

Course Information: Chemistry 432 – Spring 2009

Time & Place: Tuesday & Thursday 11:00 am –12:15 pm in Keyes 104

Instructor: Prof. Jeffrey Katz

Contact Info: Phone: 859-5754 Office: Keyes: 216 e-mail:
jlkatz@colby.edu

Office Hours: By appointment, or any time my door is open.

Required Text: None

Optional Texts: Advanced Organic Chemistry by Carey and Sundberg, Part A & B

Required Item: Molecular Models. I recommend the bio-organic set by HGS/Maruzen or the Darling Models “Molecular Visions” kit.

Objective: We will develop an understanding of the three-dimensional structure of organic molecules, and how this structure affects reactivity. New organic reactions will be discussed, as well as concepts of controlling relative and absolute stereochemistry to target-oriented synthesis.

Student collaboration: Collaboration (“working together”) WILL be allowed on problem sets. *Note: this is not true for most courses at Colby!* However, every student in the group must actively participate and contribute to solving the problems. Anyone simply copying from other class members will be forced to work alone. All graded material other than problem sets is to be 100% your own work. Ideas not exclusively your own are to be cited according to Colby policies (see below).

Working in a group on problems can be a very good learning tool. However, if you find that all of the problems seem easy while with the group but suddenly become very difficult on your own, I strongly suggest that you take the time to work through the material on your own.

Citations: Any work requiring citations should adhere to Colby policies, including web-based information. http://www.colby.edu/library/research/web_reference/

Homework: Weekly problem sets and answer keys will be available for download on the course website. These problems will offer a range of difficulty, and some will be even more challenging than the questions that you will encounter on class exams. Problem sets for the course also serve as teaching tools for more in-depth analysis of class concepts (in other words – the answers cannot always be obtained solely from the class material and instead may require literature/textbook investigation!).

Exam Schedule: In addition to the final projects [see below], there will be two “mid-term” exams. For students that have verified reasons for not taking an exam, we will find

some arrangement that does not adversely affect that student's course grade. If a student is expected to be away for an excused College activity, [sports meet, speech meet, etc.] I will try to arrange for exams to be administered by a coach or other non-student person that accompanies the student. It is the responsibility of the student to let me know, well in advance (1 week) of any possible trips and to arrange with a person (for example, your coach) to administer the exam.

Policy on time extensions for exams: Exams will be written so that they may be completed during the 75-minute class time. Some students may have approval from the Dean of Students Office for time extensions on exams. It is departmental policy that these students must establish with the Dean of Students and the Chair of Chemistry an appropriate time extension. **This approval must take place at the beginning of the semester.**

Grading: Your final grade will be calculated from your exam and project scores as shown below.

Percent of Final Grade

Problem Sets:	30%
Two hour exams	20% each
End of semester projects	30%

Attendance policy: Consistent with College policy, attendance is required for all lectures. If a student is in the health center, or under medical care such that she/he is unable to make class, take exams, etc., be sure that this is conveyed to me immediately so that we can develop a mutually-agreeable scheme for making up lost work.

Expected topics of study and dates

Lecture	Date	Topic
1	February 5	Conformational Analysis I
2	February 10	Conformational Analysis II
3	February 12	Stereoelectronic Effects I
4	February 17	Stereoelectronic Effects II
5	February 19	Stereoelectronic Effects III
6	February 24	Olefin Addition Reactions I
7	February 26	Olefin Addition Reactions II
8	March 3	Olefin Addition Reactions III
9	March 5	Pericyclic Reactions I
10	March 10	Pericyclic Reactions II/ Exam 1 (time TBA)
11	March 12	Pericyclic Reactions III
12	March 17	Cycloadditions I
13	March 19	Cycloadditions II
	March 24	Spring Break
	March 26	Spring Break
14	March 31	Cycloadditions III
15	April 2	Introduction of Asymmetric Reactions
16	April 7	Carbonyl and Azomethine electrophiles
17	April 9	Enolates & metalloenamines I
18	April 14	Enolates & metalloenamines II
19	April 16	Protecting Groups
20	April 21	Carbocations I/ Exam II (time TBA)
21	April 23	Carbocations II
22	April 28	Carbanions I
23	April 30	Carbanions II
24	May 5	Carbenes I
25	May 7	Carbenes II