Chemistry 4:123 (CHEM:2230:000A)  
Organic Chemistry  
Fall 2013

Professor:  Ned B. Bowden

Class Times:  Class is in 350 VAN on MWF from 10:30-11:20 AM.  
Tests are scheduled on Wednesdays from 6:30-8:00 PM  
The date for the final exam will be announced during the semester.  
Note: I do not have a make-up final. If you miss the final, you have to either take 
a zero or take the final at the end of the Fall 2014 session.

Contact Info:  W425 Chemistry Building  
335-1198  
ed-bowden@uiowa.edu

Course Website:  ICON, http://icon.uiowa.edu

IMPORTANT:  To reach me or set an appointment please send an email and I will try to respond quickly. I 
rarely answer my phone, so calling me is a waste of time.  Email is a much better way to reach me.

Office Hours  
I reserved these times for you and am happy to meet and discuss problems you are having. If these times 
do not work for you, we will set an appointment by email to meet another time.

My office hours are on Mondays and Wednesdays from 11:20 A.M.-12:50 P.M. in my office.

Discussion Sections  
Tatiana Mishanina will lead these discussions. This time is reserved for problem solving, discussion of 
lecture material, and explanations of exam answers. I strongly encourage you to attend these sections as 
the TA is excellent and can help you learn the material.

She can be reached at tatiana-mishanina@uiowa.edu. Her office hours are in E208CB on Mondays from 
1:30-3:30.

Why Are You in This Class?  
Organic chemistry is a beautiful subject! I taught this class before and know that most of you are “pre” 
students.  By this statement I mean that you are premed, prenursing, prepharmacy, prelaw, or another 
variant.  This class is required for entrance into a professional school or is needed to prepare you for a 
nationwide test.  These are all fine reasons for taking this class and I am glad you are here. My goal is to
teach you some of the most beautiful parts of organic chemistry in hopes that you may remember it down the road when I am one of your patients in an emergency room, dental office, or pharmacy.

In this class you are going to learn how to think critically. Organic chemistry is more than the memorization of a bunch of facts and it is certainly more than applying a few simple rules to get the right answer. **Organic chemistry is 90% science and 10% art**; I can teach you the right rules and how to think about problems in organic chemistry, but you must learn how to apply these rules. This class is considered tough because it is unlike others that you have taken before. You will not have a series of equations from which you may derive answers. You will have a bunch of facts and you must learn how to think critically to solve problems. Therefore, you must learn to think like a detective and piece answers together with everything that you know. I will help you as much as I can to learn these skills.

**How to Study for This Class**
This class is not one where you can look over the material right before the exam and expect to do well. This class requires constant and diligent effort in order to do well. I compiled a list of suggestions to help you succeed. These are only suggestions; some of you may be naturals at organic chemistry and can get by with less work, but for the other 99% of the class this list will help you get the grade that you want.

If you need extra tutoring, it is available through the University Housing Tutoring Program at [http://housing.uiowa.edu/departments/reslife/academic_initiatives.html](http://housing.uiowa.edu/departments/reslife/academic_initiatives.html). I am not affiliated with this program; I am passing the information to you nonetheless.

1. Study for this class at least two hours a day. Organic chemistry is hard to learn but with consistent effort you can do it. Some of you will spend more time; others will spend less time depending on your abilities, motivation, and expectations for a grade.

2. Do all of the homework and suggested problems. You will learn from doing the homework, you will learn by struggling with the homework! Learning occurs when you are forming questions in your mind and seeking the answers; learning does not happen when you are copying someone else’s work. Your grade in this class depends on your test taking skills so use the homework to learn the material.

3. Form study groups.

4. Skim the text before coming to class.

5. Go to the discussion sections and ask questions.

6. Rewrite your lecture notes. You will be surprised as to how much this will help you learn the material.

7. Study with a pencil and paper nearby! You will learn the material best by writing it down in your notebook as you are studying. Most people don’t learn well by sight alone, you must use your hands when you study.

8. Read the book. Reread the book. Rereread the book. The class is based on the material in the book so if you are happy with the material in the book you will do well in the class.

