2014

450-01 Topics in Organic Chemistry

Richard Mullins

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CHEM 450-01 TOPICS IN ORGANIC CHEMISTRY FALL 2014

Class meeting: T, R; 11:30–12:45 pm in Logan 105

Instructor: Dr. Richard J. Mullins Email: mullinsr@xavier.edu
Office: Logan 305A Office Hours: W: 3–4 pm; R: 2:00–3:00 pm
Phone: (513) 745-3361 or by appointment

Required Texts:

Texts which you might find helpful:
Weeks, Pushing Electrons
Klein, Organic as a Second Language I & II

Prerequisite: A full year of Organic Chemistry with a grade of D

Course Description: This class builds upon the foundation of Organic I and II, expanding upon and applying the fundamentals learned there. We will explore how those fundamental concepts relate to several major areas of research within the broader subject of organic chemistry, including organic reactions and mechanism, asymmetric synthesis, green chemistry and natural product/drug synthesis.

Course Goals: By expanding on previously covered topics and with an emphasis on problem solving, the goal of the class is to develop within students an appreciation for the depth, subtlety and complexity of organic synthesis and reaction analysis. Furthermore, it is hoped that the course will provide insight into the different areas of research available within the field of organic chemistry.

Grading: The point breakdown is as follows:

ACS Organic Exam [60/70] required for passing
Three Midterm Exams (100 pts ea.) 300 pts
Final Exam 200 pts
Class Participation 50 pts
Homework 100 pts
Total 700 pts

The tentative grading scale is as follows:
A 90 – 100% D 60 – 69%
B 80 – 89% F <60%
C 70 – 79%
The instructor reserves the right to alter the grading scale at any time. Notice will be given to the class at the time of any grading scale changes. It is highly unlikely that the grading scale will be altered such that achieving a certain grade level becomes harder. Plus (+) grades will be given to scores within the top three numerical values of a grade level. Minus (–) grades will be given to scores within the lowest three numerical values of a grade level. Xavier does not have an A+ grade designation. It should be noted that according to the Xavier University Catalog, a grade of “A” is earned for “Exceptional” performance. This is also the agreed upon grading policy of the faculty in the Chemistry Department. The Chemistry Department Grading Policies should be viewed by all students and can be found on the Departmental web site at:

http://www.xavier.edu/chemistry/dept_policies_grading.cfm

**ANTICIPATED ORDER OF TOPICS (SUBJECT TO CHANGE):**

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topic</th>
<th>Homework due</th>
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<tbody>
<tr>
<td>8/27 – 9/4</td>
<td>Organic II Review</td>
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<tr>
<td>9/9 – 9/16</td>
<td>Chapter 1 (The Basics)</td>
<td>September 19</td>
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<td>9/18 – 9/30</td>
<td>Chapter 2 (Polar Reactions…Basic Conditions)</td>
<td>October 3</td>
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<td>10/2 – 10/16</td>
<td>Chapter 3 (Polar Reactions…Acidic Conditions)</td>
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<td>10/21 – 10/30</td>
<td>Chapter 4 (Pericyclic Reactions)</td>
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<td>11/6 – 11/18</td>
<td>Chapter 5 (Free-Radical Reactions)</td>
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<td>11/20 – 12/4</td>
<td>Chapter 6 (Transition Metals)</td>
<td>December 8</td>
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**Homework:** The homework assignments will be collected on the dates and will include all problems from the given section in the Grossman text. Because there are a large number of problems, it is important that you get started on these early. We will work a large number of them as part of the time spent in class and you are welcome to work together on these. They will be graded for correctness and completeness, but should most importantly be used to assess your grasp on the material and further direct your studying.

**The Classroom:** Most of the time in the classroom will be spent engaging in problem-solving exercises. Students will be expected to work together and as individuals on problems, and be willing to go to the board to share your work.

**Exams:** You will be given three midterm exams worth 100 pts each and one final exam worth 200 points. The exams will be given in class on the following dates: 10/3, 11/5, 12/5.

**Class Participation:** P, A and E! Students must come to class each day, PARTICIPATE, have a good ATTITUDE and work hard (EFFORT).

**Extra Help:** I will be available any time to discuss material from the class. Organic chemistry is one of my favorite topics of conversation, so please feel free to stop by any time.
**Extenuating Circumstances:** At times, circumstances might arise which will prevent you from completing assignments, attending class, etc. It is critically important to contact me ASAP when these situations arise. Waiting until the end of the semester to discuss some grade issue is unacceptable. In order for me to be able to satisfactorily resolve your situation, you must contact me soon after the event.

**Academic Misconduct:** A zero grade will be given to any student violating the University Academic Honesty Policy. The student may appeal according to normal University procedures as outlined in the University Catalog.

**NSTA:** CHEM 450 Satisfies NSTA Reporting Standards for Teaching Science Numbers 1a, 1b, 1c