

**SYLLABUS
ORGANIC CHEMISTRY 121**

AMBLER

**FALL SEMESTER 2006
TEMPLE UNIVERSITY**

Keep this syllabus. It contains much information essential to your success in this course.

	TIMES	ROOM	INSTRUCTOR
Lecture Sec 101-102	Tues 10:10 - 11:30 am Thurs	CG 007	Dr. D. Hill
Recitation Sec 101	Tues 3:00 – 3:50 pm	CG 007	Dr. D. Hill
Sec 102	Thurs 11:40 – 12:30 pm	DX 202	Dr. D. Hill

Laboratory: Chemistry 123 is a separate course, which has Chemistry 121 as a co- or pre-requisite. Direct questions to Dr. Hill or Organic Coordinator: Dr. Findeisen, BE 406, afindeis@astro.temple.edu

Course Description: Organic Chemistry (Chem 0121) is the first semester of a two semester sequence. It has General Chemistry (C072, C082, C092, or the equivalent) as a prerequisite. The contents of this course include structure, synthesis, and reactivity of hydrocarbons and some functional groups. Principles of organic spectroscopy and stereochemistry as well as the introduction of kinetics and reaction mechanisms are topics.

Attendance: Your attendance at all lectures and recitations is expected and essential to your success in this course. **For the record attendance will be taken.** In case of emergency, you may attend a lecture or recitation section other than your assigned one; **however all quizzes and examinations must be taken during the assigned class.** **There will be no make-up of missed quizzes, tests, or examinations!**

Textbook: John McMurry, "Organic Chemistry, 6th Edition" Brooks-Cole Publishing Co., 2004 is required. You should read each chapter before its lecture. "Study Guide & Solutions Manual for Org. Chemistry" by Susan McMurry is recommended. Both books as well as sets of molecular models are available in the TU Bookstore. Any other organic chemistry text is a useful supplement.

Grading:	Midterm Exam 1:	200 points	[While point totals can not be translated exactly into letter grades, a score of 850 points or more, will almost certainly be an "A".]
	Midterm Exam 2:	200	
	Final :	400	
	Recitation:	<u>200</u>	
	Maximum Score:	1000	

Note: Barring miscalculation, all grades are final. Once grades are submitted no changes can be made.

Examination Policy: All quizzes, tests, and examination are "Closed Book". This means no books, notes, or reference material may be consulted during the Test period. Giving or receiving information during examinations is a violation of the Temple Student Discipline Code and will result, at minimum, in a grade of F for this course. Electronic devices, including calculators, phones, and PDA's are not permitted in the exam room. **There will be no make-ups of missed quizzes, tests, or exams.**

Recitation: There will be five 25 minute recitation quizzes (50 points each); the lowest will be dropped. Quizzes will be given during the lecture class, graded and returned to you in the next recitation class for discussion. **There will be no make-up quizzes, tests, or exams.** Find out from your instructor what the quiz average was. Your recitation grade relative to the quiz average is a good indication of your current performance. All students must be assigned to a recitation section **that is designated for your lecture.** If you do not have one, see Dr. Hill or Dr. Findeisen in BE 406, afindeis@astro.temple.edu

Schedule: Chemistry 121 (August-December 2006) **NOTE: Dates (exams etc) are tentative.**

Lecture Week of:	Topic (McMurry) -----Chapters-----	Recitation Problems Assigned for Discussion in Recitation	
August 28:	1,2	Ch.1: 1-4,6a,b,c,8,11-16,22,24-26,28-32,36,40,43,44,46	
Sept: 4:	3	Ch.2: 1-3,5-7,15,17,18,20,21,26,30,35-37,41,48,49,55-57	
Sept. 4 Labor Day Holiday			
11:	4	Ch.3:1,2,4,5,6,8,9,11a,b,12,13,15,16,19,28,35,38,39,43,44b,f,45a,e,g,57,58	
Sept. 11, Last day to drop			
18:	5	Ch.4: 1-9,11,12,14-17,25,28,31,33,35,37,38,41,43,44,51,53,56	QUIZ #1
25:	6	Ch.5: 1-4,6-11,13-16,21,24,28,29,30-32,37,42,44	
MID-TERM EXAMINATION 1 (CHAPS.1-4) OCTOBER 3			
-Mid-term exams discussed in recitation			
Oct. 2:	7	Ch.6: 1-3a,c,e,5-7,10,11,13-16,19,24,29,30,35,37-39,42,44-46,54	
QUIZ #2			
9:	8	Ch.7: 1-10,12-16,23,25,26-28,30,31b,36,42-45,48,50,56	
16:	9	Ch.8: 1-6,9-14,20,23,25,26,29,30,31a,b,d,34,35,37,38,40,41,43	
QUIZ #3			
23:	10	Ch.9: 2,3,7-9,11,12,14-23,32,38,43,45,47,50,51,54,56,59,60,69	
MID-TERM EXAMINATION 2 (CHAPS.1-8) OCTOBER 24			
-Mid-term exams discussed in recitation-			
Oct. 30 is the last day to withdraw from the course without penalty (Grade of W)			
Oct. 30:	11	Ch.10: 2-5,7,8,10-13,21-23,29,31,32,33,35,42	QUIZ #4
Nov. 6:	12	Ch.11: 1,2,4,6-8,11,12,14,15,17,19,20,27,31,33,35,37,40,43,55	
Spectroscopy software (Main Campus-Anderson Hall)			
13:	13	Ch.12: 1-4,10,11,22,23,25,28,29,31,37a,b,38,39,42,48,49,50	
20:	14	Ch.13: 3,6,8,9,11,13,14,16,18,19,20,21,31,32,36a,b,37,38,43,44,46,49-53a,55,56	
Thanksgiving Recess Nov. 23-Sunday Nov 26. Note: Tues/Wed schedule is changed to Thurs/Fri schedule during the week of Nov 20.			
Nov. 27:	14	Ch.14: 1-13,15,16,20,27,28,33,37,41	QUIZ #5
Dec. 4:	Classes end Wed. Dec. 6. Study Days: Dec. 7 & 8.		
11:	Final Exam week; Final Exam: Tuesday, Dec 12 (8:30-10:30 am).		

