

C341: Organic Chemistry
Summer Session 2: 2009

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Lecture:
8:15-9:20 AM, MTWRF
Discussion:
9:30-10:20 AM MW or
9:30-10:20 AM TR

Website: www.chem.indiana.edu/academics/ugrad/Courses/c341/default.asp

Course Description:

Organic chemistry is the study of the structure and reactivity of carbon-containing compounds. Throughout the semester, we will discuss the physical properties and chemical transformations of organic compounds. Of primary emphasis will be the development of a systematic rationale for these properties and transformations.

Specific goals include:

1. Understanding the nature and behavior of chemical bonds
2. Learning the mechanisms for some of the common reaction types
3. Exploring the basic reactivity of some major functional groups

Because these topics are all built upon a foundation of key topics, the first lectures of the course will be dedicated to the fundamental principles of molecular structure. A mastery level of understanding of these topics is expected.

Text Materials:

Required: Smith, J.G. .. *Organic Chemistry, 2nd ed.* ISBN: 978-0-07-335670-9

Smith, J.G. Student Study Guide/Solutions Manual ISBN 978-0-07-304987-8

Suggested: "Organic Chemistry Models" molecular modeling kit (You may find it helpful to share a kit.); Klein, David R. "Organic Chemistry as a Second Language 2nd ed." ISBN978-0-470-12929-6

Instructor Office Hours: 11:30AM-12:30PM MTWR

Class Organization:

In this three-credit course, there will be classroom lectures MTWR and discussion sections MW or TR. Attendance is expected in both lecture and discussion.

Associate Instructors:

Fese Mokube femokube@indiana.edu

Raghu Ozhapakkam rramabha@indiana.edu

Grading:

Homework and quizzes:	100 pts
Exams:	300pts
Final Exam:	<u>200pts</u>
Total	600 pts

Anticipated grading scale: A = above 90%, B = 80-89.9%, C = 65-79.9%, D = 50-64.9%, F=below 50%. Plus/minus grades will be awarded.

Homework and Quizzes: At 11 times during the discussion section, homework or quiz grades will be taken. Each will be worth 10 points. The lowest of the individual grades will be dropped to give a total of 100 points. There will be no makeup homework or quizzes. If a discussion is missed where homework or quiz grade is completed, that will count as the dropped homework or quiz score.

Quizzes: Quizzes will not be announced, but will take place on random dates during discussion section. Five or six quizzes will be administered throughout the course, and each will be graded out of 10 points. Quizzes will cover material from the course up to that point, but will focus on the material from the previous 2-3 lectures.

Homework: Homework is the single most important thing you can do to have success in this course. To aid your learning, you will be required to have a "Homework Folder." In this three-ring binder, you will collect all 32 assignments from the course. Each assignment should be stapled, with your name and the assignment number on the top. Each page will have two columns. On the left column, work out each problem without referring to the solutions manual. After you have completed the problem, refer to the solutions manual. In the column to the right of your answer, write the word "correct" if your solution was correct, or write in the full answer based on the solutions manual if your initial answer was wrong.

This two-step process is vital to your learning. Skipping either step will be detrimental to your understanding. Remember that it is not important that you get the answer right the first time—what matters is that you learn from the exercise. You will receive full credit for the assignment even if all of your initial answers were wrong, as long as you have made the proper corrections.

Homework will be collected five or six times at the beginning of discussion section, with each assignment worth 10 points. The assignments will be given five points for completion and five points for correctness. For homework to be considered correct, it must follow the format above and the content must be correct. (Because you have the fully worked problems in the solutions manual, there is no excuse for incorrect answers.) Homework will be collected five or six times on random dates at the beginning of discussion section; no late homework assignments will be accepted.

Exams: Three midterm exams, each worth 100 points, will be given in class from 8:30AM-10:30AM on July 10, July 24, and August 7. All exams will be held in room Rawles Hall 100. The two hour time slot is designed so that you will not need to rush through the exam. Because organic chemistry is a subject that builds upon previously learned material, all exams will be cumulative, but will focus on the material covered since the previous exam. No makeup exams will be given; if a valid excuse is given for missing an exam, the percentage grade on the final will be substituted for the missed exam grade. Please talk to the instructor at least a week ahead of the exam if there is a known conflict with one of the exams.

Final Exam: The final exam will be cumulative and worth two midterm exams. The final will be given from 8:00 AM- 11:00AM on Friday, August 14, in Rawles Hall 100. If you have a class conflict during that time, you must contact the instructor at least one full week prior to the final.

Academic Honesty:

The determination of academic misconduct is at the discretion of the instructor. The sanctions may range from deduction of points to a failing grade for the class. In all cases, the infraction will be immediately reported to the Dean of Students as well as the dean or director of the student's school. Please read the *Code of Student Rights, Responsibilities, and Conduct* for further detail.

Surviving Organic:

Textbook: The text is well-written and student friendly. Read each section *before* coming to lecture to get the most from each lecture.

Homework problems: Complete as many homework problems as possible. Of course, you should do the daily assigned homework, **but this should be considered a minimum amount of work**. In addition, the discussion worksheets are based on problems from the text. Complete the entire worksheet if it isn't complete during discussion section meeting. Also, I have included problems from each chapter that will help you in studying right before an exam.

Study Groups: Many different skill sets are needed to comprehend the material, including visual/spacial reasoning, logic, abstract reasoning, memorization, organization, and drawing. Few individual students have strengths in all of these areas, but a group of students probably will. At the beginning of the semester, form a 3-4 person study group to meet weekly to review homework and major topics.