9. Study regularly!

**What You Should Take Away From This Class**
1. The ability to draw mechanisms for simple organic reactions
2. Knowledge of common reactions
3. Understand functional groups and how to convert from one to another
4. Understand how to apply organic chemistry to a variety of fields including most things biological.
5. The ability to name molecules and recognize key functional groups
6. Understand some of the how and why of organic chemistry.
Exams
There will be four hourly exams on the following days.

- September 18
- October 9
- November 6
- December 4

The tests will be held in w128 CB. The exams will last for 1.5 hours.

Leave all textbooks, models, notes, etc. at home or you will be required to leave them in the front of the classroom during the exam. The tests will be written to require short answers; I have yet to give a multiple choice question on any exam. The exams will be closed book and the answers should be written in blue or black ink. Exams written in pencil will not eligible for a regrade. Exams will be returned on the first class period following the exam and will be available at the chemistry center on the second floor of the chemistry building (E225 CB) immediately after that class. Your grades will be posted on ICON as soon as possible.

Each exam is comprehensive but will emphasize material since the previous exam. Organic chemistry builds on what was learned before, it is important to continually add to your fountain of knowledge. Exams must touch on material that was learned earlier in the semester, but in most instances I will use concepts that we covered since the previous exam. It is wise to review all of the material since Day 1 for each exam.

Anything that is covered through the end of class on the day before the exam is fair game for the exam. I more or less follow the book, so you will be able to determine where I stopped on the Thursday before the exam. If you have any doubt, study for the whole chapter that we are working on.

I will put old exams and their answer keys on line. Old exams are a poor method to determine what material will be covered on your exam. The reason for this statement is that I may emphasize different material from semester to semester, so the questions and material will differ from year to year. Do not feel that if you did well on an old exam you will do well on the regular exam. Before an exam, I will typically tell you what types of questions to prepare for, but I will not tell you what will or will not be on the exam. If it is in the book or was covered in class, it is fair game.

The final exam will be comprehensive.

Homework and Collaborations
Homework is critical to help you learn the material. A poor, but common way, to do the homework is to look at the problem and answer key. Many students will look at a problem in the book, write nothing down, and then look at the answer key. Is this how I will test you? Will I ask you a question, give you the answer, and then ask you if the answer is correct? The best way to do the suggested problems is to look at the problem, write down your best answer, and then look at the answer key. It is O.K. to struggle with the material, that is how you learn! You are expected to not know all of the answers immediately, you will learn quite a bit by determining the correct answer without the answer key.

I will assign homework on a regular basis. You will need to learn when homework has been assigned in class or from ICON. I will announce the homework in class and post it on ICON when I assign it. The homework will be assigned as “full collaboration”. That phrase means that you may work with your classmates, friends, tutors, or anyone else to complete the homework. You may work alone if you wish, but no penalty will be given to those who work together. This policy does not mean that you should copy someone else’s homework; that is not allowed and will be viewed as cheating. You must make an honest effort to complete the homework and understand the answers. One good method to know if you understand the answers is to ask yourself if you can reproduce your homework if it is lost. If you can reproduce your homework, you have some level of understanding of it. If you cannot reproduce it, you should go over it again until you can do so. Homework is an excellent vehicle for learning class material, take advantage of this opportunity and you will do well on the exams. There is an answer key for
questions from the book, but you may not copy these answers. You must answer each question in your own words.

Late Policy for Homework
I will make it very clear when the homework assignment is due. I will not accept homework that is turned in after I posted the answer key. If you are going to be late and have a good reason, you want to tell me before the homework is due. There will be a penalty for homework that is late but turned in before the answer key is posted.

Grading
The College of Liberal Arts and Sciences strongly suggests the following grade distribution.
18% A
36% B
39% C
5% D
2% F

The grade distribution will be close to these values, but it may vary based on class performance. Plus and minus grades will be given, they are left to the discretion of the instructor at the end of the semester.

You will be graded on the four hourly exams, homework, and a final exam. Your final grade will be calculated as follows.

Four hourly exams: 60%
Homework: 20%
Final exam: 20%

Your test scores will be posted on ICON. I will post the grade distributions for each exam on line so that you know how you did on each exam.

