

Chemistry 2E03

Course Outline

Course: Introduction to Organic Chemistry

Location: JHE 264, Tuesdays, Wednesdays, and Fridays, 9:30-10:20 am

Tutorials: Tut 01 – W 13:30-14:20 ABB 270

Tut 02 – M 09:30-10:20 ABB 162

Tut 03 – T 10:30-11:20 ABB 270

Tut 04 – M 10:30-11:20 ABB 270

(tutorials are not mandatory, but recommended)

Instructor: Dr. Alex Adronov (Office ABB 419; email: adronov@mcmaster.ca)

Office Hours: Tuesdays and Wednesdays, 10:30 am -11:30 pm, office hours are subject to change – any changes will be announced via WebCT.

Textbook: Organic Chemistry by Solomons (Wiley) – bundled with solutions manual and molecular model kit. We will cover Chapters 1 to 8:

Chapter	Topic
1	Carbon compounds, chemical bonds, orbitals
2	Hydrocarbons, functional groups
3	Acid-base reactions
4	Nomenclature, conformational analysis
5	Stereochemistry
6	Nucleophilic substitution and elimination reactions
7	Alkenes, alkynes, and alkyl halides
8	Addition reactions

Assignments: There will be a total of 4 assignments handed out throughout the semester. They will be due two weeks from the day they are handed out, **at the beginning of class**. **Late assignments will not be accepted.** The top 3 assignments will be counted.

Tests: There will be 2 tests in the course, during class. They will be scheduled for October 5th and November 2nd, 50 minutes each.

Final Exam: The final exam (3 hr) will cover material from the entire course.

Mark Breakdown:

Assignments: 15%

Tests: 40% (20% each)

Final Exam: 45%

Notes: Any assignments, tests or exams written in pencil will not be eligible for re-grading.

Prerequisite: Chem 1AA3. Many concepts from 1st year chemistry, especially the organic chemistry sections, will be considered as assumed knowledge.

Website: Information on the course (including class notes, assignments, solutions, etc.) will be posted on WebCT. <https://webct.mcmaster.ca/>. A discussion board will also be available for you to post questions and answer questions from your peers. As well, an email icon will be provided for you to email questions to the instructor, which will be answered on Tuesdays and Thursdays.

Reserve Material: the course text, as well as a number of other organic chemistry texts are available in Thode Library at the reserve desk.

Getting Help: if you need extra help with the course, feel free to contact your tutorial TAs or the course instructor during office hours. We also have available an organic chemistry help room, located in ABB-216. Here you will find tutors who are dedicated to helping you with your questions, available Monday – Friday.

Academic Dishonesty:

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of a academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/senate/academic/ac_integrity.htm

The following illustrates only three forms of academic dishonesty:

