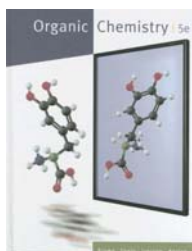


C341: Organic Chemistry/Syllabus

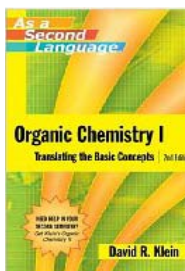
Instructor:	Prof. Cathrine Reck		
Office:	021F Chemistry Building		
Phone:	855-3972		
E-mail:	creck@indiana.edu		
Office Hours:	M 2:30 – 4:30 pm;	T 9:00 – 11:00 am;	W 1:30 – 3:00 pm C046
Lecture Times:	Section 11133	MWF	10:10 – 11:00 p.m. WH 100
	Section 30936	MWF	12:20 – 1:10 p.m. WH 100



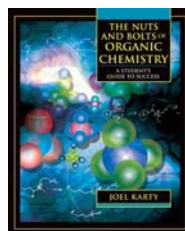
REQUIRED: "Organic Chemistry", ~ William H. Brown (Author), Christopher S. Foote (Author), Brent L. Iverson (Author), Eric Anslyn, Brooks-Cole, 5th edition. ISBN: 0495388572 (This book cover can be either grey or blue with the same ISBN number.)

Recommended: Study Guide/Solutions Manual to accompany Organic Chemistry ISBN: 049538870X. Three solutions manuals are on closed reserve in the chemistry library if you choose not to purchase it but this is not many for a class of 600 students.

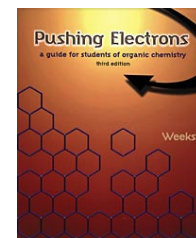
Recommended: A molecular model kit is useful to your understanding the compounds in three dimensional space; you must use this kit for it to be useful! Many students purchase these kits together to save money.



Optional: "Organic Chemistry as a Second Language", David R. Klein, 1st edition. ISBN: 0470129298. This can be ordered online for about \$30 (e.g. Amazon price). One copy is on closed reserve in the chemistry library with an older blue cover. **THIS WOULD BE MY CHOICE. There is a second semester topics book, too, if you need to take C342.**



Optional: "Pushing Electrons", D. P. Weeks, 3rd edition. This is carried in the bookstores. This can be ordered online for about \$68 (e.g. Amazon price). One copy is on closed reserve in the chemistry library.



Optional: "The Nuts and Bolts of Organic Chemistry: A Student's Guide to Success", John Karty, 1st edition. ISBN: 0805331174. This can be ordered online for about \$35 (e.g. Amazon price). One copy is on closed reserve in the chemistry library.

My goal for this course is to teach you organic chemistry in a non-threatening environment. You should care if you understand the material, and you should actively study it EVERY DAY (yes, EVERY DAY) if you want to do well. If you wish to succeed in this class, you must participate actively. **Please remember that you alone are responsible for your own success in any class. ANYONE CAN LEARN ORGANIC CHEMISTRY; YOUR SUCCESS IS DIRECTLY COMMENSURATE WITH YOUR ABILITY TO LEARN HOW TO STUDY WELL AND EXECUTE IT CONSISTENTLY.**

Attendance:

I expect you to attend **every** lecture and discussion. I expect you to have knowledge of the information that is passed on in lecture and in the textbook. Everyone is welcome at office hours, but I will not be able to make outside appointments with people who miss class to go over what they missed (there are just not enough hours in the day for me to meet with 10-20% of the class who will not show up each week – that's up to 120 people who ask for outside appointments every week). Due to the sheer number of students, one-on-one meetings will be difficult for me.

Please consider attending AI office hours or the night-time free tutoring that is available on Sunday, Monday, and Wednesday nights in C046 from 6:45-9:45 pm. Between my office hours and the AI office hours, you have access to 21 office hours/week. With the free tutoring, you have a total of 30 hours of help during the week. You have access to help, but you have to avail yourself to use it.

Handouts & Lecture Notes:

All handouts and assignments can be found at <http://courses.chem.indiana.edu/>. Click on the *Course Website* for C341. All handouts, lecture notes, old exams and quizzes will be provided using the web. Please note that old exams and quizzes follow a different textbook with a different flow of topics. Hence, old exams and quizzes will also follow a different flow of topics; they are there for you to see how I write exams in general, not for you to use as carbon copies of how the class is taught. **Please print lecture notes before class and discussion worksheets before attending discussion.** Lecture time is for covering the highlights or harder material. You are responsible for reading the rest of the material for comprehension and mastery. **Anything** and **everything** in a chapter is “fair-game” for a quiz or exam.

