Chemistry 232-001, Spring 2013

Organic Chemistry

Course Description and Syllabus

Class Sessions: MWF 12:00 – 12:50, CP-139
Professor: Mark S. Meier
Office: CP-341
Office phone: 257-3837
Email: meier@uky.edu (please put ‘CHE 232’ in the subject line)
Office Hours (CP-341): Mondays 2:00 - 2:50, Tuesdays 1:00 – 1:50
Help Sessions (CP-345) Wednesdays 4:00 - 4:50.

2. A set of molecular models (any of countless varieties) is highly recommended.

Course Content

CHE 232 is the second course of a two-term sequence. This course covers the reactivity of the most important organic functional groups. At the conclusion of this course, students who have learned the material will be able to discuss the reactivity of individual functional groups and how polyfunctional molecules are ensembles of simple functional groups.

Grading

The course will be graded on the basis of four cumulative, 50-minute exams, the first 3 of which will be given during the regular class period. There will be no other graded assignments, but it is strongly advised that all students work lots of problems from the book in order to test their own understanding of the course material.

February 6  First exam (25% of final grade)
March 6   Second exam (25% of final grade)
April 3    Third hour exam (25% of final grade)
April 29 (10:30 AM) Fourth hour exam (25% of final grade)

If for some reason you have an academic conflict with any of these exam times, you must notify me within the first two weeks of the term. In accordance with University procedures, you must provide written notice, and this must be done for each exam with which you have a conflict.

A seating chart will be posted before each exam. Please arrive at your assigned room and be in your seat at least 5 minutes before the beginning of the exams, which are given in class. Be prepared to show your student identification (or other photo ID) at the exams. The exams will be equally weighted - each will comprise 25% of the final grade. The exams will emphasize material covered since the last exam, but since new chemistry builds on old chemistry, command of the older material will always be
necessary. All exams are cumulative. Copies of many exams from previous years are posted on the CHE 232 web page: (http://www.chem.uky.edu/courses/che232).

If you believe an exam was misgraded, mark the number of the problem in question on the front page of the exam and return it to me within one week from the day the exam was returned. Exams can be returned for regrading for one week from the day the exam was available to be picked up. Changing an answer and then asking that the problem be regraded is cheating and will result in a minimum penalty of an E in the course, in accord with University rules. Selected exams will be photocopied in order to minimize the temptation for this. All graded work must be entirely your own. Attempts to claim another person’s work as your own, in any form or under any guise, is forbidden and will be dealt with in accord with University regulations.

You will be permitted to bring molecular models to the exams. No other material can be used during examinations unless I have authorized the class to use those specific materials and all students must be given the same opportunity to use those same materials. If you have questions about this policy, see me immediately.

Grades will be assigned using the following scheme (some people call this ‘the curve’):

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Letter</th>
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<tbody>
<tr>
<td>A</td>
<td>80%-100%</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>70-79%</td>
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<tr>
<td>C</td>
<td>60-69%</td>
<td></td>
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<tr>
<td>D</td>
<td>50-59%</td>
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<tr>
<td>E</td>
<td>&lt;50%</td>
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I reserve the right to lower these cutoffs in order to raise the overall grade point average of the class. NOTE: This has been necessary only on rare occasions, so adjustment of the cutoffs (or additional "curving") is very unlikely. I will not raise the cutoffs and lower grades.

Alternative/Makeup Exams

Students who have academic conflicts (i.e. conflicts with University classes, participation in athletic teams, etc.) will be offered either an alternate exam time or the choice to assign the points from a missed exam to the final exam. Please contact me as soon as possible if you will be unable to attend one of the scheduled examinations, and two weeks notice is a minimum. Makeup exams need to be completed within one week of the original exam date. If an exam (or a make-up exam) is missed without an excused absence, a ‘0’ will be recorded as the score for that exam. The University Bulletin and the manual “Student Rights and Responsibilities” describe what is a valid excuse for a missed exam. Please note – a conflict with a work schedule is not a valid University excuse for missing an exam. If you have a job and your employer expects you to be working during one of the exam times, arrange to take time off or arrange for some one else to work your shift for you. Spring break plans are not a University-approved excuse for missing an exam. Students requiring special accommodations are required to present documentation within the first two weeks of the semester.