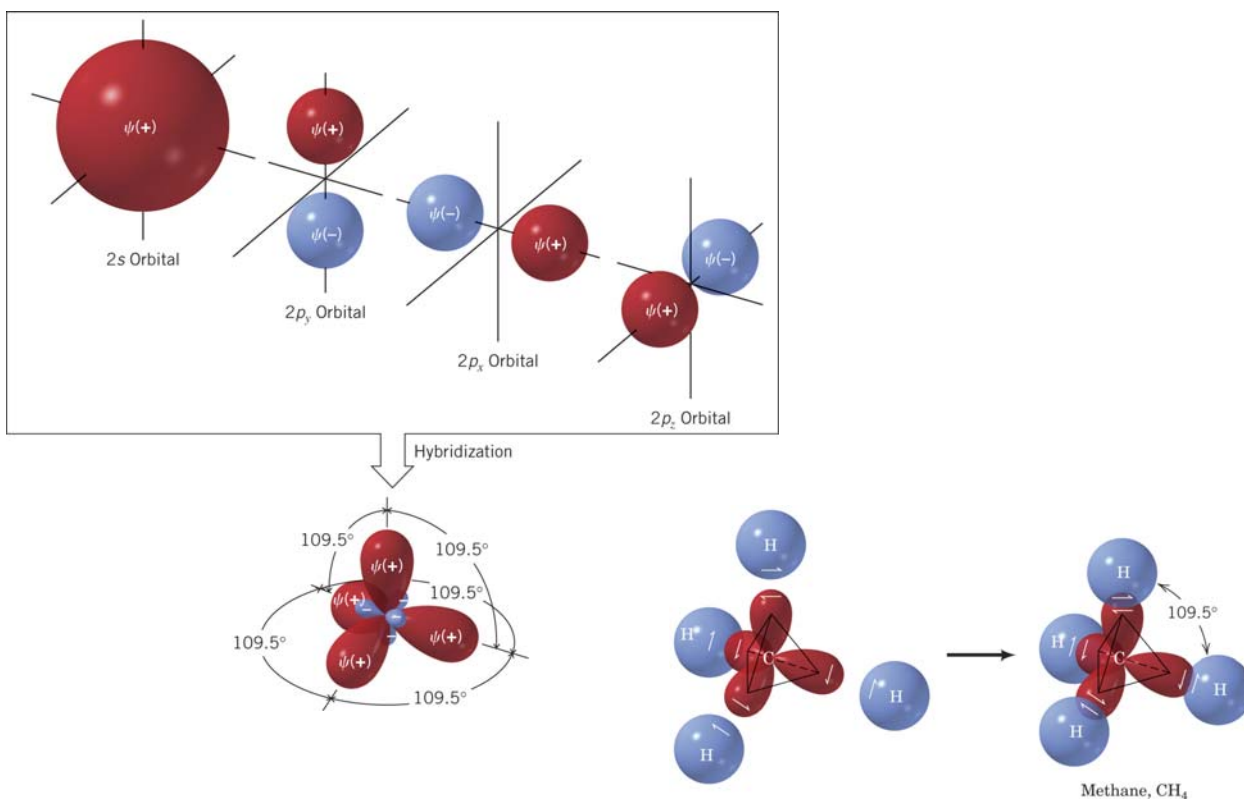
1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids, tests, and examinations.

Course Description

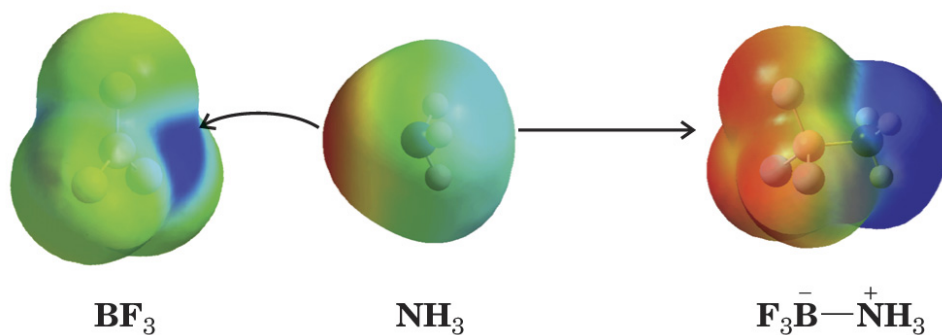
Organic chemistry is of vital importance to the petrochemical, pharmaceutical, polymer and textile industries, where a prime concern is the synthesis of new organic molecules and polymers. Knowledge of the structure, functionality, and reactivity of organic molecules is critical for the understanding of numerous and disparate phenomena, from biological and biochemical processes (enzyme-substrate interactions), to medicine (pharmaceuticals), to the properties of materials (polymers). This course covers the basic and fundamental principles of organic chemistry, allowing the student to begin understanding the language of organic chemists. A broad overview of the properties and characteristics of organic molecules is provided, and several key reactions and reaction mechanisms are discussed.

Some of the topics covered include (all Images taken from the course textbook Organic Chemistry by Solomons & Fryhle (8th Edition, Wiley, 2005):