During lecture, we will have several in-class activities. Most of these will be group work and they will consist of problem solving with what we are covering in lecture that week. It is imperative that you have read the chapter and have kept up with the material in lecture or else you will not be able to do the in-class activities and gain these small points.

Discussion Sections:

Discussion sessions are *optional* (i.e. no points are assigned for attendance). **Due to space limitations, we ask that you attend the section for which you are registered.** However, if you must miss your discussion you may attend a different discussion during the same week to get the information missed. As there is no way that I can cover an entire chapter worth of material in three 50-minute lecture periods, discussion is imperative for you to attend and work on problems to supplement the lectures. Yes, the most successful students DO attend discussion.

Homework:

For every chapter, you should practice all the problems at the end of every chapter if you want to be successful. For the less motivated students, I will provide a list of suggested problems in the lecture notes. Work as many of them as you need to master the concepts involved and to develop the techniques of illustrating your knowledge of organic chemistry on paper. This especially involves knowing the correct usage of various ways to illustrate structural formulae. Do not just look at the answers in the solutions manual; **you must write out the answers yourself to gain the most benefit from working these problems.** You must learn to use structural formulae correctly. It is completely appropriate for students to work together on these problems. Homework will not be graded, but this is NOT a good reason to skip doing them. **The quiz and exam questions may come directly from homework assignments, so it behooves you to work through these problems! Oftentimes, students need to do problems several times to gain mastery. Since this class builds on itself, your goal is to gain mastery not just to do the problems for one exam.**

Grading:

Course grades will be determined by three exams, 5 announced in-class quizzes and one 2-hour comprehensive final. **Evening exams will be given from on Tuesday nights, 7-9:00 pm: February 9, March 9, and April 20.** Exams are administered in the evenings in order to allow you to feel that you have enough time to finish the exam and feel as relaxed as possible (trust me, in class exams were stressful when we had them years ago). The final exam will be held only during the scheduled examination period. The final exam is worth 200 points. **THERE WILL BE NO MAKE-UP NOR DROPPED EXAMS.**

Your grade earned will be determined from the following point system:

3 Exams (3 x 150 pt)	450
6 Quizzes (5 x 25 pt, drop 1)	125
In-class Activities (several)	25
1 Comprehensive Final Exam	<u>150</u>
Total:	750 points

Grading Scale (+/- grades will be determined at the end of the semester based on natural breaks in the grades):

A+	top 1% of class
A/A- range	90 – 100
B+/B/B- range	75 – 89.9
C+/C/C- range	60 – 74.9
D+/D/D- range	50 – 59.9

Absence Policy:

An **unexcused absence** is an automatic zero for the quiz/exam that you missed. An **excused absence** may be granted by the instructor if appropriate documentation has been shown. If you anticipate that you will have an excused absence on a day that an exam or quiz is scheduled (University athletic event or religious holiday), **you are required to make arrangements at least one week in advance of the exam or quiz date.** Other examples of excused absences granted in the past include documented serious illness or a death in the family. Excused absences will not be given to travel home or to attend a social event. **Please plan to take your quizzes/exams at the scheduled time.**

*I recognize that illness or other unforeseen circumstances may prevent you from performing all exams. For this reason, you are allowed to drop one exam **with appropriate documentation** and the final exam percentage will replace your missed exam. Please note that a missed exam without proper documentation **cannot** be taken as a dropped exam. If you show up to an exam, you must take it; you must attend the final to be assigned a final grade. Remember you are allowed one dropped quiz, so any absence will be the quiz that you must drop.*

If you come to an evening exam, you must take it. You cannot walk out without handing in your exam. If you need to miss an evening exam, you must provide me with appropriate documentation outlining your absence or illness before the exam begins, or you will receive a grade of zero for the exam. The final exam is **NOT** optional. **STUDENTS ARE STRONGLY ADVISED TO TAKE ALL HOUR EXAMS.**

Regrade requests are permitted on all tests and quizzes, except the final. To receive consideration, they must be submitted **IN WRITING** within one week of the class period when tests were returned. **No late regrades are possible past this point** (so, if you notice a problem with grading in week 15 on exam 1 you are out of luck). Please look carefully at the answer key before submitting a regrade. **During a regrade, the entire assignment will be regraded so you have the possibility to both gain or lose points.**

Academic Integrity:

Students and faculty are responsible for maintaining the academic integrity of the University. You are advised to read the *Code of Student Rights, Responsibilities and Conduct*. This a publication put out by the Student Ethics Office located at 705 E. 7th Street. Essentially, it is the instructor's decision, based on evidence and student interviews, whether misconduct has occurred. The sanction made against a student committing academic misconduct will be awarding a failing grade for the entire class. All cases of academic misconduct will be immediately reported to the Dean of Students as well as the dean or director of the student's school.

