CHEM 3153 Section 001
Organic Chemistry II Biological Emphasis

Prof: Robyn Biggs
Office: 1770 SLSRC and PHSC 308A
Tel: 405-325-3862
Email: robynbiggs@ou.edu
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 PHSC 201
Wednesdays: 9:30am-10:20am PHSC 201
Fridays: 9:30am-10:20am PHSC 201

Action Center Meeting: TBD

Assessment:

<table>
<thead>
<tr>
<th>Quiz</th>
<th>Date</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz 1</td>
<td>Friday, Jan. 23. (In Class)</td>
<td>5%</td>
</tr>
<tr>
<td>Quiz 2</td>
<td>Friday, Feb. 20. (In Class)</td>
<td>5%</td>
</tr>
<tr>
<td>Quiz 3</td>
<td>Friday, Mar. 27. (In Class)</td>
<td>5%</td>
</tr>
<tr>
<td>Quiz 4</td>
<td>Friday, Apr. 24. (In Class)</td>
<td>5%</td>
</tr>
<tr>
<td>Mid Term 1</td>
<td>Friday Feb. 6. (In Class)</td>
<td>10%-15%</td>
</tr>
<tr>
<td>Mid Term 2</td>
<td>Friday Mar. 6. (In Class)</td>
<td>10%-15%</td>
</tr>
<tr>
<td>Mid Term 3</td>
<td>Friday Apr. 10. (In Class)</td>
<td>10%-15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Monday May. 4. (8:00am-10:00am)</td>
<td>35%-50%</td>
</tr>
</tbody>
</table>

Total: 100%

Clicker Bonus: + 5 %
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 20% 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.
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. Clickers must be registered at www.iclicker.com by Wednesday, January 21, 2015.


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

Course Outline

Part A: Conjugated \( \pi \)-Systems
1) Conjugated Dienes
   a. Stability
   b. Molecular Orbital Theory Representation
   c. Additions to conjugated dienes
   d. Cycloaddition Reactions: Diels-Alder Cycloaddition
   e. Electrocyclic Reactions: Thermal vs. Photochemical
   f. Sigmatropic Rearrangements: Cope and Claisen Rearrangements

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. Nucleophilic Aromatic Substitution (\( S_{\text{N}}\text{Ar} \)) Reactions
   h. Benzyne as an Intermediate
   i. Synthesis

Part B: Carbonyl Chemistry
1) Aldehydes and Ketones
   a. Nucleophilic additions
   b. Synthesis

2) Carboxylic Acids and Derivatives
   a. Preparation
   b. Reactivity
   c. Synthesis

3) Enols and Enolates
   a. Formation
   b. Halogenation
   c. Aldol Reactions
   d. Claisen Condensations
   e. Alkylation
   f. Conjugate Additions
   g. Synthesis
Part C: Amines
1) Reactions of Amines
   a. Properties
   b. Preparation
   c. Acylation
   d. Elimination
   e. Aryldiazonium Ions
   f. Nitrogen Heterocycles
   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/.