EXAM SCHEDULE:	Lec	Exam	Date	Time	Room
	Lec 1	Final	12/12	8:30-10:30	TBA

Office Hours: Office hours by appointment. In addition the time below reflects scheduled office hours. Tuesday 9:30 to 10:00, 2:30 to 3:00, Thurs: 9:30 to 10:00

	Office	e-mail address	phone number
1	Dr. Hill CG 007	hill@temple.edu	215-204-7118 (Chem. Dept)

Incompletes/Withdrawal: The grade of incomplete, I, will be considered only in those cases where at least 40% of the term's work has already been completed, and where there is a valid excuse (medical or similar) for missing the remainder of the course. **The fear of earning a poor grade is not considered a valid excuse.**

For those students who are assigned a grade of "I", all previous scores will stand and be used in the calculation of the final score when the course is completed. Students wishing to pursue an incomplete must obtain an Instructor Approval for an Incomplete Form (available from the web page) that the student

and must complete, before taking it to Dr. Hill to be used to drafting the official incomplete contract. Only Dr. Hill can sign and process incomplete contracts. Incomplete contracts must be completed **prior** to the Final Examination. The Incomplete must be made up by an agreed date and a default grade assigned should the course not be completed by the agreed upon date.

Problems: Assigned problems are listed above. Additional problems may be assigned from time to time. Answers to all assigned problems can be found in the Study Guide. It is essential that you work through each problem and understand the theory/method used for its solution, and do this **BEFORE** the recitation in which it is discussed. Mere copying of the answer into your notebook is **useless**. Experience has shown that students who do more than the assigned problems do well in this course. Quiz and Exam questions will be in similar format to book problems. **Occasionally, assigned problems will be collected and checked.**

Some Friendly Advice - Organic Chemistry is a difficult course. For many, it will be the most difficult and time-consuming of your college career. You can make it easier on yourself by doing the following: (1) Do as many problems as you have time for beyond those assigned. Even if they are from another book, the practice will help. (2) Do study regularly. If you fall behind, it's hard to catch up. (3) You should understand theory and method. You may try to memorize definitions and summaries at the end of each chapter, but there is far too much material to memorize everything.

Unlike many other courses, the concepts introduced each week of the class will remain important during the remainder of the course, right through the second semester.

GENERAL INFORMATION -

Specific Goals and Objectives:

The primary objective of this course is to introduce the student to the fundamental principles of organic chemistry. More specific objectives are:

- To learn the details of chemical bonding and the different hybridizations (sp^3 , etc.).
- To learn about isomers (constitutional, configurational and conformational).
- To learn in a systematic manner through mechanisms a variety of organic reactions involving carbocations, free radicals, carbenes, S_N1 , S_N2 , E_1 , E_2 , and electrocyclic reactions.
- To learn about resonance.
- To be familiar with the nomenclature, preparation and reactions of the functional groups: alkanes, alkenes, alkynes and alkyl halides.
- To understand the three dimensional shapes of simple organic molecules (stereochemistry, how their shapes affect reactivity through the use of molecular models).
- To begin to be able to do multiple step transformations of simple organic molecules, i.e. begin to learn to construct more complex molecules from simple starting materials (organic synthesis).

Student Learning Outcomes:

Students will be able to:

- Recognize simple alkanes, alkenes, alkynes and alkyl halides and know the hybridization of each functional group.
- Be able to name in a systematic manner (IUPAC) simple organic compounds such as alkanes, alkenes, alkynes and alkyl halides.
- To be able to recognize and distinguish the three major types of isomers (constitutional, configurational and conformational).
- To be able to construct models (using model kits) of simple organic compounds such as alkanes, alkenes, alkynes and alkyl halides.
- To understand the following simple mechanisms: electrophilic addition, free radical halogenation, S_N2 , S_N1 ,
- E_1 , E_2 and electrocyclic reactions such as the carbene and Diels-Alder reaction.
- To know about 30 organic reactions and be able to use them in organic synthesis.

