

Chemistry 42/44

Introductory Organic Chemistry Spring 2010

Syllabus

Instructor	Thomas S. Hughes	Cook A316	656-0161	Thomas.S.Hughes@uvm.edu
Lectures	MWF 9:35 – 10:25 AM			Angell B106
Laboratories	MW 12:50 – 3:35 PM	TR 1:00 – 3:45 PM		
	M 5:10 – 7:55 PM	T 8:30 – 11:15 AM	TR 5:30 – 8:15 PM	Cook A313
Office Hours	MTW 1:00 – 2:00 PM, R 12:00 – 2:00 PM or by appointment			Cook A316
Website	www.uvm.edu/~tshughes/chem042.html			

Goals and Objectives By the end of this course, you should be able to recognize, identify and represent simple and common organic molecules, using standard nomenclature. You should be able to predict the geometrical structures, stereochemical relationships and physical properties of organic molecules based on their structural formulae, and the outcomes of simple organic reactions, when appropriate using information about reaction intermediates and mechanisms to do so.

Required Textbooks and Course Materials

Organic Chemistry, A Short Course, 12th ed. Hart, Craine, Hart and Hadad (includes Study Guide)
i>clicker Response Pad

Blackboard will be used for (almost) weekly quizzes. You will be responsible for navigating the Blackboard system on any computer with a web browser in order to take the quizzes.

The i>clickers will be used to record answers to questions asked during the lecture, which count towards a classroom participation portion of your grade. You will need to bring your response pads to every class!

Grading

Exams I, II, III, IV	3 x 15%
Final Exam	25%
Quizzes	10%
Class Participation	5%
Laboratory	15%

Note: Exams will be held Wednesday evenings from 6:30 – 8:30 PM in Angell B106 unless otherwise announced. Accommodations for ACCESS students or for those who require alternate exam times should be made a week before the exam.

You must earn a passing grade in the laboratory to receive a passing grade for the course. More than two laboratories missed for any reason will result in a failing grade for the course (unless you are granted an incomplete by your dean).

You must take all four preliminary exams; the lowest exam score from these three will be dropped. Missed exams will result in a score of zero and will not be dropped unless you obtain prior approval from the instructor or an official letter from your dean in the event of extraordinary circumstances. The lowest quiz and lab scores will also be dropped. The participation score is based on a combination of attendance and answers given in lecture; no penalty is assigned for the first five class absences. The course point totals will be curved before letter grades are assigned.

Grades for Chem 044 will be assigned using only quizzes, exams and class participation as specified above. However, it has no laboratory component and therefore does not satisfy the requirements for many majors.

Supplemental Instruction

Further discussions of the class material may be available during Supplemental Instruction (SI) sessions. The SI leader will coordinate and announce the locations of SI sessions in class. For more information about SI, see their website at: www.uvm.edu/~learnco/si.

Tutoring Help

The Learning Coöperative in LLC Room 244 has peer tutors available for this course. The cost is \$10.00 per hour (free for some students). Appointments can be arranged at convenient sites on campus at a wide variety of times, even after hours and on weekends. Please call the Coöp (6-4075), visit www.uvm.edu/~subttutor, or stop by M-R 8AM-9PM, F 8AM-5PM, Sun 6PM -9PM for more info.

