

CHEMISTRY 262-01 - Fall 2012
Tuesday September 4 – Friday, December 7
Organic Chemistry II

Instructor: Dr. Christopher McDaniel

Email: mcdaniel@chem.umass.edu

Lecture: M•W•F, 9:05 – 9:55 am, Integrated Sciences Building (ISB) 135

Exams: See Dates Below

Outside of Class Availability: In ISB 241A

Day	Time Available
Monday	10:00 – 1:00
Tuesday	10:00 – 1:00
Wednesday	10:00 – 1:00
Thursday	10:00 – 1:00
Friday	10:00 – 1:00

Course Objectives

Gaining a clear understanding of the principles that govern organic chemistry, and not mere memorization of facts and mechanisms is the main course objective. This course will, hopefully, help you understand common functional groups, bonding, conformations of molecules, stereochemistry and reactions of the organic realm of chemistry. We want to help you understand the material and have an excellent foundation and preparation in future organic chemistry courses.

IF YOU HAVE A QUESTION, DO NOT HESITATE TO ASK!

My goal, not my job, is to help you learn
and develop problem solving skills.
Your goal should be mastering the material!

If you do not have questions, you do not know what you do not understand.

Philosophy on Learning and Teaching

Learning is a concept that orbits and reflects independence, thought provoking questions, and most of all clear communication. This asks an extreme amount of effort by not only the student, but also the teacher. Can you recall the critical thinking, rational and logical problem solving techniques learned in organic chemistry? Keeping this in mind is how I run my classes. And for you to be able to use these skills, one needs to promote more than just teaching. This is why I push for an understanding of material and not merely just memorization and regurgitation of facts on exams.

Being able to connect with students is a skill a teacher needs to have. Earning their trust and recognizing them as individuals and not just a number is important. I accomplish this by learning your names. Knowing something about you, even if just a little, will allow me to teach and inspire the learning process

“It is the supreme art of the teacher to awaken joy in creative expression and knowledge.”
-- Albert Einstein

Academic Assessment

UMass Amherst is committed to assessment of student achievement of academic outcomes. This process addresses the issues of what you need to learn in your program of study and if you are learning what you need to learn. The assessment program at UMA has four specific and interrelated purposes:

- A. To improve student academic achievement
- B. To improve teaching strategies
- C. To document successes and identify opportunities for program improvement
- D. To provide evidence for institutional effectiveness

In class you are assessed and graded on your achievement of the outcomes for this course. You may also be required to participate in broader assessment activities.

Supplemental Instruction

We will be making use of a Supplemental Instructor (Mr. Joseph Homsy). Joseph will be coming to lecture and available for answering questions afterwards. On a day and time yet to be determined, Joseph person will also hold optional help sessions that I highly recommend attending.

Grading

The point breakdown for the course is as follows:

Graded Assignment	Point Value per each	Percent of Final Grade
OWL	1	10
In Class iClicker	3	10
Midterm Exams (3)	150	60
Final Exam	200	20

Total

100%

iClicker

We will be making use of the classroom response system, iClicker[®]. You can purchase your iClicker 2 remote at the Textbook Annex. In order to receive full credit for the iClicker questions, you must be present and get the answer correct. Bringing a fellow student's remote and answering the question with 2 remotes is academic misconduct and will be dealt with accordingly. You must register your device using the iClicker Registration link in MOODLE. At some point in EVERY LECTURE throughout the semester, I will give an iClicker[®] question. Unless there is a documented reason, there are absolutely NO MAKE-UP iClicker[®] questions. **I will drop 2 iClicker questions. You will get 2 points for answering the question and 1 point for getting it correct.**

Course Communication

All electronic communication must have "CHEM 262-01" (without quotes) **in the subject line**. Failure to indicate this subject will cause your email to be routed to an unmonitored SPAM folder. *I reply to all emails. If you do not get a reply, it is because the subject was incorrect.*

Exams

There will be three (3) midterm exams and a final. The midterm exams will be given on Thursday (*tentatively*) nights from 7:00 – 9:00 pm on the dates listed below. Exams will always cover material up through the Friday of the *previous week*. The **final exam is comprehensive** and the time/location is TBD. Unless there is a documented medical emergency, or university sponsored event that you are part of, there are NO MAKE-UP EXAMS! If you have a **university conflict** with Thursday nights, you must contact me before the end of the first week.

