

CHEMISTRY 342

THE UNIVERSITY OF LOUISVILLE

DEPARTMENT OF CHEMISTRY

CHEM 342, Organic Chemistry 2 (3 credit hours) (Fall 2007)

Course description

Fundamental principles and theories of organic chemistry. Prereq: CHEM 341.

Course Information

- Lecture Times: TTh 9:30–10:45 a.m. in Davidson Hall 203
- Instructor: Dr. Syed Raziullah Hussaini
- Office: Room 334, Chemistry Building
- Tel.: 502-852-7499
- Email: rhuss01@louisville.edu
- Office hours: TTh 12-1:00 p.m. At other times by appointment.
- Textbook: Organic Chemistry by Joseph M. Hornback, (second edition) and a set of molecular models.
- Recommended: Study Guide and Solutions Manual for Hornback.

Recitation

TA's Name: Samuel Asem, email: fikosem@yahoo.com

Meeting times : 342-01A Tues 3-3:50 PM Chem Building lower level 16

342-01B Tues 4-4:50 PM Natural Sci LL30

342-01C Fri 12-12:50 PM Chem Building lower level 16

Even though recitation is not graded, you are advised to attend it. Some of the problems that you will discuss in the recitation will most likely come in the exam.

The Course

This course is the second of a two-part introduction to the principles of organic chemistry, the chemistry of the compounds of carbon. The content can be classified as *structure, reactivity, and synthesis*. You will learn how atoms are joined together in organic compounds, how their structure affects their bulk properties, how we can gain information about the structure of unknown organic compounds, and how organic compounds are transformed into other organic compounds. Attendance is not mandatory, however, it is strongly advised, as much of the exam material will come directly from lecture notes.

Tentative lecture schedule

Date	Topic	Section in Text
Aug 21	Mass Spectrometry	Chapter 15
Aug 23	IR Spectroscopy	Chapter 13
Aug 28	NMR Spectroscopy	Chapter 14
Aug 30	NMR Spectroscopy	Chapter 14
Sep 04	The Chemistry of Radicals	Chapter 21
Sep 06	The Chemistry of Radicals	Chapter 21
Sep 11	Exam I	
Sep 13	Benzene and Aromatic Compounds	Chapter 16
Sep 18	Benzene and Aromatic Compounds	Chapter 16
Sep 20	Aromatic Substitution Reactions	Chapter 17
Sep 25	Aromatic Substitution Reactions	Chapter 17
Sep 27	Pericyclic Reactions	Chapter 22
Oct 02	Pericyclic Reactions	Chapter 22
Oct 04	Exam 2	
Oct 11	Additions to the Carbonyl Group	Chapter 18
Oct 16	Additions to the Carbonyl Group	Chapter 18
Oct 18	Additions to the Carbonyl Group	Chapter 18
Oct 23	Substitution at the Carbonyl Group	Chapter 19
Oct 25	Substitution at the Carbonyl Group	Chapter 19
Oct 30	Substitution at the Carbonyl Group	Chapter 19
Nov 01	Exam 3	
Nov 06	Enolate and Other Carbon Nucleophiles	Chapter 20
Nov 08	Enolate and Other Carbon Nucleophiles	Chapter 20
Nov 13	Enolate and Other Carbon Nucleophiles	Chapter 20
Nov 15	Carbohydrates	Chapter 25
Nov 20	Carbohydrates	Chapter 25
Nov 27	The Synthesis of Organic Compounds	Chapter 23
Nov 29	Amino Acids, Peptides and Proteins	Chapter 26
Dec 10	Final Exam	

Homework

Online Web-Based Learning (OWL) program will be used. In addition to the OWL assignments, problems from the book and elsewhere will be assigned. Both OWL and the traditional type of homework assignments will not be graded. Answers to the problems are available in the OWL program and in the Student Solutions Manual and Study Guide. For other assigned problems, the answers will be provided either in the class or in the recitation. You are strongly encouraged to solve these problems as the exams will be designed around it.

Exams

- Exam 1: Tuesday, September 11, in class
- Exam 2: Thursday, October 04, in class
- Exam 3: Thursday, November 01, in class
- Final exam: Monday, December 10, 8:00–10:30 am

You may bring neither your molecular model kit nor a calculator to the exams. (This is partly for your own benefit, since model-making is time-consuming. Any math that you need to do will be simple arithmetic.) All exams are cumulative. Any subject covered on an earlier exam may reappear on any later exam.

Grading Policies

Each of the in-class exams will contribute 20% to your final grade and the final will contribute 40%. The final assignment of letter grades will be based *approximately* on the following schedule: A= 85+, B= 65–85, C= 50–65, D= 40–50. I reserve the right to lower these divisions depending on the difficulty of exams and where breaks in the distribution occur. Grades are assigned on the basis of student performance, not proportions; in other words, students are not competing against each other for grades.

Students may miss one exam if they have a documented, excused absence that conforms to the University Rules. The documents must be presented within a week of the missed exam. Make-up exams will not be given; the student who misses an exam for a legitimate reason will have the two other hourly exams each count for 25% of their grade and the final count for 50%. (Remember, all exams are cumulative; if you miss one exam, it doesn't mean that you don't have to learn the material!) Students with two documented, excused absences will have their hourly exam counted for 35% and their grade and the final exam count for 65%. Students who miss three or more exams or the final exam for any reason will receive an "E". Students who miss an exam without an excuse will receive a zero for that exam at my discretion. If you miss an exam for any reason, even an undocumented one, please discuss the circumstances with me.

All exams will be returned to you after they have been graded. Please check them over for addition mistakes. If you were marked down for an answer that you think was correct, submit it to me with a brief written argument. Oral requests for regrading will not be

entertained. Requests for regrading must be received within one week of the return date. A student who has changed an answer and presented it for regrading has cheated. He or she will accordingly receive an E in the class and may be subject to further disciplinary action. In order to remove any temptation to do this, some exams will be photocopied before they are returned.

You must have a valid photo ID at the exams. All graded work must be entirely yours. Attempts to claim another person's work as your own will be dealt with in accord with the university regulations.

The blackboard for this class is an essential resource. Check it often!

Useful Web Site

<http://louisville.edu/a-s/chemistry/syllabi.htm>

Advice

- Attend every lecture and recitation.
- Avoid memorization
- Study each chapter before the lecture.
- Work all the assigned problems as well as other problems at the end of the chapter
- Write as you read. Draw structures and reactions as you read about them.
- Use model set whenever you are having difficulty in translating 2-D drawing into 3-D structures.
- If you need help, please ask. I have posted my office hours, so don't hesitate to come to my office if you have questions. If you have a quick a quick question, you can contact me by email or blackboard.

I reserve the right to make changes in the syllabus when necessary in order to meet the learning objectives, to compensate for missed classes, or for other similar reasons.