Code of Academic Integrity

www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf

Code of Student Rights and Responsibilities

www.uvm.edu/~uvmppg/ppg/student/studentcode.pdf

Lecture and Exam Schedule and Topics for Chemistry 42/44

Lecture	Date	Topic	Book Sections
	Jan 18	<i>NO LECTURE: MLK DAY</i>	1.1 – 1.4
1	Jan 20	Bonding and Isomerism	1.5 – 1.9
2	Jan 22	Formal Charge, Resonance	1.10 – 1.15
3	Jan 25	Intro, Bonding	
4	Jan 27	Orbitals, Functional Groups	1.16 – 1.18
5	Jan 29	Alkanes: Structure and Nomenclature	2.1 – 2.5
6	Feb 1	Alkanes: Conformations	2.6 – 2.8
7	Feb 3	Alkanes: Isomerism	2.9 – 2.10
8	Feb 5	Alkanes: Reactions	2.11 – 2.12
9	Feb 8	Alkenes and Alkynes: Structure and Nomenclature	3.1 – 3.5
10	Feb 10	Alkenes and Alkynes: Reactions	3.6 – 3.9
	Feb 10	Exam I: Chapters 1 – 2	
11	Feb 12	Alkenes and Alkynes: Reactions	3.10 – 3.13
	Feb 15	<i>NO LECTURE: PRESIDENT'S DAY</i>	3.14 – 3.17
12	Feb 17	Alkenes and Alkynes: Alkynes	3.18 – 3.21
13	Feb 19	Aromatic Compounds: Stability	4.1 – 4.6
14	Feb 22	Alkenes and Alkynes: Reactions	
15	Feb 24	Aromatic Compounds: Reactions	4.7 – 4.9
16	Feb 26	Aromatic Compounds: Reactions	4.10 – 4.12
17	Mar 1	Stereoisomerism: Origin, Nomenclature	5.1 – 5.3
18	Mar 3	Stereoisomerism: Physical Properties	5.4 – 5.6
	Mar 3	Exam II: Chapters 3 – 5.4	
19	Mar 5	Stereoisomerism: Multiple Stereocenters	5.7 – 5.9
	Mar 8-12	<i>NO LECTURE: SPRING BREAK</i>	
20	Mar 15	Stereoisomerism: Reaction Consequences	5.10 – 5.12
21	Mar 17	Alkyl Halides: Nucleophilic Substitution	6.1 – 6.5
22	Mar 19	Alkyl Halides: Substitution Mechanisms	6.6
23	Mar 22	Alkyl Halides: Eliminations	6.7 – 6.8
24	Mar 24	Alkyl Halides: Physical Properties	6.9
25	Mar 26	Alcohols and Phenols	7.1 – 7.5
26	Mar 29	Alcohols and Phenols: Reactions	7.6 – 7.9
27	Mar 31	Alcohols and Phenols: Reactions	7.10 – 7.16
	Mar 31	Exam III: Chapters 5.5 – 7.10	
28	Apr 2	Thiols, Ethers and Epoxides	7.17, 8.1 – 8.5
29	Apr 5	Ethers and Epoxides	8.7 – 8.8
30	Apr 7	Aldehydes and Ketones	9.1 – 9.6
31	Apr 9	Aldehydes and Ketones: Nucleophilic Add'n	9.7, 16.1 – 16.3
32	Apr 12	Carbohydrates: Monosaccharides	16.4 – 16.6
33	Apr 14	Carbohydrates: Di- and Polysaccharides	16.9 – 16.13
34	Apr 16	Aldehydes and Ketones: Reactions, Enolates	9.8, 9.9, 9.12, 9.13
35	Apr 19	Carboxylic Acids	10.1 – 10.4, 10.6 – 10.8
36	Apr 21	Carboxylic Acids, Esters: Reactions	10.9 – 10.12, 15.1
	Apr 21	Exam IV: Chapters 7.11 – 9.16, 16	
37	Apr 23	Lipids: Fats, Oils	15.2 – 15.4
38	Apr 26	Lipids: Detergents and Phospholipids	15.5 – 15.6
39	Apr 28	Esters: Reactions, Amides	10.13 – 10.16
40	Apr 30	Amines	11.1 – 11.8
41	May 3	Amino Acids, Peptides and Proteins	17.1, 17.2, 17.7 – 17.15
	May 10	8:00 AM Final Exam	Cumulative

All practice problems in the sections assigned should be attempted; further recommended problems will be posted on the web over the course of the semester. It is highly recommended that you keep up with the readings and problems; working problems is the best way to master the concepts presented, so you should feel free to work problems that haven't been assigned!