WORK IS NOT AN EXCUSE TO MISS AN EXAM. I put myself through school working as a chef and I know how the working world operates. Request the days off now, or let your employer know the next time you work about these dates.

Molecular model kits will be allowed during the exams, and they are optional. All exams are closed notes and closed book. **Cell phones, at all times, are to remain on silent or off.**

Tentative Dates:

Exam	Week	Date*	Lectures Covered
1	4	9/27	1 - 8
2	8	10/25	9 - 20
3	11	11/15	21 - 29
FINAL	Finals Week	TBD	1 - 39

*These dates may be adjusted throughout the quarter as I see fit.

Final Grade Distribution

I anticipate the average in this class will be around a “C+” ($\approx 77\%$). The minimum final percentage distribution for the grading scale is shown on the next page. If the class produces an average significantly lower than expected, the grading scale will be adjusted in favor of the student. I will never “down curve.” For example, an “A-” will never be higher than a 90%, but can be adjusted to an 88% if I find it necessary. **I reserve the right to adjust the percentage ranges (see table on the following page) in favor of the student.**

Approximate Percentage Range	Anticipated Grade	Approximate Percentage Range	Anticipated Grade
100 - 95.0	A	78.9 - 75.0	C+
94.9 - 90.0	A-	74.9 - 70.0	C
89.9 - 86.0	B+	69.9 - 65.0	C-
85.9 - 81.0	B	64.9 - 55.0	D+
80.9 - 79.0	B-	54.9 - 50.0	D
		< 50	F

Make-up Work

Invalid excuses for any missed assignment include, but are not limited to: off-campus job, work-study, student-run sports clubs (NCAA sanctioned sports are excusable), any fraternity/sorority sponsored event. Valid excuses include, but are not limited to: medical emergencies (in the event of a medical issue, go to the doctor, get a note explicitly stating the date(s) missed), NCAA sanctioned events, death in the family.

The instructor reserves the right to determine the validity of unlisted situations.

In the event that you have a valid excuse that allows make-up work, you must meet the following criteria: 1. You had to have let the instructor know before the proposed date, 2. You must bring your excuse to the instructor the day you return to campus. Family emergencies will be handled on a case-by-case basis.

Important Information

Course Prerequisites

CHEM 261 with a grade of “C” or better.

I will review pertinent information from organic I as needed; however, I do expect proficient working knowledge of the material from this course.

Course Materials

Required:

Hardcopy Textbook (See Below): Organic Chemistry Hybrid Edition, Author: John McMurry, Publisher: Brooks/Cole, 8th Edition, 2012, ISBN: 978-1111581572

Note: The e-book is available free of charge through OWL. You do not have to purchase the hardcopy book

iClicker 2 Remote (Required): Can be purchased at the University Bookstore.

Optional:

Study Guide (Optional): *Student Guide and Solutions Manual* by John McMurry ISBN 978-0840054456.

Note: I **DO NOT** recommend this as the end-of-chapter problems are **ONLY** in OWL, and the answers to in-chapter problems are included in the eBook.

Course Webpage:

We will be making use of the OWL system developed here at UMass Amherst for graded, web-based homework. We will utilize Moodle for announcements, handouts and graded work. You are responsible for all electronic communication from me, and any announcements posted.

HELP!!

You can, of course, always come to my office, regardless if it is office hours or not. Unfortunately, the chemistry department does not offer private for-pay tutoring. To combat this, there is a free tutoring service that provides over 50 hours per week of no charge help. This is located in the Learning Resource Center (The W.E.B. Dubois Library), 10th floor room 1020.

