | Fri | Tentative topics* |
|-----------------|------------------|--------|------------|------------------------------------|--|--|
| June | 4 | 5 | 6 | 7 | 8 | Ch. 1: Chemical bonding and chemical structure Ch. 2: Alkanes Ch. 7.1 – 7.6: Cycloalkanes |
| | Lec 1 | Lec 2 | | Lec 3 | Quiz 1 Lec 4 | |
| | 11 | 12 | 13 | 14 | 15 | Ch. 3: Acids and bases Ch. 4: Introduction to alkenes Ch. 5: Addition reactions of alkenes |
| | Lec 5 | Lec 6 | | Lec 7 | Quiz 2 Lec 8 | |
| | 18 | 19 | 20 | 21 | 22 | Ch. 5: Addition reactions of alkenes Ch. 6: Principles of stereochemistry Ch. 7.7 – 7.9: Stereochemistry of chemical reactions |
| Exam 1 Lec 9 | Lec 10 | | Lec 11 | Quiz 3 Lec 12 | | |
| 25 | 26 | 27 | 28 | 29 | Ch. 14: Chemistry of alkynes Ch. 9: Chemistry of alkyl halides Ch. 10: Chemistry of alcohols | |
| Lec 13 | Lec 14 | | Lec 15 | Quiz 4 Lec 16 | | |
| July | 2 | 3 | 4 | 5 | 6 | Ch. 10: Chemistry of alcohols Ch. 11: Chemistry of ethers, epoxides |
| | Exam 2 Lec 17 | Lec 18 | No Classes | Summer Session I Final exam period | | |

**The tentative topics list is designed to give you an idea of the order and timeline of coverage of course material. This list is subject to change and will be dependent somewhat on student response. Less time will be spent on topics that are well understood by the class, and more time will be spent on topics that the class is struggling with.*