Chemistry S341 Organic Chemistry Spring 2009

Instructor:	Zachary D. Aron (Zach)	**Office:**	Chemistry A361
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AI:	Angela Carrillo	**Office:**	Simon Hall 208B
Office Hours:	TBA	**Email:**	acarrill@indiana.edu
Meeting Time:	MWF 10:10-11:00 AM	**Lecture Hall:**	CH 001

Text: The course textbook is "Organic Chemistry" P. Y. Bruice (5th Ed.), the solutions manual and a set of molecular models are also recommended.

The text is intended as a reference to aid understanding the lecture. It is strongly recommended that you read relevant portions of the text prior to lecture as this will help you absorb the material being covered (a reading list is attached). There will be material in the textbook that is not covered in the lecture; you are responsible for this material as with any handouts given in class.

Appointments and Office Hours: One of the primary advantages of taking an honors course is the opportunity to develop a personal relationship with the instructor. I recommend making a habit of coming to office hours or making appointments to meet with me. If you are having problems with the material, health problems, or any other issues, get help immediately. Organic Chemistry is a cumulative subject; understanding new material depends on having mastered what has been done previously. The instructor and AI will make every possible effort to help you master the material, however if you fall too far behind you will be unable to catch up.

Email: Please do not use email to ask complicated questions. Questions on the material should be handled during office hours or by appointment. Email is not an appropriate substitute for face-to-face interactions. Email is appropriate for non-material related questions, or if your question cannot wait for office hours, the next class session or an appointment.

Discussion Sections: Sessions will involve collective problem solving efforts to help you better understand material being covered in lecture. **These sessions are not optional**. Unannounced quizzes, intended to identify how well the class has absorbed material, will be periodically given in discussion sessions. Quizzes will only be available for students enrolled in a given section; there will be no retakes of quizzes.

Grades and Exams: Course grades will be determined based on four one hour exams, 5 ten minute quizzes and a 2 hour comprehensive final. The hour exams will be given during class periods. The final exam will be held during the scheduled examination period. Quizzes are in discussion section. In class exams count for 100 points each, Quizzes count for 10 points each, and the final exam counts for 200 points. From time to time, bonus points will be awarded for outside assignments or in class work. There will be no make up exams, however your lowest hour exam and quiz scores will be dropped. You may miss one hour exam and/or quiz without

penalty (your score on the final, divided by two will be substituted), however you must email me beforehand to tell me that you will miss it, or you will receive a zero on the exam. The final exam is not optional. Students are strongly advised to take all hour exams.

Overall course grades will be based on a curve that reflects the historical distribution of grades in S341 (this is much higher than C341).

Regrade requests are permitted on all tests except the final. To receive consideration, regrades must be submitted in writing by the end of the class session following the class where exams were returned. Please look carefully at the answer key before submitting a regrade, as the entire test will be regraded.

Exam Dates: In class hour exams; the first three are on Mondays, the last one is on a Friday.

Hour Exam Dates:	Monday	February 9
	Monday	March 9
	Monday	April 6
	Friday	April 24

Withdrawals: All withdrawals are handled in the Undergraduate office. They sign the slip and the professor's signature is not required.

Incompletes: Incompletes are only allowed for reasons of prolonged illness or similar distress. The regulation is as follows: "A grade of I may be given only when the work of the course is substantially completed and when the student's work is of passing quality."

Homework Problems: Suggested problems will be assigned. Work as many of them as you need to master the concepts involved and to develop your ability to communicate your knowledge of organic chemistry on paper. This especially involves knowing the correct usage of the various ways of illustrating structural formulas. Problem sets will not be graded. It is appropriate for students to work together on assigned problems. **50% or more of exam questions will come directly (verbatim) from homework, review and practice assignments.**

Handouts and course assignments: All handouts and assignments will be put on the web. If you miss a lecture and do not get a handout or assignment, or loose your assignment, do not come to the lecturer or AI to get them. Course notes will not be available from the instructor.

S341 vs. C341: This class will cover slightly more material than C341, and in slightly greater detail. However, exams are written at the same level of difficulty as C341, and graded with the same expectations. Therefore students are neither penalized, nor aided in terms of grading by taking S341.

Professional Conduct and Behavior: It is critical that you maintain a professional attitude towards coursework. Learning the material is your responsibility. Inappropriate behavior, such as persistent tardiness, sleeping in class, cell phone interruptions or other disruptive and/or

disrespectful activity is unacceptable. The maintenance of professional behavior will be enforced by whatever means the instructor deems appropriate.

Cheating: Any instances of cheating will result in a grade of F and will be reported to the University. We are very good at catching cheaters and have no patience for such behavior. Do not test us on this.

Helpful Tips for Learning Organic Chemistry

Organic Chemistry is not that hard – it gets a bad rep primarily because it is a pyramidal subject; new material requires a clear understanding of preceding material. What does this mean to you? Throughout the course, it is critical that you master the material as we cover it. This means that you need to develop good study habits if you are going to succeed. The following are some suggestions that should help:

1. Your textbook is your primary learning resource. It is clearly written and was carefully chosen for this reason. Read the assigned sections, and make a serious effort to understand the material before coming to class. In class we will stress the most important points and clarify difficult material, class time will not permit us to cover everything that has been assigned.

