Chemistry 4:121
Organic Chemistry
Spring 2010

Professor:  Ned B. Bowden

Class Times:  TTh 11:30-12:45 in W290 CB.
Tests are scheduled on Wednesdays.
Final exam is scheduled for Monday, May 10th starting at 7:30 AM.
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 Summer or Fall 2010
session.

Contact Info:  W425 Chemistry Building
335-1198
chemistry121@yahoo.com

IMPORTANT:  To reach me or set an appointment, please send an email and I will try to
respond quickly.  I set up a special email account exclusively for this class, please use the
Yahoo address.  I get numerous emails sent to my uiowa account, and I often take a day or two
to respond to these email messages. Your education is critical to me, so I set up a special email
account on Yahoo so that I know which emails to respond to ASAP. At the conclusion of the
semester you may reach me at my U of IA email account.

Office Hours and Problem Solving Tuesdays
I reserved these time 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 Tuesdays from 4:00 to 5:20 P.M. and 10:00-11:30 A.M.  The office hours on
Tuesday morning are in my office.
We will have “Problem Solving Tuesdays” beginning on January 26. They will be held every Tuesday from 4:00 to 5:20 PM. I will bring other organic chemistry books so that we may work through questions that are not in your textbook but cover the same material. I strongly encourage you to come with questions, we can tailor these meetings to cover what you are struggling with.

This time period is specifically designed to give you a chance to work problems with some assistance or to clarify a concept that you are struggling with. You will get the most out of these sessions if you have done the homework, read the chapters, and applied yourself towards learning the material prior to each session. I am holding these sessions in a large lecture hall so that everyone may come and partake. *I want everyone to do well in this class and learn to appreciate some of the depth of organic chemistry.* It is a tough subject for many, but there are unifying concepts that greatly simplify the learning process and allow one to organize their thinking.

For the sake of clarity, these sessions will be held on the following dates in W290 CB.

January 26
February 2, 9, 16, 23
March 2, 16, 23, 30
April 6, 13, 20, 27
May 4

These problem solving sessions will also be review sessions for exams.

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

I am often asked if by students if they can attend a discussion section they are not registered for. I understand that nearly every discussion section is filled to capacity, so some of you had to register for a discussion section you may not be able to attend. That stinks! If you were forced to register for a discussion section that you could not attend, feel free to attend one that fits into your schedule. If we have too many people attending a discussion section, we will have to move the room or limit attendance to those already attending.

**Teaching Assistants**
The TAs and their office hours will be listed on the syllabus on ICON.

**Where to Find Course Notes**
I will lecture by tablet PC and chalkboard so no course notes are available. If you miss class, I encourage you to get the notes from someone who was there.

**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 one hour a day. Organic chemistry is hard to learn but with consistent effort you can do it. This is a three semester hour class so you should spend six hours a week outside of class learning this material. 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 happens 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 homeworks 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 in the evenings/nights.

- February 10th: 5:30 to 7:30 in MH AUD
- March 10th: 8:00 to 10:00 in MH AUD
- April 7th: 8:00 to 10:00 in MH AUD
- April 28th: 5:30-7:30 in MH AUD

The different time for the exams is due to problems in scheduling room assignments. Please make a note of the exam time for each date so you show up on time.

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 Tuesday 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.

Also, the exams are on Wednesdays. 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 Tuesday 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**

Homework is critical to help you learn the material. You should expect to work all of the problems in each chapter. Unfortunately, we do not have the ability to fairly grade homework so it will be up to each individual to complete it. To provide motivation to do the homework, each exam will have at least 1/3 of the points taken from questions pulled directly from the suggested problems found at the end of the syllabus.

**Quizzes**

To keep you on your toes, we will have weekly quizzes to be administered at the beginning of your discussion sections. These quizzes are meant to see that you are learning this material and keeping up with the course. Cramming before exams does not work well in organic chemistry, a more even approach to learning material all semester will help you adsorb and understand it better.

It will be logistically impossible to give make-up quizzes so none will be offered. I will drop your three lowest quiz scores and allow you to take a quiz in a different discussion section if necessary. I strongly prefer that everyone take the quiz in their discussion section, but you can take it in another section if you must. If it becomes a problem that some discussion sections are full, I will limit entrance to the room to those who are registered and only a few others. If you must miss the quiz, you should contact me with your reason.

Your quizzes will be returned the week after they were administered. If you do not understand why your answer was incorrect, please first talk to your TA about it.