Lectures

Lecture attendance is required. If you fail to attend the first lecture, I reserve the right to drop you from the class by the published add/drop date of the 14th calendar day of the term (this includes weekend days); **Monday, February 6, 2012**. You should arrive on time, as we will begin promptly at the scheduled start time. Come prepared and ready to participate as this is important for successful performance in this class.

Notes

These are the best way for you to succeed in this class. Active note taking and not just copying down is imperative to your learning and understanding the material. I suggest a dedicated notebook for this class as we will be doing a lot of writing.

OWL Problems

10% of your grade will be determined on how you perform on the OWL exercises. You must log into OWL for the assignment due dates. You are responsible for knowing the due dates and having your assignments completed on time, as no extensions will be granted. You will have as many opportunities before the due date as necessary to get the questions correct.

Organic chemistry is best learned by working out problems. This means trying the problem, working through it by looking back at your notes and the textbook for help, then looking at the answer. **DO NOT READ THE ANSWER KEY AND AGREE WITH THEIR SOLUTIONS! THIS IS SETTING UP FOR EXAM DISASTER!!** Read the book with pencil/paper in hand and take your own notes as you go along. This ensures the material is going through your head. Practice writing structures and mechanisms as you learn them so they are easier to recall when needed. I suggest working as many problems as possible, then working them again. The type and level of difficulty on the quizzes and exams will reflect the problem sets that I create for you.

SPEND TIME WITH THE MATERIAL EACH DAY! I can't stress this enough. Working 2-3 hours each day is much more beneficial than trying to do everything 12 hours before the exam. To succeed in this class, most students find that 15-20 hours/week is necessary. In my experience, students who wait to study until a few days before the exam, never looking at the material, usually do very poorly.

DO NOT WORK THE PROBLEMS WITH THE ANSWER RIGHT BESIDE YOU!!

This is a guaranteed way to learn and understand absolutely nothing.

Course Topics and Material

The chapters from the book that will be covered this semester are listed below in the anticipated week. *If I do not cover a particular section in lecture, then you are not responsible for the material in said section.*

Week 1:	Chapter 12: Mass Spectrometry and Infrared Spectroscopy
Week 2:	Chapter 13: Nuclear Magnetic Resonance Spectroscopy (NMR)
Week 3:	Finish Chapter 13; Start Chapter 16: Electrophilic Aromatic Substitution
Week 4:	Finish Chapter 16; Start Chapter 17: Reactions and Synthesis of Alcohols
Week 5:	Finish Chapter 17; Start Chapter 18: Ethers and Epoxides (18.2,4,5 only)
Week 6:	Finish Chapter 18; Start Chapter 19: Aldehydes and Ketones
Week 7:	Finish Chapter 19; Start Chapter 20: Carboxylic Acids (20.2,4,7,8 only)
Week 8:	Finish Chapter 20; Start Chapter 21: Nucleophilic Acyl Substitution Reactions
Week 9:	Finish Chapter 21; Start Chapter 22: Carbonyl α -Substitution Reactions
Week 10:	Finish Chapter 22; Start Chapter 23: Carbonyl Condensations
Week 11:	Finish Chapter 23; Start Chapter 24: Amines and Heterocycles
Week 12:	(<i>Thanksgiving week</i>) Finish Chapter 24
Week 13:	Start/Finish Chapter 25: Carbohydrates;
Week 14:	Start/Finish Chapter 26: Amino Acids, Peptides and Proteins

Academic Misconduct and the Student Code of Conduct

As per requirement by UMass Amherst: “Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. [See [Appendix B](#) of the Student Code of Conduct for detailed examples of behavior that constitutes academic dishonesty.] Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. The procedures outlined below are intended to provide an efficient and orderly process by which action may be taken if it appears that academic dishonesty has occurred and by which students may appeal such actions.”

