

**CHE-141**  
**Organic Chemistry I**  
**Spring 2006**  
**Gustavus Adolphus College**

Prof. Scott Bur

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**Textbook:** Organic Chemistry, Brown, Foote and Iverson; 4<sup>th</sup> edition (2005)  
**OPTIONAL:** Student Study Guide and Solutions Manual for Organic Chemistry, Iverson & Iverson, 4<sup>th</sup> Edition, (2005)

**Supplies :** Molecular models. These are not a requirement, but I strongly urge you to purchase a set. You may use the model sets during the exams. I still have (and use) the set I bought for Organic I.

**Classroom:** 8:00 am - NHS 201  
11:30 am Wallenburg auditorium, Nobel Hall

**Office Hours:** My scheduled office hours are the following, or by appointment;  
Mon - Tue - Thu: 9:00 to 10:00 am

**Attendance**

Attendance at the class lectures is important to your understanding and enjoyment of chemistry. You will be responsible for anything that is announced or discussed in lecture.

**Homework:**

I will give you a selection of homework problems out of the textbook to do as we cover each topic in class. You should try to work the assigned problems on a regular basis, rather than trying to do them all right before the exam. Any questions that you have with regard to the homework problems are welcome as topics for discussion during or outside of class. These homework problems will not be collected for a grade. As the exams will reflect the concepts and skills that the homework will develop, however, your grades will ultimately reflect your performance on these homework problems.

At the beginning of each week, you will be given an additional set of homework problems that **will be collected for a grade each Friday on which there is not an exam**. These assignments must be turned in at the end of class to be graded. Because chemistry is a collaborative science, you are encouraged to work with others as you are trying to work both the textbook problems and the homework sets. It is, however, important to distinguish between working with someone, receiving help from someone,

and copying someone else's work. Obviously, copying someone else's work is **unacceptable**, and you will receive a zero for assignments.

### **Quizzes:**

During the semester, I will give short quizzes at the end of class each Friday on which there is not an exam. These will be brief, short-answer or multiple-choice questions to test your basic understanding of the topics covered during the week.

**Makeup quizzes will not be given under any circumstances!** The combined average of homework and quizzes can be used to replace your lowest hourly exam score.

### **Exams:**

There will be four 1-hour exams that will consist of short answer and/or multiple-choice questions. In addition to asking you to be able to recall facts and principles from lectures and textbook readings, you will be asked to extend the principles you learned to new situations and to offer explanations of the behavior of compounds with which you are not familiar. Each exam will be "comprehensive," because each new concept builds upon previous material. So you will need to know material from earlier units. The average of your homework and quiz scores can be used to replace your lowest test score. Test dates are as follows: February 24; March 17; April 13; and May 12. The final exam will be comprehensive, and will be in the NHS AUD on Saturday, May 20 from 3:30 - 5:30 pm.

### **Academic Honesty**

I expect you to be honest. The policy of the college states in part:

*...Gustavus Adolphus College expects all students to adhere to the highest standard of academic honesty, and to refrain from any action that impinges upon the academic freedom of other members of the college community. In all academic exercises, examinations, presentations, speeches, papers, and reports, students shall submit their own work.... In the case of cheating or plagiarism, the instructor will inform the student and the office of the Dean of the Faculty of the nature of the offense, the penalty within the course and the recommendations of the instructor as to whether further disciplinary action by the dean is warranted.*

Anyone caught cheating on an exam or assignment will receive a grade of 0 for that exam or assignment. Repetition will result in an F for the course. If you have any questions about these policies, please come see me, or refer to the Gustavus Guide.

## Grading

**This is important, so please read it twice:** Your lowest hourly-exam grade (not the final) can be replaced with your average grade on the homework assignments and quizzes. One bad exam will not necessarily ruin your grade. The breakdown of your grade is as follows:

Four one-period exams/ homework & quizzes .....	60%
Comprehensive final exam.....	20%
Laboratory.....	20%

Please note that the grade is based upon your cumulative point total. Laboratory performance is not graded separately then averaged. The total of your lab reports and notebook entries will be normalized, weighted, and added to your cumulative score before grades are assigned. *Also note that there is inherently some ambiguity due to the ability to replace the lowest exam score.*

The final cumulative total will be assigned a grade based upon a bell-style curve. The average of the curve will be set to a B-, and the remaining grades will be based upon the standard deviation. This will become clear as the semester progresses. You will be offered opportunities to deviate from the standard curve with extra credit.