Specific violations may include (this is not an exhaustive list):

- The intentional use of any unauthorized study aids and/or equipment.
- Copying another student's work.
- Allowing/aiding another individual to cheat from you.
- Changing a quiz/exam answer and resubmitting for a re-grade – we make copies of 25% of all assignments as a failsafe before handing back quizzes/exams to help discourage this behavior.
- Falsifying documentation to show illness or funeral proceedings in order to miss an exam.

These actions are considered forms of cheating and will be dealt with according to the Code of Academic Ethics described in the Schedule of Classes.

Policies for Students:

Students can find policies regarding drops/adds, incompletes, drop dates, and student etiquette can be found at: <http://www.chem.indiana.edu/academics/ugrad/Courses/policies.pdf>. It is your responsibility to be familiar with these policies as they may pertain to your progress and success.

Incompletes

A grade of "I" (Incomplete) may be given only when the work of the course is substantially completed and when the student's work is *of passing quality*. For the chemistry department, "substantially completed" means 50% of the work is completed and of "passing quality" is a C- for majors and D- for non-majors. A grade of "I" may not be given when a

student has taken the final exam. When an "I" is assigned, a record must be maintained in the office of the department in which the grade was given. The record will include a statement (with appropriate documentation) of the reason for recording the "I", an adequate guide for its removal, and a suggested final grade in case the instructor should leave campus for an extended time. A failing grade is not reason enough to request an incomplete.

Helpful Tips for Learning Organic Chemistry

The fundamentals of Organic Chemistry are not that hard as it's a freshmen course. Conceptually, the material is no more difficult than those covered in C117. This course is "hard" because Organic Chemistry is a pyramidal subject (**new material requires an understanding of preceding material**), and there is a great deal of unfamiliar material that must be covered very quickly. There is no time for in-class review and each lecture will cover a new topic. **This means that you must develop good study habits if you are to succeed in this course.** The following are some helpful suggestions:

1. **Your textbook is a primary learning resource.** It is clearly written. Read the assigned chapters and make an attempt to understand the material **prior** to coming to class. In class, we will attempt to stress the most important points and to clarify difficult material. Class time will not permit us to cover everything assigned. Reading the book as suggested will increase the benefit of the lectures. **IF YOU FEEL THAT THE LECTURES ARE GOING TOO FAST FOR YOU, TRY READING THE MATERIAL BEFORE COMING TO CLASS. I cannot slow down the pace of the lecture because I must get through all the material.**
2. **Resolve uncertainties immediately as they arise.** Organic Chemistry is a cumulative subject; understanding new material is dependent on mastery of preceding material. It is essential to keep up with the lectures. If you do not understand the material, talk to the AI during discussion section, consult with fellow students, re-read the book, or see the lecturer. We are here to help you understand the material. **DO NOT BE AFRAID TO ASK FOR HELP.** If you miss a lecture, make sure you understand the material that was covered before you come to the next lecture. **DO NOT LET THINGS SLIDE.** If you did badly on an exam, it is probably because you do not understand the material, you did not study in advance, or you did not do the assigned homework. Your problems will only get worse if you do not take active steps to learn the material you do not understand.
3. **Work the assigned problems (multiple times).** You cannot learn to do organic chemistry without the practice of doing problems, not staring at a solutions manual. Make certain that you understand the problems as distinguished from being able to reproduce solutions. Do not fool yourself! Please do not just look at an answer key and think you can DO the problems; it does not work that way!
4. **There is a great deal of material in Organic Chemistry that can be memorized.** Since most students find it much more difficult to use concepts constructively than to memorize, most students try only memorizing. Do not confuse memorization with understanding. Understanding implies the ability to use the information to solve new problems. A good test of this is to try to explain the material to a classmate.
5. **Study groups are a useful aid in learning the material.** If you decide to work with a study group, make sure it is small enough (three is a good number) so that you won't be afraid to ask questions or slow down the group. **I strongly advise that you study in groups.** Students who do not know anyone in the class may consult with the instructor about arranging study groups. Try to arrange groups so that all members have the same discussion section.
6. **DON'T LEAVE YOUR STUDYING TO THE LAST MINUTE! YOU CANNOT SUCCESSFULLY CRAM ALL THE MATERIAL IN THIS COURSE INTO A COUPLE DAYS OF INTENSE STUDYING. STUDYING THE NIGHT BEFORE AN EXAM WILL RESULT IN POOR GRADES!**

Tentative Syllabus: This is a **TENTATIVE** outline for the class. Although we will attempt to maintain this schedule, it may be subject to change. Check the class website for the most up to date schedule in real time.