Academic misconduct of any type will not be tolerated and will be dealt with in accordance with the Student Code of Conduct as outlined on the following UMass website:

www.umass.edu/dean_students/codeofconduct/acadhonesty/#B

- 1. Know Your Rights.** Do not let other students in your class diminish the value of your achievement by taking unfair advantage. Report any academic dishonesty you see.
- 2. Acknowledge Your Sources.** Whenever you use words or ideas that are not your own when writing a paper, use quotation marks where appropriate and cite your source in a footnote, and back it up at the end with a list of sources consulted. See on [plagiarism](#).
- 3. Protect Your Work.** In examinations, do not allow your neighbors to see what you have written; you are the only one who should receive credit for what you know.
- 4. Avoid Suspicion.** Do not put yourself in a position where you can be suspected of having copied another person's work, or of having used unauthorized notes in an examination. Even the appearance of dishonesty may undermine your instructor's confidence in your work.
- 5. Do your own work.** The purpose of assignments is to develop your skills and measure your progress. Letting someone else do your work defeats the purpose of your education, and may lead to serious charges against you.
- 6. Never falsify a record** or permit another person to do so. Academic records are regularly audited and students whose grades have been altered put their entire transcript at risk.
- 7. Never fabricate** data, citations, or experimental results. Many professional careers have ended in disgrace, even years after the fabrication first took place.

8. Always tell the truth when discussing your work with your instructor. Any attempt to deceive may destroy the relation of teacher and student.

Source: <http://www.northwestern.edu/uacc/8cards.html>

Disabilities and Accommodation Policy

The University of Massachusetts Amherst is dedicated to providing equal opportunity/accommodations and access for every student. If you would like to request such accommodations because of a physical, mental, or learning disability, please contact your instructor or the Office of Disability Services, DS, (161 Whitmore Administration Building) within the first two weeks of class. Their phone number is 413.545.0892. "Any student with a disability who needs a classroom accommodation, access to technology or other academic assistance in this course should contact Disability Services (ds@educ.umass.edu) and/or the instructor. DS serves students with a wide range of disabilities including, but not limited to, physical disabilities, sensory impairments, learning disabilities, attention deficit disorder, depression, and anxiety."

Emergency Closings

As per University policy, I am required to include this information. In the event of severe weather or other emergencies which could force the university to cancel classes, such information will be broadcast over various radio and television stations. Students who reside in areas which fall under a Level III emergency should not attempt to drive to the university even if the campus itself remains open.

Assignments due on a day the university is closed will be due the next scheduled class period. If an examination is scheduled for a day the campus is closed, the examination will be given on the next class day. Students who miss a class because of weather-related problems when the class is held as scheduled are responsible for reading and other assignments as indicated in the syllabus. If an examination is missed, contact me as soon as possible to determine how to make up the missed exam. Remember! It is the student's responsibility to keep up with reading and other assignments when a scheduled class does not meet, whatever the reason.

Dropping and Withdrawal

The last date for withdrawal from this class **without a W** (no record) is **Monday, September 17, 2012**. The last possible day to drop this class **with a W** is **Thursday, October 18, 2012**.

**YOU ARE RESPONSIBLE FOR ALL CHANGES TO THIS SYLLABUS MADE
IN CLASS, REGARDLESS IF YOU ARE IN ATTENDANCE OR NOT**

Keys to Success in Organic Chemistry

During the course of CHEM 262 the amount of material covered over such a short period of time is so large that the significance of the "facts" being learned and the relationship of this knowledge to those diverse fields are lost. In this way, organic chemistry is identical to a foreign language. You wouldn't go into a foreign language never having looked over the vocabulary. Before the synthesis of elegant compounds and the appreciation of complex biochemical transformations can be appreciated, basic rules of nomenclature and reaction (our "**vocabulary**") and reaction mechanisms (our "**grammar**") must be mastered.

