

CHEM 330
Organic Chemistry I

Fall Semester 2017
11:00-11:50 AM MWF, LEEP2 G411

PREREQUISITE: CHEM 135, 175 or 195 (or equivalent) with a grade of C- or higher

KU CORE: CHEM 330 satisfies KU Core Goal 3 (Natural Sciences)

INSTRUCTOR: Prof. David R. Benson; 5070A1 Malott.

Office Hours: Mon. and Wed. 1:30-2:30 pm; Thurs. 11:00 AM-Noon, or by appointment.

LECTURE TA: Wade Henke

Office Hours: Mon. 2:30-3:30 pm; Thurs. 2:00-3:00 PM, or by appointment.

COURSE EMAIL ACCOUNT: CHEM330DB@ku.edu

COURSE MATERIALS (See announcement on Blackboard for more information)

Required:

- *Organic Chemistry, 3rd Edition, by David Klein, Wiley, 2017. Hard copy or e-text.
- *WileyPLUS online instructional system. A WileyPLUS access code is included in the textbook packages sold through the bookstores.
- *i>Clicker2 (see top of page 3 for registration information)

Optional, but highly recommended:

- *Student Solutions Manual for the Klein textbook (hard copy or electronic version is included with the textbook packages sold through the KU Bookstore)
- *Molecular models. Two different sets from HGS are available in the KU bookstore.

COURSE LEARNING OBJECTIVES: *After completing CHEM 330, students will be able to:*

-  Derive structures of representative organic compounds on the basis of systematic names, and vice versa.
-  Recognize the relationship between molecular structure and physical properties of organic compounds.
-  Apply understanding of acid and base strength to predict the outcomes of proton transfer reactions in organic chemistry.
-  Understand the sources and consequences of stereoisomerism and conformational changes in representative organic compounds.
-  Predict products, mechanisms and relative rates of competing substitution and elimination reactions of alkyl halides and related compounds.
-  Predict product(s) of organic reactions involving other common functional groups, including alkenes, alkynes and alcohols.
-  Demonstrate an understanding of the stepwise mechanisms of reactions learned in the course.
-  Propose reasonable laboratory syntheses of organic compounds, utilizing combinations of reactions learned in the course.

STUDENT GROUPS: A substantial portion of every class period will be spent solving problems, with students working in groups. You will receive an email from CATME.org, requesting some demographic information. Please complete the survey by 5 pm on Monday, August 21. The information you provide will be used to generate twenty groups of students, with 5-6 students per group. You will subsequently receive an email indicating which table you should sit at starting on Wednesday, August 23 (the second day of class). Group composition will likely be changed one or more times during the semester.

BLACKBOARD: <http://courseware.ku.edu>. The Blackboard site will contain all important class materials, and is also your point of access to WileyPLUS. All posted materials, including course syllabus, homework assignments, and Powerpoint slides used in lectures will be in PDF format that you can download and print. We will also use Blackboard to post announcements. If you have problems accessing the web site call the Blackboard help center at 864-0200.

You *must* have a KU email address or register your email address with KU to utilize the web site and to receive email messages. If you need to register your email address or obtain a KU address for the first time, go to <http://www.ku.edu/computing/services>.

EXAM SCHEDULE:

Hour Exam 1 (100 points):	Monday, September 25.	8:00-10:00 PM (3140 Wescoe)
Hour Exam 2 (100 points):	Monday, October 23.	8:00-10:00 PM (3140 Wescoe)
Hour Exam 3 (100 points):	Monday, November 20.	8:00-10:00 PM (3140 Wescoe)
Final Exam (150 points):	Monday, December 11.	4:30-7:00 PM (TBD)

EXAM CONFLICTS: If you have a valid, documented time conflict with one of the exams (other classes, exams, etc.), you will have the opportunity to take the exam earlier in the day. You will need to let me know about valid conflicts at least two weeks in advance.

MISSED EXAMS: There will be **no make-up exams** for the hour exams. *If you miss an hour exam due to illness or other situation beyond your control, and provide acceptable documentation, your score for that exam will be replaced by your percentage score on the final exam.* If you miss an hour exam for any reason not deemed acceptable by the instructor, your score for that exam will be **zero**. All students must take the final exam.

REGRAIDING OF EXAMS Please carefully check your exam for errors in grading. *Any exam requiring re-grading should be brought to my attention no later than one week after the exams are made available.* SCANTRON portions of exams will not be re-graded.