Week/Date	Topic	Reading assignments
1		
Mon Jan 11	Review Syllabus & Introduction	
Wed Jan 13	Covalent Bonding, Shapes of Molecules, & Resonance	Chapter 1, Review Gen Chem
Fri Jan 15	Covalent Bonding, Shapes of Molecules, & Resonance	Chapter 1, Review Gen Chem
2		
Mon Jan 18	<i>MLK Holiday</i> – no class or discussion	
Wed Jan 20	Alkanes & Cycloalkanes	Chapter 2
Fri Jan 22	Alkanes & Cycloalkanes	Chapter 2
3		
Mon Jan 25	Alkanes & Cycloalkanes	Chapter 2
Wed Jan 27	Alkanes & Cycloalkanes	Chapter 2 (Quiz 1/Chapters 1)
Fri Jan 29	Stereochemistry & Chirality	Chapter 3
4		
Mon Feb 1	Stereochemistry & Chirality	Chapter 3
Wed Feb 3	Stereochemistry & Chirality	Chapter 3 (Quiz 2/Chapter 2)
Fri Feb 5	Stereochemistry & Chirality	Chapter 3
5		
Mon Feb 8	Acids & Bases	Chapter 4
Tue Feb 9	Exam 1 (7–9:00 pm)	Chapters 1-3
Wed Feb 10	Acids & Bases	Chapter 4
Fri Feb 12	Acids & Bases	Chapter 4
6		
Mon Feb 15	Acids & Bases	Chapter 4
Wed Feb 17	Alkenes	Chapter 5
Fri Feb 19	Reactions of Alkenes	Chapter 6
7		
Mon Feb 22	Reactions of Alkenes	Chapter 6
Wed Feb 24	Reactions of Alkenes	Chapter 6 (Quiz 3/Chapters 4)
Fri Feb 26	Reactions of Alkenes	Chapter 6
8		
Mon Mar 1	Reactions of Alkenes	Chapter 6
Wed Mar 3	Reactions of Alkynes	Chapter 7 (Quiz 4/Chapters 5 & 6)
Fri Mar 5	Reactions of Alkynes	Chapter 7
9		
Mon Mar 8	Reactions of Alkynes	Chapter 7
Tue Mar 9	Exam 2 (7–9:00 pm)	Chapters 4-7
Wed Mar 10	RX & Radical Reactions	Chapter 8
Fri Mar 12	RX & Radical Reactions	Chapter 8

Week/Date		Topic	Reading assignments
Mon	Mar 15	Spring Break – no classes	
Wed	Mar 17	Spring Break – no classes	
Fri	Mar 19	Spring Break – no classes	
10			
Mon	Mar 22	RX & Radical Reactions	Chapter 8
Wed	Mar 24	RX & Radical Reactions	Chapter 8
Fri	Mar 26	Nucleophilic Substitution	Chapter 9
11			
Mon	Mar 29	Nucleophilic Substitution	Chapter 9
Wed	Mar 31	Nucleophilic Substitution	Chapter 9 (Quiz 5/Chapter 8)
Fri	Apr 2	Nucleophilic Substitution	Chapter 9
12			
Mon	Apr 5	β -Elimination	Chapter 9
Wed	Apr 7	β -Elimination	Chapter 9
Fri	Apr 9	β -Elimination	Chapter 9
13			
Mon	Apr 12	Alcohols	Chapter 10
Wed	Apr 14	Alcohols	Chapter 10 (Quiz 6/Chapter 9)
Fri	Apr 16	Alcohols	Chapter 10
14			
Mon	Apr 19	Ethers, Sulfides & Epoxides	Chapter 11
Tue	Apr 20	Exam 3 (7–9:00 pm)	Chapters 8-10
Wed	Apr 21	Ethers, Sulfides & Epoxides	Chapter 11
Fri	Apr 22	Ethers, Sulfides & Epoxides	Chapter 11
15			
Mon	Apr 26	Catch up OR Putting it all together – practicing synthesis	
Wed	Apr 28	Catch up OR Putting it all together – practicing synthesis	
Fri	Apr 30	Catch up OR Putting it all together – practicing synthesis	
Wed	May 5	Final Exam 2:45 – 4:45 PM	Cumulative (Every year, this final exam meets at the same time as Anatomy A215 & Business X100; hence an alternative final exam will be given on Tuesday, May 4, 2:45 – 4:45 pm)

*"I have a mind like a steel trap. Stuff gets in there and **WHAM!** it never gets back out again."
– **Don't let this be you!***