It has been my experience that success in organic chemistry requires much self-motivation and practice. Reading a chapter without doing problems is generally as useless as watching an undubbed foreign movie without subtitles, or reading a book about how to play a guitar and then attempting to play a concert in front of 15,000 people without any practice.

It has been said that the key to organic chemistry is merely **memorization**. This is **FALSE**. Believe it or not, the best way to succeed in this course is by learning and applying the fundamental concepts and by doing problems. Even nomenclature is best learned through practice and experience rather than straight memorization.

Flash cards will only take you so far in this course, as will become apparent in the later weeks. Not understanding the stuff on the flash card will not help you when asked about material in a slightly different matter than what has been presented previously. **Remember, the chemistry will never change, just the way that it is presented!!** If I asked you to, without a calculator, multiply 256×96 , most of us would need a minute or two to work it out. Somewhere along our childhood education, we had to memorize the multiplication table. But what happens when the table stops at a 12 by 12 matrix? You'll need to use your understanding of multiplication, i.e., break it down into smaller, more approachable problems one step at a time.

The exams will be prepared in a manner that requires a good understanding, not a good memory.

Study Habits that Worked for Me

- Study at a time day when you are alert. It is useless to study tired.
- After lecture, recopy all of your notes into a separate notebook. This takes a lot of time, but it ensures the material goes through your head again! Trust me, it works!
- Go through your notes and the textbook and write questions down as you go. You will forget them if you come to office hours not prepared to ask.
- Do all of the suggested problems in the text, and complete the problem sets I provide you without the answer key open next to you.
- Study 2-3 hours every day, 6-7 days/week. You will find that cramming for an exam is not necessary when you do this.
- **I cannot stress these last two points enough. Please take the advice of someone who struggled initially in organic chemistry.**

- Find a study partner or group, but no more than 3 people in said group. Anymore than this, we all start to get off topic too much and before you know it, you have "studied" for 3 hours. Your study time needs to be quality as opposed to quantity.
- Think about what you are doing, while you are doing it.
- Relax and do your best. If you work hard, it will pay off in the end!

September 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
WEEK 1	3.	4.	5. Lecture 1	6.	7. Lecture 2	8.
9. WEEK 2	10. Lecture 3	11.	12. Lecture 4	13.	14. Lecture 5	15.
16. WEEK 3	17. Lecture 6	18.	19. Lecture 7	20.	21. Lecture 8	22.
23. WEEK 4	24. Lecture 9	25.	26. Lecture 10	27. EXAM 1 7-9 pm	28. Lecture 11	

October 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
WEEK 5	1. Lecture 12	2.	3. Lecture 13	4.	5. Lecture 14	6.
7. WEEK 6	8. NO CLASSES! Columbus Day	9. Lecture 15	10. Lecture 16	11.	12. Lecture 17	13.
14. WEEK 7	15. Lecture 18	16.	17. Lecture 19	18.	19. Lecture 20	20.
21. WEEK 8	22. Lecture 21	23.	24. Lecture 22	25. EXAM 2 7-9 pm	26. Lecture 23	27.

October/November 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28. WEEK 9	29. Lecture 24	30.	31. Lecture 25	1. OCTOBER 1	2. Lecture 26	3.
4. WEEK 10	5. Lecture 27	6.	7. Lecture 28	8.	9. Lecture 29	10.
11. WEEK 11	12. NO CLASSES! Veterans' Day	13.	14. Lecture 30	15. EXAM 3 7-9 pm	16. Lecture 31	17.
18. WEEK 12	19. Lecture 32	20.	21. Lecture 33	22. 23. 24. Happy Thanksgiving! Enjoy the break!		
25. WEEK 13	26. Lecture 34	27.	28. Lecture 35 EXAM 4	29.	30. Lecture 36	

December 2012

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
WEEK 14	3. Lecture 37	4.	5. Lecture 38	6.	7. Lecture 39	8.
9.	10.	11.	12.	13.	14.	15.
FINALS WEEK Our time is TBD						
16.	17.	18.	19.	20.	21.	28.