**Extra Credit:** On each of the homework assignments, there will be one or two problems of a more complex nature. These will be optional, but will count as extra credit. Problems of a similar nature will also appear on the exams, also for extra credit.

The extra credit accrued throughout the semester will not be figured into the scores used to establish the curve. Once the curve is established, the extra credit points will be added to the raw score and a grade assigned based upon the raw-score curve.

## Study Hints

Success in organic chemistry requires practice. Much of the information builds upon concepts previously presented; **frequent review is essential.** Here are a few tips to help keep the course material under control:

### I. Keep Current

Actually, stay one step ahead. Read the textbook material corresponding to lecture material before coming to that lecture. You will be able to ask questions and make the class work for you. Read through the homework problems at the end of the chapter before you read the chapter text. Look for answers to these questions as you read. In other words, use the homework to guide your reading.

Regular attendance and active participation in class is helpful to you, to me, and to your fellow students. It helps you clarify any difficulties you encounter. At times, the course lecture and questions asked by your colleagues will identify and address a weakness of which you were not aware. Your questions in class help me to know where you are encountering difficulties. Finally, and very importantly, your attendance and questions will help your fellow students in much the same way they help you. Your insights may be precisely what they need to help them understand.

You will find it helpful to review your notes from each lecture before you attend the next one, and to reread text sections. This will help you detect difficulties early enough to prevent any snowballing. More importantly, it will help make the lectures more useful and understandable.

## II. Do the homework problems

You understand a concept only to the extent that you can explain it to another, or apply it to yourself. It is not enough to have read or heard an answer, or 'followed' an example presented in class. You must be able to do it, explain it, or apply it to another problem. The assigned problems from the textbook will direct you toward the important features of each topic. Try to work all of these problems (and more)! As you work the problems, keep in mind that it is the process of reaching the solution, not the answer, that is most important. If you cannot do a problem, consult your textbook, your notes, or me. If you check the solutions manual before trying to work the problem first, the problem has lost its usefulness.

## III. Ask Questions

If you have a question in class, the odds are that someone else has the same question. Feel free to ask questions in class. The office hours listed (first page) are those in which I guarantee I will be available. However, I will also be in my office at other times and will be willing to see you if I am free. If the listed times are not convenient, see me and we will arrange a time to meet.

*If you have specific physical, psychiatric or learning disabilities and require accommodations to help you fulfill these expectations, please let me know during the first week of class so that your learning needs may be appropriately met. You will need to provide documentation of your disability to Lori Beckett in the Advising Center (204 Johnson Student Union.) All discussions will remain confidential.*

## Course Coverage

In first semester organic chemistry (the chemistry of carbon-containing compounds), we will learn the language and many of the principles governing organic chemistry. We will study molecular structures, nomenclature, reactions, and reaction mechanisms of alkanes, alkenes, haloalkanes, alcohols, and ethers. We will also learn about some of the analytical tools used for structure identification.

The schedule below gives a tentative outline of the topics we will study. Note that this schedule can change depending on how much time we need to spend on a subject.

Topic	Reading	Lectures
Bonding and Structure	Chapter 1	Feb 6 - 10
Alkanes and Cycloalkanes	Chapter 2	Feb 13 - 17
Chirality	Chapter 3	Feb 20 - 27
<b>EXAM I</b>	<b>Ch 1, 2, 3</b>	<b>Feb 24 (Friday)</b>
Acids and Bases	Chapter 4	Feb 28 - March 3
Alkenes	Chapters 5 & 6	March 6 - 10
Alkenes II	Chapter 6	March 13 - 16
<b>EXAM II</b>	<b>Ch 4, 5, 6</b>	<b>March 7 (Friday)</b>
Haloalkanes	Chapter 8	March 20 - 24

**Spring Break (March 25 - April 2)**

Nucleophilic Substitution	Chapter 9	April 3 - 10
$\beta$ -Elimination	Chapter 9	April 11 - 12
<b>EXAM III</b>	<b>Ch 8, 9</b>	<b>April 13 (Thursday)</b>
Infrared (IR) spectroscopy	Chapter 12	April 18 - 21
NMR Spectroscopy	Chapter 13	April 24 - May 1
Alcohols and Thiols	Chapter 10	May 2 - 9
<b>EXAM IV</b>	<b>Ch 10, 12, 13</b>	<b>May 12 (Friday)</b>
Special topics		May 11 - 17