CHEM 3153 Section 001
Organic Chemistry II Biological Emphasis

Prof: Robyn Biggs
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Web Site: http://learn.ou.edu/ under CHEM 3153 Sec 001

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: 9:30am-10:20am Dale Hall 103
Wednesdays: 9:30am-10:20am Dale Hall 103
Fridays: 9:30am-10:20am Dale Hall 103

Action Center Meeting: Tuesdays: 4:30pm-6:30pm Wagner 135

Assessment:
Quiz 1: Friday, Feb. 5. (In Class) 5%
Quiz 2: Friday, Mar. 4. (In Class) 5%
Quiz 3: Friday, Apr. 8. (In Class) 5%
Assignment: Friday, Apr. 29. (In Class) 5%
Mid Term 1: Friday Feb. 19. (In Class) 10% - 15%
Mid Term 2: Friday Mar. 25. (In Class) 10% - 15%
Mid Term 3: Friday Apr. 22. (In Class) 10% - 15%
Final Exam: Wednesday May. 11. (8:00am-10:00am) 35% - 50%

Total: 100%

Clicker Bonus + 4 %
Free Bonus: + 1 %

Missing a quiz or midterm:

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. A missed quiz with documentation of a reasonable excuse will be dropped from the final grade, and the other quiz values will be increased to make a total of 15% for the quiz component of the course. 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. Make up midterms take place in PHSC 308A on the Tuesday morning following the midterm. You are responsible for setting a time to take your make-up midterm by sending an email to robynbiggs@ou.edu.

Errors in grading/points total on a midterm:

Re-grade requests will be allowed for potential errors in grading, according to the marking scheme for that midterm. In order to submit such a request, you must write the question(s) you would like to be re-considered for points on the top right hand corner of the first page of the midterm. If there is an addition error, simply write “addition error” in the top right hand corner of the first page of the midterm. Re-grade requests are due in class no later than one week after the midterm is handed back. When submitting a re-grade request, you must not alter the way you answered the question during the midterm in any way. Altering answers for a re-grade request is considered as academic misconduct, and if found guilty, is punishable by a grade of F in the course.

This syllabus is subject to change at any point throughout the semester. Reasonable notice will be given for any changes made.
Clicker Bonus:

Correct responses to clicker questions will count as 1 point for each question. The bonus percentage will be calculated by taking the best 80% of your responses. This way, if you have to miss a few lectures for valid reasons, you will not be at a disadvantage for the clicker bonus.


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

Course Outline

**Part A: Conjugated \(\pi\)-Nucleophiles**

1) Conjugated Dienes
   a. Stability
   b. Molecular Orbital Theory Representation
   c. Additions to conjugated dienes
   d. Cycloaddition Reactions: Diels-Alder Cycloaddition

2) Aromatic Compounds
   a. Nomenclature
   b. Structure and Stability
   c. Criteria for Aromaticity
   d. Reactions at the Benzylic Position
   e. Reduction of Aromatic Compounds
   f. Electrophilic Aromatic Substitution (EAS) Reactions
   g. Synthesis

**Part B: \(\pi\)-Electrophiles**

1) \(\pi\)-Electrophiles containing no leaving group in tetrahedral intermediate
   a. Nucleophilic additions
   b. Synthesis

2) \(\pi\)-Electrophiles containing a leaving group in the tetrahedral intermediate
   a. Carboxylic acids and derivatives
   b. Mechanisms under acidic conditions
   c. Mechanisms under neutral conditions
   d. Mechanisms under basic conditions
   e. Mechanisms under organometallic conditions
   f. Mechanisms involving two \(\pi\)-electrophiles

3) \(\pi\)-Electrophiles containing a hidden leaving group in the tetrahedral intermediate
   a. Acetals and Thioacetals
   b. Imines
   c. Enamines

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Part C: Assisted π-Nucleophiles
1) Enols and Enolates
   a. Formation
   b. Halogenation
   c. Aldol Reactions
   d. Claisen Condensations
   e. Alkylation
   f. Conjugate Additions
   g. Synthesis

Part D: Biological Chemistry
1) Carbohydrate Chemistry
   a. Classification
   b. Reactions

2) Amino Acids, Peptides, and Proteins
   a. Structure and Properties
   b. Synthesis

3) Lipids
   a. Waxes
   b. Triglycerides
   c. Phospholipids
   d. Steroids
   e. Prostaglandins
   f. Terpenes

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/.

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