

ORGANIC CHEMISTRY I (CHE 230)

Meeting Times: MWF 8 – 8:50 AM, CP-139. Attendance is mandatory.

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Office Hours: Tuesday and Thursday, 10:00 -11:30 AM. You may also make an appointment for a particular time.

Important Dates:

August 31 Last day to add class
September 6 – Labor Day
Sept. 15 Last day to drop with no record.
Oct. 1 No Class (Fall Break)
Oct. 18 Middle of term.
Oct. 22 Last day to withdraw
Nov. 26 No class (Thanksgiving holiday)

Course Description

CHE 230 is the first course of a two-term sequence. This course covers the fundamentals of structure and reactivity of organic compounds, and on how these translate into the chemical and physical behavior that makes organic chemistry ubiquitous. We will also cover selected spectroscopic methods for the study of organic compounds. At the conclusion of this course, students who have learned the material will be able to discuss the 3 dimensional structure of most classes of organic compounds, to discuss the reactivity of alkanes, alkenes, and alkynes (and their derivatives) toward acids, bases, nucleophiles, and electrophiles, as well as to describe how the structure of organic compounds is assigned using mass spectrometry, IR spectroscopy, and nuclear magnetic resonance spectroscopy. In addition, successful students will be able to demonstrate an understanding of the reactivity of organic compounds through reaction mechanisms and to explain the kinetic and thermodynamic underpinnings of each mechanistic step.

Course Material - *Required Text*

The required textbook for this course is Organic Chemistry, 3rd ed. by Maitland Jones, Jr. A set of Framework Molecular Models

is also required.

Optional Texts

The Study Guide and Solutions Manual for Jones is strongly recommended. The books are expensive, but keep in mind that you'll use them for at least two semesters.

Course Coverage (Tentative)

We will cover the first twelve chapters of your book and if time permits Chapter 13.

Examinations

NOTE NEW TIMES!!!

- Exam 1: Wednesday, September 29, in class
- Exam 2: Wednesday, October 27, in class
- Exam 3: Wednesday, November 24, in class
- **Final Exam:** Thursday, December 16, 2004. 6:00-8:00 PM.

You may bring neither your molecular model kit nor a calculator to the exams. **All exams are cumulative.** Any subject covered on an earlier exam may reappear unexpectedly on any later exam.

Grading Policy

4 Examinations 25% each

There will be no other graded assignments, but it is *strongly* advised that all students work problems from the book in order to test their own understanding of the course material.

The final assignment of letter grades will be based *approximately* on the following schedule:

A= 80+,
B= 65-79,
C= 50-64,
D= 40-50
E = <40

I reserve the right to raise or lower these divisions depending on the difficulty of exams and where breaks in the distribution occur. Grades are assigned on the basis of student performance, not proportions; in other words, students are not competing against each other for grades, and I am quite happy to give

most of the class A's and B's if the class has earned them.

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.

Students may miss one exam if they have a documented, excused absence that conforms to the University Senate Rules. (See course bulletin board outside CP-139 in Rose Street corridor.) The documents must be presented within a week of the missed exam. Make-up exams will not be given; the student who misses an exam for a legitimate reason will have three scores for the semester instead of four. (Remember, all exams are cumulative; if you miss one exam, it doesn't mean that you don't have to learn the material!) Students with two documented, excused absences (from examination) will have their final exam count for two scores instead of one. Students who miss three or more exams or the final exam for any reason will receive an "E" unless the dean of their college permits them to withdraw. Students who miss an exam without an excuse will receive a zero for that exam at my discretion. If you miss an exam for any reason, even an undocumented one, please discuss the circumstances with me.

All exams will be returned to you after they have been graded. Please check them over for addition mistakes. If you were marked down for an answer that you think was correct, submit it to me with a brief written argument. Oral requests for regrading will not be entertained. Requests for regrading must be received within one week of the return date. A student who has changed an answer and presented it for regrading has cheated. He or she will accordingly receive an E in the class (the minimum punishment) and may be subject to further disciplinary action. In order to remove any temptation to do this, some exams will be photocopied before they are returned.

Problem Sets

Online Homework (EPOCH)

Robert Grossman, Raphael A. Finkel and Prasanth Ramachandran have developed a Web-based organic chemistry homework program called **EPOCH**. This program asks you to draw organic structures in response to a question. If your

answer is incorrect, you are given some feedback, but you are not told the correct answer. You need to keep trying until you get the right answer.

Please go to the [EPOCH Lite home page](http://epoch.chem.uky.edu/lite/home)

(<http://epoch.chem.uky.edu/lite/login.jsp>) and register with the system.

Traditional Homework

In addition to the EPOCH assignments, problems from the book will be assigned, but they will neither be collected nor graded. Answers to homework problems are available in the Study Guide and Solutions Manual.

Even though I will not be collecting or grading the traditional homework, you are strongly encouraged to do it. I design exams around the problems I assign.

Academic Integrity

Academic integrity is covered in the handbook, Student Rights and Responsibilities which all of you should have received (if not, consult the chemistry office). Possible penalties for academic offenses (cheating on exams etc.) range from an "E" for the course (the minimum penalty) to expulsion from the University.

General Note

Learning is an interactive process. If I have not made a point clear it is your responsibility to let me know. Do not be afraid to ask questions. Classroom participation is a key element in this class and can influence your grade. Do not hesitate to tell me if you need me to speak louder.

More on Examinations

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 be necessary. *All exams are cumulative.*

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 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.

Advice for successful completion of this course

- 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.
- 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. **DO NOT FALL BEHIND.** The course is relentless. Planning to cram before exams doesn't actually work for most people.
- 3) 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.
- 4) Get out your model kit and build structures. Be sure you can translate 2-D drawings into 3D structures. Practice drawing common organic structures and be sure you can interpret your own drawings.
- 5) Work **all** of the problems in the book. Yes, that's **ALL** the problems. 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), 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.