

Chemistry 2320

Organic Chemistry, Spring 2006

Instructor: Dr. Tom Chang
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Meeting Time/Place: MWF 3:30 - 4:20am, ENGR 103, Thr 3:30 -4:20pm, Main 225.

Office Hour: M-F 8:30 am to 9:30 am, or drop by anytime including weekend with or without appointment

Texts: "Organic Chemistry" 4th Ed, Paula Bruice, University of California, Santa Barbara

Model Kit: Available in Chem Stores (1st Floor of Widtsoe). (Recommended, feel free to ask me for suggestion)

Course Outline and Exam Schedule:

Week	Dates	Chapter(s)
1	1/9 – 1/13	Introduction, Chapter 13
2	1/18 – 1/20 (1/16 No class)	Chapters 13, 14
3	1/23 – 1/27	Chapter 14, Exam 1 (1/27, Friday) ,
4	1/30 – 2/3	Chapter 15
5	2/6 – 2/10	Chapters 15 and 16
6	2/13 – 2/17	Chapter 16, Exam 2 (2/17, Friday)
7	2/22 – 2/24 (2/20 No class)	Chapter 17
8	2/27 – 3/3	Chapter 17
9	3/6 – 3/10	Chapter 18
10	3/13 – 3/17 (No class, spring break)	
11	3/20 – 3/24	Chapter 18, Exam 3 (3/24, Friday)
12	3/27 – 3/31	Chapter 19
13	4/3 – 4/7	Chapter 19
14	4/10 – 4/14	Chapters 19 and 20
15	4/17 – 4/21	Chapter 20
16	4/24 – 4/28	Chapter 20
17	5/2, Monday	Final Exam (5/3, Wednesday, 1:30 – 3:20 am)

Online links to chemistry materials:

Organic chemistry: www.jbpub.com/organic-online/webhome.htm

Periodic Table: pearl1.lanl.gov/periodic

Organic reactions: www.towson.edu/~sweeting/orgrxs/reactsum.htm

Also check the links from the on-line course material of Chem2320:

http://www.chem.usu.edu/~tchang/chem2320/previous_exams_2320.htm

General Learning Objectives for 2320

Know what molecular events give rise to mass spectrometry and infrared spectroscopy, and be able to use such spectra to identify the structures of organic molecules.

Know the origin of nuclear magnetic resonance in terms of interaction between nuclei, magnetic fields and radiofrequency radiation; be able to use proton and carbon NMR spectra to identify the structures of organic molecules.

Be able to identify aromatic and antiaromatic compounds, and know the chemical consequences of aromaticity; be able to write the mechanism for and predict the products of electrophilic aromatic substitution.

Be able to explain and to predict the effect of substituents on the reactivity and regiochemistry of electrophilic aromatic substitution.

Know the structures and chemical properties of carboxylic acid derivatives; be able to write the mechanisms for nucleophilic substitution and hydrolysis reactions of such compounds, and to predict the products of such reactions.

Be able to write mechanisms for nucleophilic addition reactions and for addition-elimination reactions of aldehydes and ketones, and be able to predict the products of such reactions.

Be able to describe the general structure of a carbohydrate, and the major reactions of carbohydrates.

Be able to write the structure of an amino acid, and explain how amino acids form proteins and their overall chemical structure and reactivity.

Be able to identify the various forms of catalysis (including nucleophilic, general acid/base, specific acid/base, anchimeric assistance, metal-ion catalysis) and be able to write mechanisms for such processes.

Know the general structures of lipids and fatty acids and their chemical and physical properties.

Know the structures of nucleosides, nucleotides and nucleic acids, and the physical and chemical properties of related biological molecules.

Grading Scheme:

Point Distribution: (1) Three one-hour exams (100 pts each). No exam can be dropped. No makeup exam will be given.
(2) Final (200 pts): Every one needs to take the final. The final cannot be partially dropped and substituted with scores from other exams.

Total Points: 500 pts

Grade Breakdown:

The grade received in the course is based on your performance on the exams. Grades are determined based on the overall percentage on all exams unless abnormal distribution occurs, for example >50% of the class score A or >50% of the class score D. The final grade will be normalized if more than 20% of the students receive F. The final exam can be picked up in my office on May 4. Any grading error of final exam needs to be corrected by 12:00 pm of Friday, May 5. Your final grade will be posted by the end of Friday.

Grade	A	A-	B+	B	C+	C	D+	D	F
% Scores	≥95%	≥90%	≥85%	≥80%	≥75%	≥70%	≥65%	≥60%	<60%

Procedures:

1. **There will be no make-up exams.** Persons who miss an examination date due to sudden illness or family situation must contact me within one week in order to discuss appropriate arrangements. After one week, no credit will be given for a missed exam. It is possible to take an exam in advance, but only with a valid excuse and document, and prearrangement with me.
2. It is an official University policy that unless you have three exams on the same day, you must take the final exam in the course at the officially scheduled time. Permission to take a final at any other time for any other reason can only be obtained from Dean of Science.
3. Addition mistakes or questions over exam grading should be discussed with me **within one week** following the return of the exam. No point adjustments will be made after this time.
4. The main function of office hours is to discuss and solve problems that you may be having with the course materials, problems in the textbook, and concepts presented during lecture. Try to organize questions in advance. **Do not expect a mini review session.** On the other hand, **do not hesitate to ask me question.**