**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, quizzes, and a final exam. Your final grade will be calculated as follows.

Quizzes: 10%
Four hourly exams: 70%
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 are ill, you must provide a written excuse signed by a doctor. 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 this class and will be reported to the administration.

Surveys
I will post a periodic survey on ICON to gauge how things are going such that I can alter things if necessary. These surveys will be anonymous and I will appreciate it if you take the time to complete them. I will try to figure out how to give an extra point or two to those who complete a survey. I will announce in class when a new survey is up, and I will also post a notice on ICON.

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 the first fifteen chapters, but this may be altered a bit at the end of the semester.

Textbook

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.

Classroom Cleanliness
We meet in a large lecture hall that is used for class meetings most of the week. This room often becomes cluttered with trash such that classes that meet late in the day have to climb over trash to get to their seats. It costs over $110,000 to keep some of these large classrooms clean, so the money invested in cleaning could pay for the education of numerous students. Please remember to keep this room clean and to throw out your trash as you leave. It is the courteous thing to do.
Required Announcements

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 Student Academic 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. Scroll down to 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 Fraud
Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Academic Fraud section of the Student Academic Handbook.

CLAS Final Examination Policies
Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

Making a Suggestion or a Complaint
Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic 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 Public Safety web site.
Suggested problems

Although you have an answer key, you should not use it until you are convinced that you have the right answer. Struggling with a problem is great, you will learn something by struggling with it until you have the correct answer. If you struggle, give up, and look at the answer key, you will have learned nothing.

These are some of the most interesting problems, feel free to do more of them.

Chapter 1: All of the problems integrated with the text, 36, 37, 38, 39, 40, 42, 43, 44, 45, 46, 49, 52, 54, 55, 57, 59, 61, 63, 65, 67, 68, 70, 73, 75, 76, 79, 80, 84

Chapter 2: All of the problems integrated with the text, 28, 29, 31, 32, 35, 36, 37, 39, 40, 42, 43, 45, 47, 49, 50, 52, 53, 54, 56, 57, 58

Chapter 3: All of the problems integrated with the text, 15, 16, 18, 20, 21, 22, 23, 26, 28, 30, 32, 34, 36, 37, 38, 39, 40, 42,

Chapter 4: All of the problems integrated with the text, 37, 40, 42, 43, 44, 45, 47, 48, 51, 53, 54, 56, 57, 59, 61, 62, 64, 66, 67, 69

Chapter 5: All of the problems integrated with the text, 33, 34, 35, 37, 39, 41, 43, 44, 46, 47, 48, 50, 52, 55, 57, 58, 60, 63, 64

Chapter 6: All of the problems integrated with the text, 24, 25, 26, 28, 29, 30, 34, 35, 37, 38, 41, 42, 43, 44, 45, 46, 48, 49, 50

Chapter 7: All of the problems integrated with the text, 42, 45, 46, 48, 50, 51, 54, 55, 57, 58, 61, 62, 63, 64, 65, 67, 69, 70, 73, 75, 77, 79

Chapter 8: All of the problems integrated with the text, 25, 27, 28, 31, 32, 34, 35, 37, 39, 40, 41, 44, 46, 48, 49, 51, 52, 53, 55, 57

Chapter 9: All of the problems integrated with the text, 40, 41, 43, 44, 46, 48, 49, 50, 52, 53, 55, 56, 57, 58, 59, 61, 62, 63, 65, 66, 67, 70, 71, 73, 75

Chapter 10: All of the problems integrated with the text, 35, 37, 40, 42, 44, 45, 46, 48, 49, 50, 53, 56, 57, 58, 60, 61, 62, 63, 65, 67

Chapter 11: All of the problems integrated with the text, 27, 28, 30, 31, 32, 34, 35, 36, 38, 40, 41, 43, 44, 46, 47, 48, 50, 52, 54, 55, 56

Chapter 12: All of the problems integrated with the text, 31, 32, 34, 35, 37, 39, 41, 43, 45, 46, 47, 49, 51, 52, 53, 54, 55, 59, 60, 64, 66

Chapter 15: All of the problems integrated with the text, 35, 36, 37, 39, 41, 42, 44, 45, 46, 48, 50, 51, 54, 55, 57, 59, 61, 63, 64, 65, 66, 68, 71, 72

I will put suggested problems for chapters 13 and 14 when we approach those chapters.