

Organic Chemistry 212

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Office Hours: Monday and Wednesday, 9:00am – 9:30am & 12:30pm – 1:00pm and Tuesday, 4:00pm – 5:00pm

The best time to ask questions is right after class, you may ask me questions during lab. I have an open door policy when it comes to working with students, if my door is open I'll try to help you. Office hours will be posted and announced. If none of these times is convenient, then either call me, or see me after class about arranging a mutually convenient time.

You can contact me at (562) 860-2451 x2624 or E-mail: lwaldman@cerritos.edu.

Please indicate your name and how I can contact you.

Tutoring may be available in the learning center, if you request it.

This is intended as a set of general guidelines for Organic Chemistry 212, Cerritos College and your instructor reserve the right to make changes in content and scheduling, to meet administrative guidelines and to promote the best educational environment possible for the conditions affecting this course. Because each class is different, portions of this syllabus may be changed during the semester.

Course pre-requisites: This Organic Chemistry course requires a basic understanding of the principles of chemistry, basic laboratory skills, mechanisms, reactivity, naming, syntheses and processes. Consequently, the successful completion of General Chemistry 111 and 112 and Organic Chemistry 211 or the equivalent is required.

Materials:

LECTURE TEXT: Organic Chemistry, 7th Edition, , by Francis A. Carey ; Mc Graw Hill, 2007.

STUDY GUIDE AND SOLUTIONS MANUAL (optional).

MODEL KITS: It is recommended that you purchase an organic model kit either from the school store. It is important that you use the model kits to build molecules and observe the three dimensional structure. One goal for this course is that you can take a two dimensional picture on paper and envision the three dimensional structure. Models will help tremendously in this regard.

Course description: Organic Chemistry is the study of the physical and chemical properties of Organic compounds. Organic compounds will be classified into families, and the physical and chemical properties of each family will be discussed as well as the naming of the members of the family. Structure and physical property relationships will play an important role in this course. Major chemical reactions associated with each family will be the main focus. We will be studying the chemistry and reactivity of different families of organic compounds as determined by their functional group. There will be an emphasis on mechanisms and understanding how these reactions occur. One of the goals of this course will be for you to be able to picture the molecules three dimensionally. Organic reactions will be viewed for their synthetic value, and mechanistic theory of reactions and structural theory will be applied. We will study how chemists characterize organic compounds using both chemical methods and spectroscopy. Organic chemistry is essential for those who wish to continue in health or science fields.

Instructional method: At the start of class there may be a quiz or exam. After the quiz, you may ask for clarification of previous work, or upcoming topics. Classroom lecture will be supplemented with discussion. Collaborative efforts among students will be encouraged. Study groups are encouraged. I recommend the use of molecular model kits. Students are held to standards similar to those found in the workplace. The assignments should be completed on time and reflect a willingness to learn

Evaluation procedures: The course is composed of two portions- lecture and lab. The lecture portion composes approximately two thirds of the points in the course. The methods of evaluating your understanding of lecture material include both quizzes and exams.

Quizzes:

Quizzes will be announced and will begin at the start of class, there are no make up quizzes and there will be no extra time given. Unit quizzes will occur as required between exams and will be used to determine your preparedness for long problems. The quizzes are based on lecture material and assigned problems.

Pop quizzes will begin at the start of class there are no make up quizzes and there will be no extra time given. Please arrive on time. The topics covered on the pop quizzes encompass the previous evenings reading assignment. It is crucial to read the lecture material ahead of time, these quizzes depend on your being prepared for lecture. The questions are designed to be answered quickly and will have a short time limit.

No make-up quizzes will be given. In both lecture and lab, quizzes and exams will start at the beginning of class. Students who arrive late will not be given extra time.

Exams: Exams may cover problems in the textbook that were not specifically discussed in class, or lecture topics that are not in the text and questions based on laboratory experiments. It's best to try the questions in your book before using the solution manual. The exams will definitely contain material from the assigned problems. The format for exam questions will be a combination of multiple-choice and problem solving. While the majority of exam questions will be based on information presented in lecture, text and homework, some questions will ask the student to apply information to new or different situations. Lectures are intended to highlight specific subjects in order to focus student's studies. Information within the text should be used to better understand the subjects highlighted during lecture. Each exam will take approximately 80 minutes.

Make-up exams will only be given to students with a doctor's note.

Special circumstances

Students required to miss examinations due to religious holidays, and students with disabilities requiring special consideration, must notify the instructor of this fact at least one week before the scheduled date. Students with an unexcused missing grade will not receive "additional consideration" in deciding borderline grades.

Final Examination: The final examination will be comprehensive including all material covered in lecture or in the book. It will be a standardized nationwide exam developed by the American Chemical Society. Some questions on the standardized test may not have been discussed in the course. Nevertheless, you must complete all of the questions. It will be administered in the classroom at the assigned time in class schedule (tentatively 12:00-2:00 PM on Thursday, May 18, 2006). The final will be multiple choice and true/false and will require a Scantron form 882.