Attendance Policy

Attendance is required, but is not a component of the grades. Important information and announcements may be presented in class only, and you are responsible for knowing the information that is presented in class.
Severe Weather
Severe weather can occur during the winter and spring. Consult the UKNow website for information in the event of severe weather: http://uknow.uky.edu/. Please note: Classes and exams will be held as scheduled unless UK closes or the class schedules are officially changed by the University. CP-139 is a “Safe Zone,” so in the event of a tornado warning you should not leave the room. We will shelter in-place.

Significant Dates (Official dates at http://www.uky.edu/registrar/spring-2013)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January 21</td>
<td>M. L. King Day - no class</td>
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<tr>
<td>January 30</td>
<td>Last day to drop</td>
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<td>February 6</td>
<td>First hour exam</td>
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<tr>
<td>March 6</td>
<td>Second hour exam</td>
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<td>March 11-16</td>
<td>Spring break</td>
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<tr>
<td>April 5</td>
<td>Last day to withdraw</td>
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<tr>
<td>April 3</td>
<td>Third hour exam</td>
</tr>
<tr>
<td>April 26</td>
<td>Last class</td>
</tr>
<tr>
<td>April 29 (10:30 AM)</td>
<td>Fourth hour exam (25% of final grade)</td>
</tr>
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Heartfelt Advice
1) **Attend** every lecture. You’re paying for it already, and in the lecture will be presented material and novel approaches to topics that do not appear elsewhere. Don’t complain about the cost of tuition if you choose to skip class.
2) **Read** and **think** about each chapter before the lecture. No, organic chemistry is not all memorization, but memorization is an important component of learning. If you try to simply memorize without learning to use the information, this course will be extremely frustrating for you. At the same time, there are a number of facts that you are simply expected to know.
3) **DO NOT FALL BEHIND.** The course is relentless. For most people, cramming before exams doesn’t actually work.
4) Write as you read. Draw out structures and reactions as you read about them in the book or your notes. Any term or concept that is less than completely clear should be reviewed immediately, before going further.
5) Work the problems in the book. Practice makes perfect. If you want to claim that you’ve learned the material, be prepared to demonstrate your proficiency by solving problems. Before each exam, be sure that you can correctly complete lots of problems without looking at the answer book first!
6) Come to my office hours to ask questions. I can’t help you through difficult concepts if you don’t come in to ask questions. It helps. Honest.
7) Go to your lab TA’s office hours to ask questions. If you are in the lab courses (CHE 231 or 233), you can use your TA as a source of help.
8) **Review** your general chemistry book and notes. Chemistry is cumulative. If you have learned the material in your general chemistry course, you will find that organic chemistry is largely an extension of the same basic principles. The same goes for reviewing your CHE 230 material.
Content

**Chapter 15:** Radical Reactions  
Suggested Problems: 35, 39, 41, 48, 56, 60, 67, 68, 70, 80

**Chapter 16:** Conjugation, Resonance, and Dienes  
Suggested Problems: 31-35, 37, 38, 42, 44-46, 50-52, 54, 55, 57, 58, 61, 62

**Chapter 17:** Benzene and Aromatic Compounds  
Suggested Problems: 30, 32-34, 37, 39, 42, 46, 50, 51, 61, 62, 65

**Chapter 18:** Electrophilic Aromatic Substitution  
Suggested Problems: 38, 47, 48, 52, 53, 56, 57, 67, 76, 79

**Chapter 19:** Carboxylic Acids (acid-base behavior)  
Suggested Problems: 34, 35, 37, 38, 40, 45, 49, 69, 71, 72

**Chapter 20:** Carbonyl Chemistry: Organometallics, Oxidations and Reductions.  
Suggested Problems: 39, 41, 42, 43, 49, 50, 53, 56, 57, 83

**Chapter 21:** Aldehydes and Ketones  
Suggested Problems: 48, 51, 55, 71, 73, 76, 77, 78, 79, 91

**Chapter 22:** Carboxylic Acids and Derivatives  
Suggested Problems: 46, 52, 54, 57, 59, 61, 63, 64, 65

**Chapter 23:** Substitution Reactions at Carbonyl α-Carbons  
Suggested Problems: 34, 39, 42, 46, 54, 56, 58, 61, 63, 73

**Chapter 24:** Carbonyl Condensation Reactions  
Suggested Problems: 27, 34, 38, 41, 43, 48, 54, 55, 69, 70

**Chapter 25:** Amines  
Suggested Problems: 45, 53, 54, 60, 64, 66, 72, 88