Regrades
If you feel that your test has been graded unfairly you can ask for a regrade. Write the reason for your regrade on the front of the test and submit it to me or the chemistry center after class within one week after the exam was available to be returned. The whole exam may be regraded. Regrades are not possible on tests written in pencil or erasable ink.

Make-up exams
Make-up exams will only be provided under exceptional circumstances. A valid, written excuse must be provided prior to a missed exam to the instructor. If you anticipate having a conflict with an exam, please see me ahead of time. If you miss an exam for unforeseen reasons and have not provided a valid, written excuse to the instructor prior to the exam, you have one week after the exam to provide me with a valid, written excuse. There will only be one make-up exam for each hourly exam.

Cheating
Our scientific environment is maintained through the actions of its members and the trust we place in one another. Scientists are expected to remain honest in their words and actions. When this trust is broken the results are often severe and career threatening. One should not cheat on the false assumptions that 1) no one is harmed if no one is aware of the cheating or 2) it is alright to cheat if you aren’t caught. A good scientist will hold themselves to a higher standard where cheating, even if it isn’t discovered, is wrong.

With this important responsibility comes the privilege of being a member of a community that values openness and truth. As you are all scientists in training I will expect you to act accordingly and with an upright manner. Anyone caught cheating will flunk and will be reported to the administration.

Attendance
Attendance is not mandatory but encouraged. I may introduce material outside of the book; you are responsible for learning that material as it **may appear on an exam**.

**Course Objective**
Organic chemistry books are written such that someone can earn money from their sale, to sell a book it must cover more material than is reasonable for a one year course. We will try to cover as much of the book as possible without going too fast. We will cover chapters 1-12 and 15.

**Required Textbook**
Maitland Jones, Jr. and Stephen A. Fleming “Organic Chemistry” Fourth edition, Norton publishing. We will cover chapters 1-12 and 15 this semester and possibly more. These 13 chapters form the basis for much of organic chemistry and will prepare you to excel in the second semester of organic chemistry. We will cover a chapter approximately every week, but some chapters will take more than a week.

**Suggested Textbook**
David R. Klein, Organic Chemistry I as a second language, 2nd edition, John Wiley and Sons. This book is an excellent vehicle to help you learn organic chemistry and would be wise to purchase.

**Suggested Model Kit**
The AXE house and the bookstore offers model kits and I strongly suggest purchasing one. It will greatly help you to "see" organic molecules in three-dimensions.

**Disabilities**
I would like to hear from anyone who has a disability which may require some modification of seating, testing, or other class requirements so that appropriate arrangements may be made. Please contact me during my office hours.
Dear all,

I know that organic chemistry is not an easy class and it will get harder as the semester progresses. Learning how to study is very important as this course may be very different from what you have taken before.

Last year I asked some of the top students in Organic Chemistry for Majors what they did to prepare for the exams. I hope their responses help provide motivation/insight/suggestions that you need for success too. Their unedited comments are below.

You can learn this material. It may not be easy for most of you, but you can do it. It requires time, effort, practice, and an engaged brain.

Best, Ned

**Student 1**

To study for the exams, I make sure I am prepared by watching every lecture AND taking notes on the print outs as I watch. Doing the homeworks is good preparation as well. I do most of it/all that I can individually, but then I meet and study with a group in order to get help and help others. Working in a group is really helpful. I also take the practice exams before each actual exam along with looking over my notes several times.

**Student 2**

The homework is the most helpful thing for me - it forces me to sit down and review the concepts each chapter covers. I try to start the homework about a week before it is due so I am not rushed through it. I also have a group that gets together to work through the problem sets about twice each week. Within the whole group, at least one of us usually has a good idea of the correct answer for challenging problems. We disagree frequently on how to approach a problem, but that's good because is forces us to analyze the material more closely. Working on homework in a group has been a major part of being able to learn these concepts.

I also make sure to watch each lecture online and take notes on the provided slides as well. Watching the lectures online before lecture makes working problems during lecture time more beneficial because I actually have an idea of what is going on.