Please bring a Scantron form 882 to the final

Grade Changes: Exam Answers will be posted as soon as possible following the exam on the bulletin board located next to the lab room (NS-6). Look over your exam carefully. If you have any questions concerning the grading, see me **within 7 days** following the return of the exam and posting of the answer key. I will then regrade your entire exam, paying particular attention to your question. Make no marks on the exam until you are satisfied with the grade. If you are suspected of changing answers on your exams and then submitting them for a regrade, you will be dealt with in accordance with school policies on honor (see below).

Recommended Problems for Lecture: Problems from your textbook are recommended. Although these assignments will not be collected for grading, students are encouraged to complete them in order to understand the lecture subjects more thoroughly. Many of the quiz and exam questions are related to the textbook problems. Students are encouraged to work in groups and attend tutoring for help. There will also be exams available online. These are old exams and the content may vary from what is on your exam, Please look over all of the old exams to ensure that you have seen the correct practice.

Honor: All work submitted under your name in this course is pledged as being your own work. This applies not only to quizzes, tests, and examinations, but also to laboratory reports. In particular, consulting lab notebooks or lab reports from previous years of this course is considered cheating. All laboratory reports should be prepared individually. Cheating will not be tolerated and offenses will be dealt with according to Cerritos College policy and procedures.

Disabilities: Cerritos College is committed to providing equal access to programs and services for all students. Under Cerritos College policy and federal and state laws, students with documented disabilities are entitled to reasonable accommodations to ensure the student has an equal opportunity to perform in class. If any member of the class has such a disability and needs special academic accommodations, please contact disabled student services, as soon as possible to discuss possible accommodations. Do not hesitate to contact me if any assistance is needed in this process.

Withdrawal policy: If you are unable to complete this course, you must withdraw from the course and *check out of lab before finals begin*. If you stop and do not withdraw by the withdrawal date (**See Class Schedule: April 18, 2008**), you will receive a performance grade of an "F". If you do not check out of lab before final exams begin your records will be placed on hold.

Incomplete Grades: An incomplete is not a device to avoid a failing grade. I strongly discourage Incomplete grades and allow them only in emergency circumstances.

Reminder of study time requirements:

Remember that this is a five (5) unit course which means that you are expected to study a **minimum** of ten (10) hours **each** week for this class. Furthermore, if you are weak in your previous knowledge you will need to study more hours. It is your responsibility to keep up with all assigned readings, no matter what your other responsibilities are!

What I assume you know from last semester:

- 1) Stereochemistry- terminology, identification and prediction of products
- 2) Spectroscopy- terminology, identification of products, theory. (Includes: IR, UV, PMR CMR, and MS)
- 3) Free radical halogenation- terminology, synthetic conditions, prediction of products and ratios
- 4) Nucleophilic substitution- terminology, synthetic conditions, prediction of products and approximate ratios
- 5) Elimination- terminology, synthetic conditions, prediction of products and approximate ratios
- 6) Electrophilic Addition Reactions (and other reactions of alkenes and alkynes)
- 7) Regarding reactions you should know;
 - a) how the reactions are controlled.
 - b) preferences for reactive sites (selectivity).
 - c) conditions required to promote a specific reaction.
 - d) how to correctly draw complete mechanisms including formal charges.
 - e) how to correctly draw intermediates including formal charges.
 - f) how to correctly draw transition states including formal charges.
 - g) determine oxidation states.
 - h) determine hybridization.

Suggestions from previous students on how to improve your grade:

This semester builds on concepts you learned in General Chemistry. Come for help immediately if you begin to fall behind. The key to success in this course is to learn the basic material and to apply it to solving problems. Read your lecture notes and the book and then try to solve some problems on your own.

1. Start reading and practicing problems immediately. If the first problems seem easy, skip them and move to more difficult problems. Randomly select portions of problems when there are multiple parts.
2. Search for practice problems on the internet.
3. Read the chapter before it is discussed in lecture.
4. Study every day. (These topics cannot be crammed into an all night study session!)
5. Study with others for a portion of your studies.
6. Complete the textbook problems. (These questions resemble quiz and exam questions)
7. *Read the solution to the problem only after giving your best effort to solve it.*
8. Create and maintain an index flash card file of the various Organic Chemical Reactions covered throughout the course showing the net reaction on the front and the mechanism (if covered) on the back of the card. (Especially important for the final).
9. Recopy your notes and take notes from the text to reinforce new material.
10. After exams make sure to understand mistakes and correct misconceptions immediately.
11. Do the pre- lab assignment before coming to lab so that you can participate in lab that day.
12. Keep up your lab notebook, don't try to finish it just before the quiz.
13. Practice writing mechanisms immediately after learning them.
14. Practice synthesis by trading problems with a partner and solving them. Then, check each others' answers.