2. Clarify issues as they come up. As mentioned earlier, Organic Chemistry is a cumulative subject, if you do not understand something, think it through, re-read the textbook, consult with your classmates, bring it up in discussion section and/or come to office hours. Don't just shrug your shoulders and move on, you will find the course to be a great mystery if you do.

3. Work the assigned problems. You cannot learn to do Organic Chemistry without practicing it. Make sure that you understand the problems rather than just being able to produce answers. Don't fool yourself – don't just look at the answer key and assume you can solve the problems, it doesn't work that way.

4. There is a lot of material in Organic Chemistry that must be memorized. That said, most students have more trouble using concepts constructively than memorizing it. Do not confuse having memorized class material with understanding it. Understanding implies the ability to use the material in novel contexts. Can you explain the material to a classmate?

5. Studying in a group can be an extremely effect mechanism for mastering the material. If you decide to work in a group, make sure it is small enough that you can ask questions without feeling like you are slowing the group down (Three is a good number). **I strongly advise you study in groups.** Students who do not know anyone in the class can consult with the instructor about arranging study groups. Try to arrange study groups so that all members have the same discussion section.

Topics/Reading List (dates and spacing are approximate)

Day/Date	Topic	Reading
Mon 1/12	Bonding and Structure	Chapter 1; 1.1-1.5
Wed 1/14	Bonding and Structure	Chapter 1; 1.5-1.15
Fri 1/16	Acids and Bases	Chapter 1; 1.16-1.23
Mon 1/19	**No Class – MLK Holiday**	
Wed 1/21	Acids and Bases	Chapter 1; 1.24-1.26
Fri 1/23	Alkanes	Chapter 2; 2.1-2.7
Mon 1/26	Alkanes	Chapter 2; 2.8-2.10
Wed 1/28	Cyclic Alkanes	Chapter 2; 2.11-2.14
Fri 1/30	Alkenes	Chapter 3; 3.1-3.5
Mon 2/2	Alkenes	Chapter 3; 3.6
Wed 2/4	Thermodynamics and Kinetics	Chapter 3; 3.7-3.8
Fri 2/6	Alkene Reactions	Chapter 4; 4.1-4.4
Mon 2/9	**Hour Exam 1** (Chapters 1-3)	
Wed 2/11	Alkene Reactions	Chapter 4; 4.5-4.6
Fri 2/13	Alkene Reactions	Chapter 4; 4.7-4.9
Mon 2/16	Alkene Reactions	Chapter 4; 4.10-4.12 Chapter 19; 19.5-19.7
Wed 2/18	Stereochemistry	Chapter 5; 5.1-5.7
Fri 2/20	Stereochemistry	Chapter 5; 5.8-5.10
Mon 2/23	Stereochemistry	Chapter 5; 5.11-5.17
Wed 2/25	Reaction Stereochemistry	Chapter 5; 5.18-5.21
Fri 2/27	Alkynes	Chapter 6; 6.1-6.7
Mon 3/2	Alkynes	Chapter 6; 6.7-6.11
Wed 3/4	Alkynes	Chapter 6; 6.12
Fri 3/6	Resonance and Benzene	Chapter 7; 7.1-7.7
Mon 3/9	**Hour Exam 2** (Chapters 4-6 + a little 19)	
Wed 3/11	Effects of Resonance	Chapter 7; 7.8-7.10
Fri 3/13	Diels Alder Reactions	Chapter 7; 7.11-7.12
Mon 3/16-Fri 3/20	**Spring Break**	
Mon 3/23	Reactive Carbon	Chapter 11; 11.1-11.5
Wed 3/25	Radical Reactions	Chapter 11; 11.6-11.9
Fri 3/27	Nucleophilic Substitution	Chapter 8; 8.1-8.4
Mon 3/30	Nucleophilic Substitution	Chapter 8; 8.5-8.8
Wed 4/1	Nucleophilic Substitution	Chapter 8; 8.8-8.12
Fri 4/3	Elimination Reactions	Chapter 9; 9.1-9.2
Mon 4/6	**Hour Exam 3** (Chapters 7, 8 and 11)	
Wed 4/8	Elimination Reactions	Chapter 9; 9.3-9.8
Fri 4/10	Elimination Reactions	Chapter 9; 9.6-9.8

Mon 4/13	Elimination Reactions	Chapter 9; 9.9-9.11
Wed 4/15	Alcohols	Chapter 10; 10.1-10.5
Fri 4/17	Amines, Ethers and Epoxides	Chapter 10, 10.6-10.11
Mon 4/20	Organometallic Reagents	Chapter 10; 10.12
Wed 4/22	Coupling Reactions	Chapter 10; 10.13
Fri 4/24	**Hour Exam 4** (Chapters 9 and 10)	
Mon 4/27	Multistep Synthesis	
Wed 4/29	Multistep Synthesis	
Fri 5/1	Final Exam Review	

Wed 5/6	**10:15 AM-12:15PM**	**Final Exam**

All Readings are from "Organic Chemistry" 5th edition by P. Y. Bruice