CHEM 3053 Section 003
Organic Chemistry I (Honors) Biological Emphasis

Prof: Robyn Biggs
Office: 1770 SLSRC
Tel: 405-325-3862
Email: robynbiggs@ou.edu
Web Site: http://learn.ou.edu/ under CHEM 3053 Sec 003

Office Hours: Mondays 2:30pm-4:00pm in PHSC 308A
Wednesdays 2:30pm-4:00pm in PHSC 308A
(If you can’t make it during these hours, please make an appointment by e-mail)

Lectures: Mondays: 1:30pm-2:20pm PHSC 356
Wednesdays: 1:30pm-2:20pm PHSC 356
Fridays: 1:30pm-2:20pm PHSC 356

Action Center Meeting: Thursdays 6:30pm-8:30pm Wagner Hall 140/145

Assessment:
Quiz 1: Friday, Sept. 4. (In Class) 5%
Quiz 2: Friday, Oct. 2. (In Class) 5%
Quiz 3: Friday, Oct. 30. (In Class) 5%
Quiz 4: Friday, Dec. 4. (In Class) 5%
Mid Term 1: Friday Sept. 18. (In Class) 10% - 15%
Mid Term 2: Friday Oct. 16 (In Class) 10% - 15%
Mid Term 3: Friday Nov. 13. (In Class) 10% - 15%
Final Exam: Fri Dec. 18. (8:00am-10:00am) 35% - 50%

Total: 100%

Bonus Assignment +4 %
Bonus: + 1 %

No make-up quizzes will be given. A grade of 0 will be assigned to missed quizzes without documentation of a reasonable excuse for the absence. Make-up midterms will be allowed only upon providing documentation of a reasonable excuse for the absence. If no documentation is provided, a grade of 0 will be assigned.


Molecular models are highly recommended. Darling Molecular Models are best. These are available at the bookstore.
Course Outline

Nomenclature: You are responsible for naming chains up to 12 carbons long for all classes of compound covered (alkanes, alkenes, alkynes, alcohols, thiols, halides, amines, aldehydes, ketones).

Part A: Structure
1) Organic Molecular structure
   a. “Organic” periodic table
   b. Electronegativity and periodic trends
   c. Covalent bonds
   d. Molecular Representations: Lewis Structures
   e. Molecular Orbital Theory
   f. Molecular Structure and Bulk Properties
   g. Molecular Representations: Line Structures
   h. Resonance

2) Alkanes
   a. Conformational Analysis-Acyclic Alkanes
   b. Conformational Analysis-Cyclic Alkanes
   c. Stereochemistry
   d. Fischer projections
   e. Resolution of enantiomers

Part B: Simple Reactivity
1) Displacement reactions
   a. Acid/base reactions
   b. Reaction co-ordinate diagrams
   c. $S_N2$ reactions
   d. $S_N1$ reactions

2) Elimination reactions
   a. E1 reactions
   b. E2 reactions

Part C: Functional groups and Reactivity
1) Additions to Alkenes
   a. Hydration reactions
   b. Halogenation reactions
   c. Radical reactions
   d. Halohydrin formation
   e. Dihydroxylation reactions
   f. Epoxide formation
   g. Epoxide opening
   h. Hydrogenation
   i. Cleavage reactions
   j. Synthesis and Retrosynthetic Analysis
2) Synthesis of Alcohols
   a. Synthesis by reduction
   b. Synthesis by Grignard reaction

3) Ethers
   a. Properties
   b. Synthesis
   c. Cleavage

Additional Information

Academic Misconduct: Information on the University of Oklahoma’s policies toward academic misconduct can be found at http://integrity.ou.edu/students_guide.html.

Special Accommodations: Students requiring accommodations in this course are to be registered with the Disability Resource Center prior to receiving accommodations. Information for the Disability Resource Center can be found at: https://www.ou.edu/content/drc/home/students/accommodations.html.

Behavior: Information on the University of Oklahoma’s policies toward student conduct can be found at http://judicial.ou.edu/.