HOURLY EXAM GRADE REPLACEMENT POLICY: Your lowest hour exam score will be replaced by your percentage score on the final exam, unless that score is zero and resulted from an unacceptable absence, or unless all of your hour exam scores were higher than your percentage score on the final exam. Please *do not use* this policy as a rationale to forego preparing for one of the hour exams. Students who do this struggle to get back on track because Organic Chemistry is a highly cumulative subject.

ONLINE PRE-LECTURE EXERCISES: By 5 pm on Mondays, Wednesdays and Fridays, a 1-point exercise on material to be covered during the next class period will be made available through WileyPLUS. The questions will be based either on reading or videos assigned for that class period. The exercises must be completed prior to class. A maximum of 30 points can be accumulated via these pre-lecture exercises, which will go toward your final course grade. The purpose of these exercises is to encourage you to read ahead, and to be prepared for answering Clicker questions, and participating in in-class group problem solving sessions.

IN-CLASS CLICKER QUESTIONS: We will use i>Clicker2 in class on a daily basis. You will gain 1 participation point per class period by answering at least 75% of the clicker questions during that period. The total number of i>Clicker points will be capped at 30 (in other words, you have 40 lectures in which to gain the 30 points). Anybody found using two or more i>Clickers during class will receive zero points (total) for this part of their grade.

i>CLICKER REGISTRATION: You will need to register your i>Clicker2 through your Blackboard account. Go to the CHEM 330 page in Blackboard, click on the "Tools" link, go to the bottom of the right column and click "i>Clicker2 registration." In the new window, enter your i>Clicker2 registration number, found below the bar code on the back of the clicker or found on the clicker window when the clicker is turned on. *Do NOT register through iclicker.com, as this does not allow us to match your responses with your name.* The deadline for registering your i>Clicker2 on Blackboard is Monday, August 21 BEFORE the beginning of class.

WileyPLUS REGISTRATION There is a link to WileyPLUS in the course Blackboard site. Once you have your access code, click on this link and you will be guided through the steps of setting up your account. If you are unable to purchase a code prior to the start of classes, you can use the WileyPLUS link noted above to set up a temporary account. This will give you two weeks of access, and will transition to a regular account once you have an access code.

COURSE GRADING: Points will be distributed as follows:

Pre-Lecture exercises	30 points
Clicker questions	30 points
Hour exams	300 points
Final exam	150 points
Total:	510 points

FINAL LETTER GRADES: The following grading scale will be used, with rounding (i.e. A/A-cutoff will be 92.5%). A small curve may be applied at the end if the class average warrants.

93% - 100% = A	73% - 76% = C
90% - 92% = A-	70% - 72% = C-
87% - 89% = B+	67% - 69% = D+
83% - 86% = B	63% - 66% = D
80% - 82% = B-	60% - 62% = D-
77% - 79% = C+	Below 60% = F

PLUS SESSIONS: PLUS Chemistry will be holding daily M-F discussion/review sessions throughout the semester. The PLUS schedule can be accessed at <http://www2.ku.edu/~plus/organicchemistry.shtml>

EXAM REVIEW SESSIONS: An optional evening review/discussion session will be held on the Thursday prior to each hour exam, 7:00 pm in 130 Budig.

PROBLEM SOLVING: *The better your problem solving skills, the better you will do in the course.* As you study the text, work the relevant "Skillbuilder" and "Conceptual Checkpoint" problems to be sure you understand the material, and then work as many end-of-chapter problems as you can. A list of recommended end-of-chapter problems from each chapter in the textbook will be posted to Blackboard. I will also post a set of analogous electronic problems for each chapter via WileyPLUS. You may also wish to take advantage of Orion, adaptive learning software integrated with the Klein e-text that is available through WileyPLUS. *Please refer to the last page of the syllabus for additional study tips.*

LECTURE RECORDING: The audio portion of each lecture, together with the associated PowerPoint slides, will be captured using a technology called Echo360, and made available the same day on the course Blackboard site. This should obviate the need to make your own recordings. If you do intend to make your own audio recordings, you must first obtain my permission. *Video recording or taking of still electronic images during lectures is prohibited.*

COMMERCIAL NOTE-TAKING: Pursuant to the University of Kansas' [Policy on Commercial Note-Taking Ventures](#), commercial note-taking is not permitted in Organic Chemistry 1 (CHEM 330). Lecture notes and course materials may be taken for personal use, for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy. Please note: note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation under the ADA, is not the same as commercial note-taking and is not covered under this policy.

