Chemistry 211, Organic Chemistry Lecture

Fall, 2000 - A Hour, Room 205 Kennedy Hall
Dr. Richard Redfearn
Office – 409 Kennedy Hall
843-3960 (o), 272-3472 (h); redfearn@rhodes.edu

Description: This course will consist of a general survey of elementary theory, preparation, reactions, and properties of the compounds of carbon, containing the most important functional groups. We will accomplish this survey by exploring the underlying principles of reactivity of organic compounds.

Goals: To be successful in this course, the goals that you should work towards are:

1. Applying what you learned in General Chemistry to be able to understand the basics of physical and chemical properties of organic compounds.

2. Gaining the ability to identify organic functional groups by name and structure; also to identify the types of reactions each organic functional group undergoes, organized by mechanism.

3. Learning to understand and describe the practical uses of organic compounds - in medical research, industry, and everyday life.

4. Achieving the ultimate goal of understanding the relationships between chemical structure vs. reactivity and vs. physical/chemical properties of organic compounds and materials.

Note: Your goals in this course should not only be to memorize a series of organic transformations, but to understand and demonstrate how these many different reactions all flow from a basic set of fundamental principles. You will then be able to apply your knowledge of known systems to new ones.

Text: Brown, W. H.; Foote, C. S. Organic Chemistry, 2nd ed. On reserve in the library are: the study guide to the text; Weeks, D.P., Pushing Electrons: A Guide for Students of Organic Chemistry; and Bank, S.; Bank, J., 1001 Ways to Pass Organic Chemistry: A Guide for Helping Students Prepare for Exams. These books may be ordered from the bookstore if you find them useful. The bookstore also has a supply of relatively inexpensive molecular models, which are highly recommended.

Evaluation: Your final grade will be earned with three hour-long exams (100 points each), plus the average of 10 weekly quizzes (100 points), and the final exam (200 points). About weekly quizzes: you will take 14 quizzes, and I will drop your four lowest quiz grades, averaging the 10 highest grades for the 100 points. The advantage of taking these short little tests is for you to get an evaluation of your progress that week. This will keep you on track and give me valuable feedback about my teaching effectiveness.

The grading scale is:

A	558-600 points
A-	540-557
B+	522-539
B	498-521
B-	480-497
C+	462-479
C	438-461
C-	420-437
D+	378-419
D	336-377
D-	300-335

Policies: Your attendance at every lecture is expected and is important to effective progress in this course. You will get the most out of the lectures by being prepared - each reading assignment should be read twice, once quickly and then in detail. Problem assignments should be done promptly, since these assignments are designed to help clarify the lecture material. I will open each lecture with the question “Do you have any questions from the assigned problems?” However, assigned problems will not be graded.

If you find it necessary to miss a class, check my folder on the academic volume for the reading assignment for the next lecture, and any assigned problems for the lecture that you missed. You will be allowed to make up a missed quiz/exam only with an excused absence. If possible, you should let me know ahead of time if you are unable to take a quiz or exam at its scheduled time. If your absence for a quiz or exam is not excused, you will receive no points for that evaluation.

I strongly encourage the use of molecular models, and you may use them during exams.

Of course, the Honor Code governs your behavior in this class, and all work turned in for grading must be pledged to be your own. The lecture schedule is only a rough guide, and most likely will not be strictly adhered to. The exam schedule will be followed exactly, and I will announce what material will be covered in advance of the exam date. Quiz questions will be selected from assigned problems or similar ones.

My door is always open to you for questions regarding your progress in this class, and I am very interested in helping you to be successful in your study of organic chemistry. Please feel free to drop by Kennedy 409, or see me in one of my labs on the fourth floor (my schedule will be posted on my office door). I will answer voice mail or email within 24 hours of receipt.

Tips on doing well in organic chemistry:

1) Never miss a class. Furthermore, pay attention and take good notes while in class. You ought to review your notes daily. Count on 1½ to 2 hours of study for every lecture hour, more if you are having trouble with the material. If you fall behind in organic chemistry, it's extremely difficult to catch up.

2) Read and understand the material in the text. First, scan the chapter to gain an appreciation of the highlights. Then, back up and read in detail, taking time to do the in-text problems. You can't read technical material like a novel – that makes for a good insomnia remedy.

3) Find a study partner or organize a study group. Sometimes an explanation from a fellow student will seem clearer to you than my explanation. I have little interest in exactly how you learn, only that you do learn the material – we all have different learning styles. Drilling each other will really help with learning how to solve organic problems.

4) For additional study, the Internet can be a powerful resource. For example, check out the "Educational Materials for Organic Chemistry at Michigan State University" pages at http://www.cem.msu.edu/~parrill/ (thanks to Prof. Abby Parrill, Univ. of Memphis).

5) If you're really lost, please ask for my help. If we can't clear up the confusion in 15 minutes or so, we will schedule a longer tutorial appointment at a mutually agreed-upon time.

CLASS SCHEDULE:

WEEK	DATE	MATERIAL STUDIED
Week 1	August 23	Introduction; Chapter 1: Covalent Bonds and Shapes of Molecules
	August 25	Chapter 1 **QUIZ 1**
Week 2	August 28	Chapter 1
	August 30	Chapter 2: Alkanes and Cycloalkanes
	September 1	Chapter 2 **QUIZ 2**
Week 3	September 6	Chapter 2
	September 8	Chapter 3: Acids and Bases **QUIZ 3**
Week 4	September 11	Chapter 3
	September 13	Chapter 4: Stereochemistry
	September 15	Chapter 4 **QUIZ 4**
Week 5	September 18	**EXAM 1**
	September 20	Chapter 4
	September 22	Chapter 5: Alkenes I **QUIZ 5**
Week 6	September 25	Chapter 5
	September 27	Chapter 6: Alkenes II
	September 29	Chapter 6 **QUIZ 6**

WEEK	DATE	MATERIAL STUDIED
Week 7	October 2	Chapter 6
	October 4	Chapter 6
	October 6	Chapter 7: Alkyl Halides and Radical Reactions **QUIZ 7**
Week 8	October 9	Chapter 7
	October 11	Chapter 7
	October 13	Chapter 8: Nucleophilic Substitution and β-Elimination **QUIZ 8**
Week 9	October 18	Chapter 8
	October 20	Chapter 8 **QUIZ 9**
Week 10	October 23	**EXAM 2**
	October 25	Chapter 9: Alcohols and Thiols
	October 27	Chapter 9 **QUIZ 10**
Week 11	October 30	Chapter 9
	November 1	Chapter 10: Alkynes
	November 3	Chapter 10 **QUIZ 11**
Week 12	November 6	Chapter 11
	November 8	Chapter 11: Ethers, Sulfides, and Epoxides
	November 10	Chapter 11 **QUIZ 12**
Week 13	November 13	Chapter 12: Mass Spectrometry
	November 15	Chapter 12
	November 17	Chapter 13: Nuclear Magnetic Resonance **QUIZ 13**
Week 14	November 20	**EXAM 3**
Week 15	November 27	Chapter 13
	November 29	Chapter 14: Infrared and UV-Vis Spectroscopy
	December 1	Chapter 14 **QUIZ 14**
Week 16	December 4	Review of instrumental analysis: Chapters 12, 13, 14
	December 6	Comprehensive Review: all Chapters studied
	December 8	**FINAL EXAM, 8:30-11:00 am**