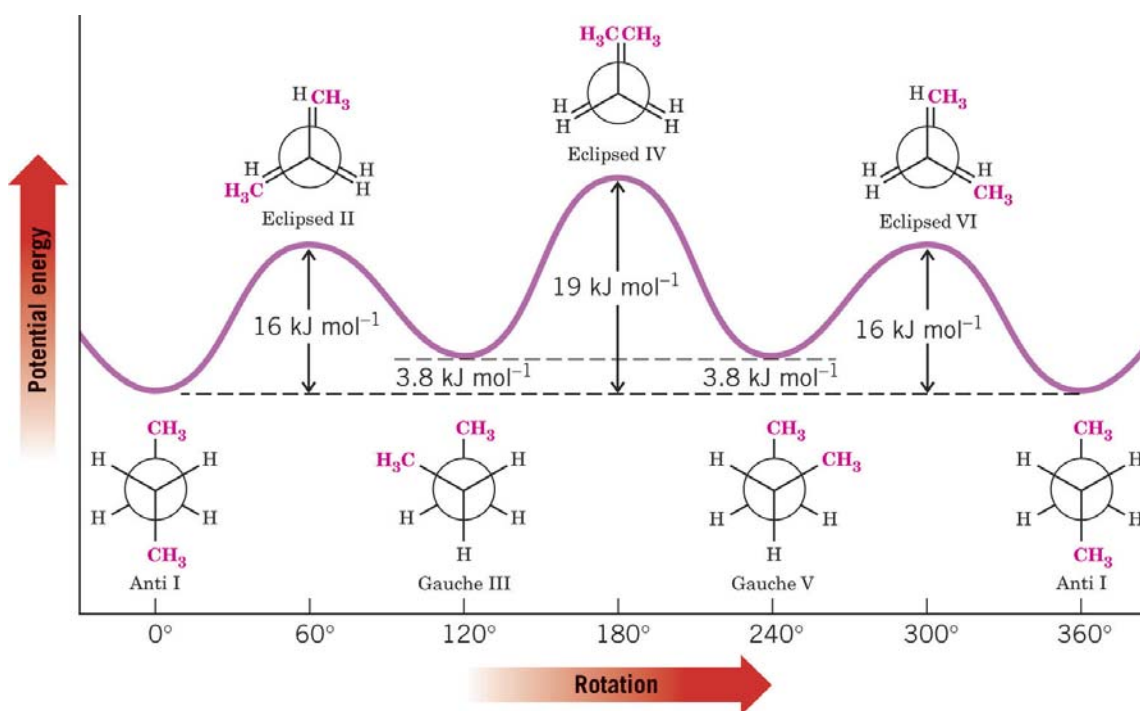
Bonding and Hybridization



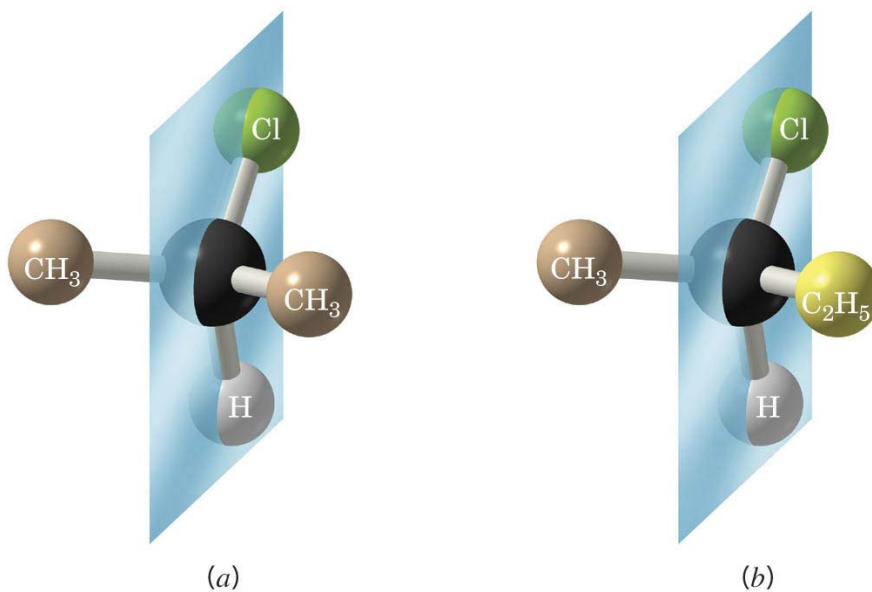
Understanding Reactivity



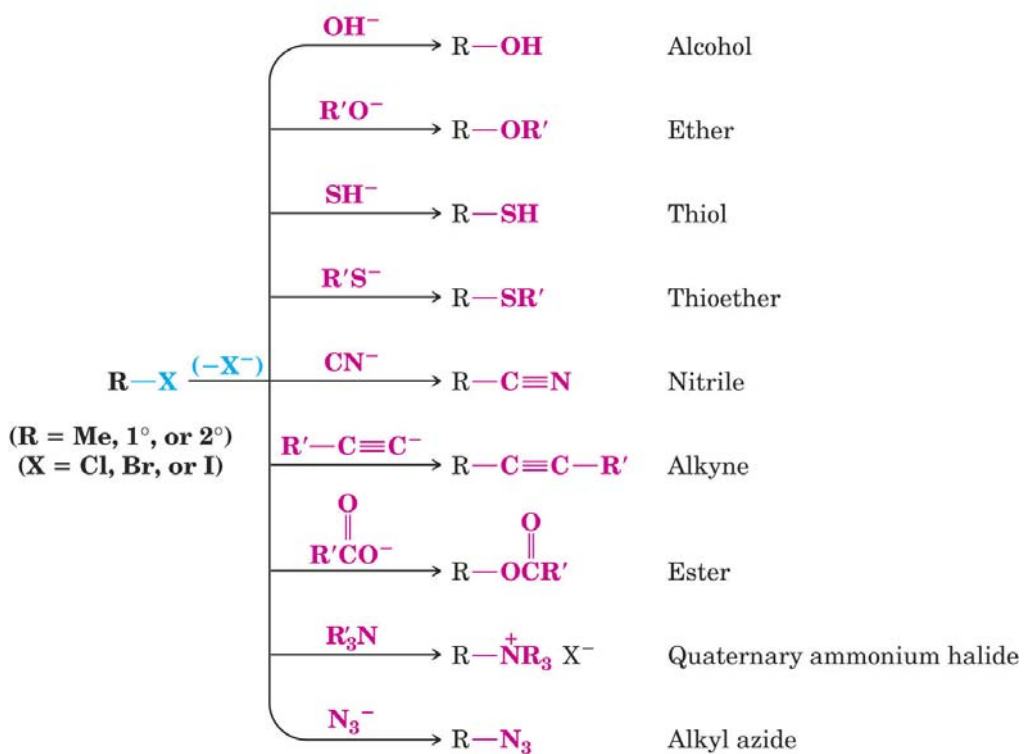
Conformational Analysis



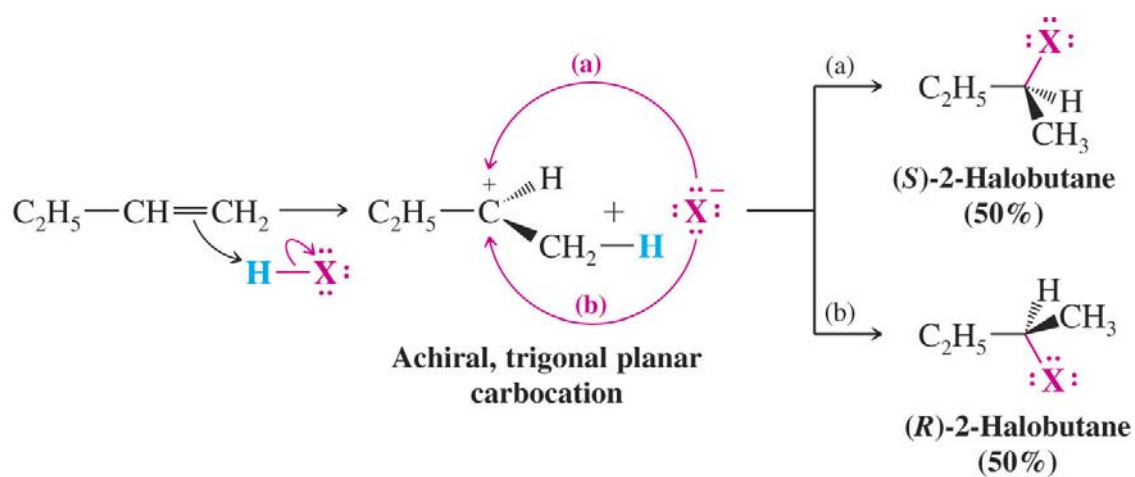
Stereochemistry



Reactions and Synthesis



Mechanisms



1-Butene donates a pair of electrons to the proton of HX to form an achiral carbocation.

The carbocation reacts with the halide ion at equal rates by path (a) or (b) to form the enantiomers as a racemate.