Develop a grid of understanding: Organic chemistry may be perceived as a huge collection of randomly accumulated facts, but it is actually a tightly coherent science. As you learn more and more, keep looking for trends and relationships in the material.

Tips for maximum success:

- You need to attend all classes and discussions.
- Do the assigned problems **prior to** the next class. Do unassigned problems in the same section of material for further practice.
- Practice, practice, practice. Keep up with the suggested homework problems. Do not put them off until before the exam. Organic chemistry requires drawing many structures, so you must write out every homework problem. Do not simply look at it and think that you know how to do it.
- Develop and use your own study aids, such as flashcards.
- Be persistent in asking questions. Take advantage of discussion sections. Come to office hours as soon as you are having problems.
- Use your Homework Folder in preparing for exams. Look over problems that you did not get right initially and rework them.

I want to see you succeed! My personal goal is to see every individual student succeed to the level he or she desires. Please feel free to talk with me any time you want—keep me up to date with how you are doing.

Tentative Schedule: This schedule may be changed by the instructor to better meet the needs of the class.

Date	Chapter	Discussion	#	Smith Homework
June 19	1.1-1.4		1	Ch.1: 7, 8, 10, 38, 41a, 43
June 22	1.5-1.6	Problem Set 1	2	Ch 1: 11-13, 15, 17, 18
June 23	1.7-1.13		3	Ch 1: 21, 23, 27, 28, 30, 33, 34
June 24	2.1-2.4	Problem Set 2	4	Ch 2: 2, 3, 5, 7, 9-11, 30
June 25	2.5		5	Ch 2: 13-16, 18, 19, 42, 43
June 26	No Class			
June 29	2.6-3.2	Problem Set 3	6	Ch 2: 23, 24, 50 Ch 3: 2, 3, 15
June 30	3.3-3.10		7	Ch 3: 4-8, 10, 13, 20
July 1	4.1-4.10	Problem Set 4	8	Ch 4: 3-4, 8, 9, 11-13, 15-16, 20-21, 23-24
July 2	4.11-4.14		9	Ch 4: 26, 27, 29-32, 48, 50, 56
July 3	No Class			
July 6	5.1-5.5	Problem Set 5	10	Ch 5: 2-4, 6, 9-10, 34-35
July 7	5.6-5.8		11	Ch 5: 13-14, 16-18, 20, 53
July 8	5.9-5.14	Problem Set 6	12	Ch 5: 22-23, 26-27, 29-30, 32
July 9	6.1-6.12		13	Ch 6: 3, 5, 9-10, 14, 16
July 10	Exam 1			
July 13	7.1-7.11	Problem Set 7	14	Ch 7: 1-5, 10-12, 14, 16-22
July 14	7.12-7.14		15	Ch 7: 22, 25-29, 46, 64
July 15	7.15-7.19	Problem Set 8	16	Ch 7: 29, 30-33, 35, 37, 39, 67, 68
July 16	8.1-8.5		17	Ch 8: 1, 2, 4-5, 8-10, 12
July 17	No class			
July 20	8.6-8.8	Problem Set 9	18	Ch 8: 13-16, 18-19
July 21	8.9-8.12		19	Ch 8: 21-24, 53
July 22	9.1-9.8	Problem Set 10	20	Ch 9: 2-5, 7, 11-14, 17
July 23	9.9-9.13		21	Ch 9: 19-22, 24-25, 27-30, 31, 46, 50
July 24	Exam 2			
July 27	9.14-9.18	Problem Set 11	22	Ch 9: 32-37, 64-66
July 28	10.1-10.9		23	Ch 10: 2-4, 7-8, 11-13
July 29	10.10-10.14	Problem Set 12	24	Ch 10: 14-15, 17-24,
July 30	10.15-10.19		25	Ch 10: 25-26, 29-32, 46-47, 63, 64
July 31	No Class			
Aug 3	11.1-11.8	Problem Set 13	26	Ch 11: 2, 5, 7-13, 46
Aug 4	11.9-11.11		27	Ch 11: 14, 15, 17-22, 30, 36, 43
Aug 5	11.12	Problem Set 14	28	Ch 11: 23, 24, 41, 44, 51-54
Aug 6	12.1-12.6		29	Ch 12: 1-3, 6-7, 11, 12, 14-15, 29, 31, 32
Aug 7	Exam 3			
Aug 10	12.7-12.10	Problem Set 15	30	Ch 12: 16-22, 46, 62
Aug 11	12.11-12.15		31	Ch 12: 23, 25, 39-43, 43, 56, 59
Aug 12	16.1-16.10	Problem Set 16	32	Ch 16: 1, 3, 6, 7, 9, 11, 14, 15
Aug 13	16.11-16.14		33	Ch. 16: 17-19, 21, 22, 24, 45
Aug 14	Final Exam			

Selected additional problems: These are good to test your understanding of each chapter prior to an exam.

Chapter	Problems:
1	Ch 1: 76-80, 82
2	Ch 2: 30, 37, 38, 39, 43
3	Ch3: 18, 22, 26, 33, 34, 41
4	Ch 4: 40, 42, 45, 46, 49, 57
5	Ch 5: 58, 59
6	Ch 6: 42-43
7	Ch 7: 56, 61, 71, 73
8	Ch 8: 36, 49, 52
9	Ch 9: 43, 49, 57, 67-70
10	Ch 10: 50, 53
11	Ch 11: 37, 40, 47, 51
12	Ch 12: 37, 60
16	Ch 16: 43, 47, 48, 57