- To develop an appreciation for the concept of resonance.

Closed Sections: If the recitation or laboratory section(s) you would like are closed you should continue to check the Diamond Line & On-Line Course schedule (see Drop/Add above). You should also examine your schedule carefully to determine if any of the other open sections fit your schedule. After exploring all other alternatives the student may request a Closed Section Approval Card (i.e. Green Card). To do this, the student must attend the first week of recitation and/or lab for the section(s) they wish to add. After considering the availability of space, a limited number of Green Cards MAY be issued at that time on first come first serve basis. Only Dr. Findeisen may issue green cards. Students should have a second and even third choice in case they are unable to obtain their first choice. No Green Cards will be issued before the first scheduled meeting of that section.

Readings: Even though you may not understand the material fully the first time, you should read through each chapter **BEFORE** it is scheduled to be discussed in the lecture (see attached calendar). You will be held responsible for all the text material in the following chapters, except for any sections that your instructor specifically tells you that you may exclude. Unforeseen circumstances may require that adjustments be made to the schedule. Check the web page for announcements, changes, and updates.

Homework: In order to obtain a practical understanding of how chemical theory is applied, you will need to work through the assigned end-of-the-chapter problems. The more important topics have more assigned problems. **You should be ready to discuss them when your recitation class is scheduled to deal with the chapter material (see attached calendar)**. The listed problems represent the minimum necessary for you to develop a working foundation in chemistry. You are encouraged to work additional problems and seek help outside the classroom. Unexpected circumstances may cause your instructor to make changes to this schedule. Check the web page for announcements. If you miss a class, be certain to find out if there have been any schedule changes.

HELP!!! Make certain you take full advantage of all the academic support services available at Temple - both here and on the Main Campus. These include instructor office hours, the Math and Science Resource Center (MSRC) located in Curtis Hall Room 17, 13th & Montgomery, Main Campus in addition to the **tutoring center on the Ambler campus in 201 Bright Hall**. The services provided at the MSRC include one-on-one tutoring, computer lab, weekly group tutorials/supplementary instruction, final exam review sessions, and a resource library. The center on the main campus is open 6 days a week AND IS FREE. For additional information check <http://www.temple.edu/~MSRC>.

Disability Resources and Services: Any student who has a need for accommodation based on the impact of a disability should contact their instructor privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex or in 104 West Hall on the Ambler campus at 215-283-1237 for further information.

Problems: You should first attempt to resolve any problems that you are having with your laboratory or recitation instructor(s). If after speaking with the instructor you have not resolved the issue, you should speak with the course coordinator before speaking to your lecturer. As coordinator he will attempt to mediate, but the ultimate decision is often determined by department policy. **DO NOT** expect your instructor to make new policy. *However, if you are having problems with the professional conduct of your instructor you should contact the course coordinator immediately.*

Make-ups: There will be **no make-ups of missed recitation quizzes, tests, or final examinations.**

Cheating: All students are expected to adhere to the highest levels of academic integrity. Any students found cheating (i.e. copying answers to exam, quiz, or homework; submitting experimental data that they did not collect; presenting graphs and calculations; or otherwise taking credit for work that they did not perform) will receive a failing grade in the course. They will also be reported to the Dean's office in the College of Science and Technology.

Miscellaneous: 1. CELL PHONES MUST BE TURNED OFF DURING LECTURE AND EXAMS. 2. No electronic devices including calculators are permitted during exams or quizzes. 3. Once an exam begins if you leave the room you must turn in your exam. 4. Photo ID may be required at any test. 5. Lecture will begin promptly at 10:10 and end at 11:30. Plan to arrive on time. You are responsible for all material and any announcements. If you have questions regarding missed material you may ask a colleague or the instructor. 6. In consideration of your fellow students you are asked to remain in your seat until the end of class except in case of emergency.

Policy on Student and Faculty Academic Rights and Responsibilities

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy # 03.70.02) which can be accessed through the following link:

[http://policies.temple.edu/getdoc.asp?policy_no=02.78.13.](http://policies.temple.edu/getdoc.asp?policy_no=02.78.13)

Again there will be no make-ups for missed quizzes, tests or exams. Should you miss a quiz that quiz will be counted as your lowest quiz grade and will be dropped. If you miss a midterm the second midterm will be prorated. If you miss the second midterm, your final examination grade will be prorated. You should make every effort to take ALL quizzes and exams regardless of your level of preparation. If you are staying current with the material you will benefit by the experience of participation in an exam or quiz.

NOTE: ORGANIC CHEMISTRY LABORATORY, CHEMISTRY 123, WILL MEET THE FIRST WEEK OF CLASS AS SCHEDULED