CHEM 3053 Section 001
Organic Chemistry I Biological Emphasis

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Office Hours: Mondays 10:30am-11:30am in PHSC 308A
Wednesdays 10:30am-11:30am in PHSC 308A
(If you can’t make it during these hours, please make an appointment by e-mail)

Lectures: Mondays: 9:30am-10:20am PHSC 201
Wednesdays: 9:30am-10:20am PHSC 201
Fridays: 9:30am-10:20am PHSC 201

Action Center Meeting: Wednesdays 6:30pm-8:30pm in Wagner Hall 135/140

Assessment:
Mid Term 1: Friday Sept. 27. (In Class) 20% - 30%
Mid Term 2: Friday Nov. 8. (In Class) 20% - 30%
Final Exam: Wed. Dec. 11. (8am-10am) 40% - 60%
Total: 100%
Bonus: + 1%


Molecular models are highly recommended. HGS Molecular Structure Models are the most common. 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](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](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/.