Chemistry 2211: Organic Chemistry I

Course Outline, Fall 2005

Contact Information

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Office: CB-4038 Office hours: Monday to Friday, 10:00 - 11:00
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Lab Instructors: Jarrett Sylvestre (CB-2049A, 343-8540, jarrett_sylvestre@yahoo.ca)
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Lectures: Tuesday and Thursday, 08:30 - 10:00. **Location**: UC1017

Layout: Each lecture will be part class/part tutorial. Students will be expected to do a reading and a few exercises *before each class*. Students may wish to bring their text to class.

Prerequisite: Chemistry 1130 (or Chemistry 1101)
Students will particularly need to know Lewis structures and understand molecular structure and bonding theories (VSEPR, etc.). For a review of these concepts, see your text for CHEM 1101. There is also an introduction in Chapter 1 of Bruice.

Texts - BOTH are *required* for the course.

1. Organic Chemistry, 4th Edition. Paula Bruice, Prentice Hall (Pearson). This is packaged with a solutions manual and a passcode for the online quiz system.
2. Chemistry 2211 Laboratory Manual, Department of Chemistry, Lakehead University, 2005 version.

(3. There are also some molecular model kits - these will come in handy throughout the course; chemistry majors are likely to get more use out of them in other courses)

Laboratories: F 11:30-14:30 & 14:30-17:30; M 14:30-17:30; T 14:30-17:30.
Location: CB 2050/2051 (Experiments run from Friday to the next Tuesday)

Note: CHECK-IN STARTS ON SEPT. 9 (FRI.). YOU WILL NOT BE ALLOWED TO START EXPERIMENTS UNTIL YOU HAVE DONE THE CHECK-IN!!! Consult Lab manual for due dates for lab reports. Laboratory exemptions may be available for those who have previously taken 2211. Apply for an exemption during the first week (in class) to determine eligibility.

Overview

The key to organic chemistry lies in keeping up with the work, as each section of the course will build on previous sections. While this is true of all chemistry courses, it is much more evident in organic chemistry. Therefore, students will be responsible for all course material covered up to that point for each assignment, midterm, and exam.

Marking Scheme

35%	two term tests (Thursday October 6 for 15%, Tuesday November 8 for 20%)
40%	final exam (scheduled by registrar)
20%	laboratory (as broken down in manual)
5%	web exercises (assigned throughout term) http://www.prenhall.com/aceorganic (note: Course ID is 521)

Course Outline

Chapters are from Bruice, 4th Edition. While not specified, each section will contain nomenclature rules for the compounds discussed.

1. Review: functional groups, acids and bases, language/conventions of organic chemistry, naming simple alkanes. Chapters 1. (1.5 classes)
2. Alkanes: reactions, stereochemistry. Chapters 3, 4. (3 classes)
3. Alkenes and alkynes: reactions and stereochemistry. Chapters 6 (sections 1-10), 7 (sections 1-3, 5, 7, 8, 10), and 8 (sections 1-3, 6, 8-10). (3 classes)
4. Stereochemistry. Chapter 9. (2 classes)
5. Alkyl halides: structure and reactivity; reaction mechanisms. Chapters 10 (sections 1-7), 11. (2 classes)
6. Alcohols and ethers. Chapters 17 (sections 1-7, 12), 18 (1-5, 11). (2 classes)
7. Carbonyl compounds: aldehydes and ketones; nucleophilic addition; redox reactions. Chapter 19 (sections 1-12, 16), 20 (sections 1, 2, 6-9). (2 classes)
8. Spectroscopy. Chapters 12, 13, 14. (4 classes)

Important Dates

Midterm 1	Thursday, October 6 (material to the end of class # 8) 15%
Midterm 2	Tuesday, November 8 (material to the end of class #17 cumulative) 20%
Exam	Scheduled by registrar (on all course material) 40%