DISABILITY ACCOMMODATIONS: The Academic Achievement & Access Center (AAAC) coordinates accommodations and services for all KU students who are eligible. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible. Their office is located in 22 Strong Hall; their phone number is 785-864-4064 (V/TTY). Information about their services can be found at <http://disability.ku.edu>. Please also contact me privately in regard to your needs in this course.

ACADEMIC MISCONDUCT: Cheating, or the appearance thereof, including giving or receiving help on an exam, looking at another student's paper while taking an exam, falsifying exam papers, using unauthorized materials, notes, crib sheets, or the equivalent, will not be tolerated and will be dealt with in accordance with University regulations (see <http://www2.ku.edu/~unigov/usrr.html#art2sect6>). The Chemistry Department reserves the right to make and keep copies of individual examination papers.

DIVERSITY, INCLUSIVITY, AND CIVILITY: Civility and respect for the opinions of others are very important in an academic environment. It is likely you may not agree with everything that is said or discussed in the classroom. Courteous behavior and responses are expected at all times. When you disagree with someone, be sure that you make a distinction between criticizing an idea and criticizing the person. Expressions or actions that disparage a person's or race, ethnicity, nationality, culture, gender, gender identity / expression, religion, sexual orientation, age, disability, or marital, parental, or veteran status are contrary to the mission of this course and will not be tolerated

PLEASE REFRAIN FROM THE FOLLOWING ACTIVITIES DURING CLASS:

- ✚ Talking to your neighbor(s), except during problem solving sessions.
- ✚ Reading newspapers
- ✚ Using cell phones
- ✚ Using laptop computers (you would quickly find that laptops are not convenient for taking notes in this class)
- ✚ Preparing to leave while the instructor is still lecturing (unless the whistle has sounded)
- ✚ Recording lectures without prior approval from the instructor

HOW TO SUCCEED IN ORGANIC CHEMISTRY: Success in organic chemistry requires mastering a substantial body of factual information and the use of this information in the solution of problems. **You should plan a minimum of three hours of study and problem solving outside of class for every hour of lecture.** To study productively, you should carefully read each assignment before class (and again afterwards), working the Skillbuilder and Conceptual Checkpoint problems as you go along. Also make sure to go over the Review of Concepts and Vocabulary and the Skillbuilder Review at the end of each chapter. As you study the text and your class notes, train your hand to draw the structures of molecules and write equations and mechanisms. Build models of various structures and learn to translate these three dimensional structures onto paper. Get a large quantity of scratch paper and write, write, write!

Work as many problems as possible, in writing and in full detail. There is no other way to acquire the skills you will need to succeed in organic chemistry. Organic chemistry is a cumulative subject and the material you learn in the first week of the course will still be used at the end of the second semester of organic chemistry. Even though the recommended end-of-chapter problems are not graded, it is extremely important that you work them. If you struggle with a problem that you can't solve immediately, don't give up and look up the answer. Review related material in your lecture notes and in the text. If you still can't solve the problem set it aside and try it again later. In this way you will gradually learn the important material without trying to memorize it.

You will also learn a way of thinking, of looking for patterns and similarities between seemingly unrelated ideas and facts. If you must look up the answer to a problem, be sure that you understand how to solve that type of problem. Organic chemistry requires a lot of hard work and consistent effort and studying. Don't try to memorize the text and cram before exams. If you do, you are courting disaster! An understanding of reactions is essential and although facts must be learned, they will quickly overwhelm you unless you understand the general principles and see the relationships among the facts.

1. Do assigned readings prior to class, and complete the assigned pre-lecture exercises.
2. Come to class every day and fully participate in Clicker questions and other problem solving activities.
3. Take careful notes in class, and read and rewrite the notes within 24 hours. Your notes are an important resource for study. Numerous studies have shown that lecture material loses its value if it is not reviewed shortly after class.
4. Keep up! Organic chemistry is cumulative. This seems obvious, but failing to do so is the major reason for not doing well in the course.
5. Study actively. Write, write, write! Explain concepts to members of your study group. Work out strategies for solving various types of problems. Writing reaction mechanisms is crucial to success in organic chemistry.
6. Work as many problems as possible. This is the only way to learn organic chemistry.
7. Keep a calendar. Know when exams are and plan your time so that you are not trying to learn material the night before the exam.
8. Be well rested before an exam. Because of the cumulative nature of organic chemistry, it is not possible to "pull an all-nighter" and do well on exams.