Before the second exam I read chapter 7 of Jones/Fleming. I also skimmed through each practice problem in the book to get an idea of what I should be able to do for the test. I did not work out every single one, but I worked out the ones that dealt with concepts I found more difficult. Taking the practice exam was helpful as well - it gave me an idea of what I needed to spend more time on and helped to guide my studying.

The day before the exam I went through all of the notes from online lectures and from lectures in Van Allen and noted anything I was confused by. I then went over that material plus the material from exam 1 (briefly) to complete my preparation for exam 2.

**Student 3**

I always try to watch the online lectures before class so I know what's going on with the practice problems in class. For the Sn2, E2, etc chapter in particular, I made sure to start the homework early and
do little chunks each night. The biggest thing I did that was helpful was to make charts or study guides summarizing the general trends, and make notes about things I tended to mess up so I don't do it again. I also study in a group a lot.

**Student 4**

What works for organic chemistry is exactly what you recommended at the beginning of the semester: listen to the lectures before class, make sure to understand the problems from class, do the homework before the night before it is due to really understand it, go over the practice exam, go through the problems in the back of the book, and come into office hours with any questions. I try to make sure that I understand the concepts behind the problems, and not just look at the answer to the question. The "Organic Chemistry as a Second Language" book also really helped me understand the different kinds of reactions for this exam. Another thing that really helps me is going over my homework after it is graded so that I understand the types of mistakes that I make so I know what to watch out for on the exam.

**Student 5**

I usually read the chapters in the book before we discuss them in class, so I have a solid background with which to approach class problems. I pay special attention to the "worked problems" in the book and try to understand how the writers are approaching these problems and coming to the answers. When we have problems in class that I can't solve, I try to go back after class to figure out what I was doing wrong and how I should have approached the problem.

Practice problems. Lots and lots of practice problems. I also went back and listened to the online lectures for Chapter 7, since that was the most difficult chapter on this test for me.
Administrative Home
The College of Liberal Arts and Sciences is the administrative home of this course and governs
matters such as the add/drop deadlines, the second-grade-only option, and other related issues.
Different colleges may have different policies. Questions may be addressed to 120 Schaeffer
Hall, or see the CLAS Academic Policies Handbook at http://clas.uiowa.edu/students/handbook.

Electronic Communication
University policy specifies that students are responsible for all official correspondences sent to
their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this
account for correspondences (Operations Manual, III.15.2, k.11).

Accommodations for Disabilities
A student seeking academic accommodations should first register with Student Disability
Services and then meet privately with the course instructor to make particular arrangements.
See www.uiowa.edu/~sds/ for more information.

Academic Honesty
All CLAS students have, in essence, agreed to the College's Code of Academic Honesty: "I
pledge to do my own academic work and to excel to the best of my abilities, upholding
the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the
words or ideas of others; nor will I help fellow students to violate the Code of Academic
Honesty." Any student committing academic misconduct is reported to the College and placed
on disciplinary probation or may be suspended or expelled (CLAS Academic Policies
Handbook).

CLAS Final Examination Policies
The final examination schedule for each class is announced around the fifth week of the
semester by the Registrar. Final exams are offered only during the official final examination
period. No exams of any kind are allowed during the last week of classes. All students
should plan on being at the UI through the final examination period. Once the Registrar has
announced the dates and times of each final exam, the complete schedule will be published on
the Registrar's web site.

Making a Suggestion or a Complaint
Students with a suggestion or complaint should first visit with the instructor (and the course
supervisor), and then with the departmental DEO. Complaints must be made within six months
of the incident (CLAS Academic Policies Handbook).

Understanding Sexual Harassment
Sexual harassment subverts the mission of the University and threatens the well-being of
students, faculty, and staff. All members of the UI community have a responsibility to uphold this
mission and to contribute to a safe environment that enhances learning. Incidents of sexual
harassment should be reported immediately. See the UI Comprehensive Guide on Sexual
Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather
In severe weather, class members should seek appropriate shelter immediately, leaving the
classroom if necessary. The class will continue if possible when the event is over. For more
information on Hawk Alert and the siren warning system, visit the Department of Public Safety
website.