

CHE 230 - 003
ORGANIC CHEMISTRY I
Fall 2011
COURSE DESCRIPTION & SYLLABUS

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Prerequisite: CHE 105/107

Required Text: "Organic Chemistry," 4th Ed., by Maitland Jones, Jr. and Steven Fleming. When writing an exam, I assume you can work all of the problems in each chapter covered prior to that exam.

Lecture: M,W,F 11:00-11:50 in CP220 *ATTENDANCE IS MANDATORY*

Office Hours: M,W 12:00 - 12:50 a.m. in CP 318 or by appointment. Times subject to change based on input from students. Make appointments by email, suggesting 2 or 3 times and dates in your message. *Use CHE 230 as the subject line of all emails or your message may get lost.*

Home Page: <http://chem.as.uky.edu/organic-chemistry-i-2>

Exams/Grading:

Exams are cumulative, defined here as testing: (1) knowledge/understanding of newer course content built upon understanding of prior course content, (2) specifically testing knowledge/understanding of prior course content. The bulk of each exam will fit definition (1), with an increase in the contribution of definition (2) on the final exam.

A student who has legitimately missed a progress exam because of a documented, excused absence that conforms to the University Senate Rules will simply have their overall exam score calculated from the remaining exams. If two exams are missed, then the remaining two exams count 50 % each. **BEWARE:** You should still learn the material since exams are cumulative. Missing 3 progress exams or the final will result in a failing grade for the course, unless the dean of your college permits you to withdraw.

Students who miss an exam without an excuse will receive a zero for that exam (a note simply indicating that you visited a physician's office will not be sufficient).

There will be 5-10 homework assignments (10 pts each), separate from the normally assumed end-of-chapter problems (not graded).

Letter grades will be assigned as follows: 100-80% = A, 79-70% = B, 69-60% = C, 59-50% = D, < 49% = E.

Date	Time	Exam	Point Value
September 19	11:00-11:50 a.m.	Progress Exam 1	100 points
October 14	11:00-11:50 a.m.	Progress Exam 2	100 points
November 9	11:00-11:50 a.m.	Progress Exam 3	100 points
December 16	1:00 – 3:00 p.m.	Final Exam	150 points

NOTE: All exams except the final are held during the regular class period

If you have academic conflicts with exam times or need special accommodations, you must inform me in writing during the first two weeks of class.

Objectives:

This course is the first of a two-part introduction to the principles of organic chemistry. The material will build upon the knowledge you have retained from CHE 105/107. You will focus now on the nature and reactivity of organic compounds starting with simple alkanes, and then moving to those carrying various functional groups and stereocenters. Alongside learning how to put together molecules using these functionalities as “handles” or “hooks”, you will learn to think “backwards”, dissecting a molecule to its parts (a.k.a. retrosynthesis) in much the same way you recognize nuts and bolts as positions to disassemble a mechanical object. We will also discuss the means by which chemists interrogate molecules and force them to provide us with information. These are spectroscopic techniques that tell us what kinds of molecules they are. Putting my enthusiasm for chemistry aside for a moment, the most important thing to take from this course is further refinement of your skills of reasoning, logical problem-solving, and the ability to put together the “big picture”. Organic chemistry uses a language of symbols with constantly changing meanings, depending on their context. This can seem bewildering, but will serve as a tool to develop pattern recognition and analytical skills. Trust me, the patterns are there.

Tips for Success:

If you haven't started already, August 24, 2011 is a good day to start reading and working problems. Depending on our pace, we will cover topics corresponding to approximately 500 pages of new material in the textbook this semester (approx. 3 chapters for each exam). Hit the book and get ahead!!! Falling behind will start a snowball effect. ***Very, very few people can “cram” organic chemistry the night before an exam.***

Read the chapters before they are covered in class. You've heard this before, but trust me...just do it. The lectures will present a large portion of what is included in the textbook, but are mostly intended to provide another *perspective* which will help you to put together the themes about which you have already read. ***No instructor can teach you organic chemistry. You must be an active learner. Be sure to read the introduction to the textbook for additional tips.***

There is a very strong correlation between working problems and scoring well on exams. Work all of the problems at the end of each chapter. When you are reading the chapter, stop at each in-chapter problem and solve it. A very common comment is "*I can work the problems fine, but then I can't do it on the exam*". ***There is a big difference between solving problems with the help of a solutions manual, and becoming sufficiently comfortable with the material to quickly access and use the information that you have learned. Practice, practice, practice.***

Organic chemistry involves learning a lot of new material. Memorizing material is unavoidable, but a key to this course is understanding the recurring themes. If you do this, at some point you will encounter a new reaction or molecule and be able to predict the answers to questions. ***Memorization alone will, at the very best (with luck), earn you a letter grade of “C”.***

Attend every lecture and use my time (office hours and help sessions) as needed. I didn't choose this academic career because I like to get paid much less than if I were working in industry. I enjoy the job. Take advantage of that. ***I am here to help all of you who are willing to join me in putting in the effort.***

CHE 230 and 232 are cumulative. If something gives you troubles on one exam, don't let it hurt you again on a later one.

If you feel like asking me whether an exam will cover the lectures or the textbook, then we have failed to communicate ideas and concepts. ***If I haven't made the connections clear, be sure to meet with me early and often.***

Useful on-line drawing tools (including 3D) for organic compounds can be found at <http://epoch.uky.edu/ace/public/welcome.html>.

Be sure to click on the “Browser check-up” link at the parent site <http://epoch.uky.edu/ace/> before proceeding. The 3D visualization apps seem to work better in Windows than in the Mac environment.