

**CHEMISTRY 321 (ORGANIC CHEMISTRY 2)**  
**FALL SEMESTER 2007**

**INSTRUCTOR:** Mark Stocksdale  
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**LECTURE:** M,W,F 9:00 AM; SH 035  
**LABORATORY:** Section 1 (Monday 1:00 PM – 4:00 PM)  
Section 2 (Tuesday 1:00 PM – 4:00 PM)  
Section 3 (Wednesday 2:30 PM – 5:30 PM)

**TEXT:** (REQUIRED, and available at Earlham Bookstore as a discounted packaged-deal)  
Organic Chemistry, 8th Ed.; Solomons and Fryhle; Wiley & Sons 2004  
Study guide and Solutions Manual; Model Set

Course related materials will be available online at : <https://moodle.earlham.edu>.

Direct link to the Darling Molecular Model Company:  
[http://www.darlingmodels.com/item--KIT-3-ISBN-0-9648837-4-0-MOLECULAR-VISIONS-Organic-Kit--kit\\_3\\_student.html](http://www.darlingmodels.com/item--KIT-3-ISBN-0-9648837-4-0-MOLECULAR-VISIONS-Organic-Kit--kit_3_student.html)

**COURSE:** This is the second semester course of organic chemistry, and it will build upon the principles learned in the first course. Topics will include further reactions and interconversions of functional groups as well as modern spectroscopic methods of structure elucidation. Whenever appropriate the biological relevance of the organic topics will also be discussed. The approach of this course will be to solve problems and projects by emphasizing the logic of organic reaction mechanisms and retrosynthetic analysis. Further study tips (**very good ones**) and advice are found in the text on pp. xxxi – xxxii.

A weekly 3-hour laboratory will provide a small-group learning environment where each student will have hands-on experience with modern organic methods and techniques. Laboratory experiences are designed to complement the lecture. Some of the labs will be planned (traditional) labs and some of the labs will be student-designed, given certain parameters. Most of the labs will be done in small groups or pairs. Students are encouraged to begin working as soon as possible on the student-designed labs, as they will need to do library research work to assemble information and procedures.

**PREREQUISITE:** Chem 221 (Organic 1 lab and lecture) with **at least a "C" final grade.**

**ACADEMIC INTEGRITY:** Earlham's academic integrity policy applies to all scored assignments in both the lecture and laboratory sections of this course. Full discussions and explanations of Earlham's policies and guidelines (including Academic Integrity) are found at the following url: <http://www.earlham.edu/policies/>. All students will be held to these policies. Each student is personally responsible for reading and knowing/understanding the content of these policies. Individual assignments may list/detail additional specific expectations as well as permitted resources. If you have questions or need clarity regarding expectations on any assignment, **ASK (Mark) BEFORE you ACT!**

**QUIZZES:** Quizzes will typically cover course material most recently addressed, and will be given during the final 15-20 minutes of the class period assigned. Seven (7) quizzes will be given; only the top five (5) quiz scores for an individual will be kept. **THERE WILL BE NO QUIZ MAKE-UPS.**

**EXAMS:** Unless modifications are made in class, each exam will cover sections listed on the schedule. Each exam will begin promptly at 9:00 AM and will end at 9:50 AM. The amount of material on each exam will reflect this time constraint. When appropriate, additional take-home sections will be incorporated; details regarding specific permitted resources will be covered/explained for each take-home exam section.

Any student with a documented disability (e.g., physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact Academic Support Services and the instructor at the beginning of each semester. *Accommodation arrangements must be made during the first-two weeks of the semester.* **Documentation must be supplied to the instructor.**

*There will be no make-ups for missed exams except for legitimate reasons.* Exams are to be taken on the day and time specified on the schedule. If you know in advance that you must miss an exam, you **must get prior approval** from the instructor. Upon approval, you will schedule an earlier alternative exam time (the exam may be different than given to the class but will be of similar difficulty). If you must miss an exam because of unexpected reasons (e.g. **sudden illness and/or other sudden emergency**) and could not arrange to notify me in advance, then **you must contact me** as soon as the situation permits to explain the situation. If you don't reach me at my office number, then leave a message on the answering system at my office number. You may, *in addition*, send an e-mail message. Having multiple exams on the same day is not considered an unanticipated emergency. Failure to adhere to these policies will result in a zero (0) being recorded for the missed exam (**NO EXCEPTIONS**).

**FINAL EXAM:** The final exam will be cumulative including all new material covered after Exam 3. There are **no exemptions** from the final exam.

**LABORATORY:** The laboratory grade will account for 20% of your overall point total. Grading, expectations, and requirements for the laboratory are outlined in the laboratory syllabus. Further details will be communicated to you by your laboratory instructor.

**HOMEWORK:** There will be **no graded homework** for this course. Each student is considered an **adult learner** and **is expected and responsible** to attempt all chapter problems and to keep up with the material being covered. All answers to suggested text problems are found in the *Study Guide and Solutions Manual*. Often problems found on quizzes and exams will be of similar format and difficulty as those in the text. Additional practice problem sets will be available throughout the semester.

**OFFICE HELP:** **OPEN DOOR POLICY** and/or **BY APPOINTMENT:** I am available to assist anyone who needs/wants additional help and/or feedback. Please stop by my office anytime the door is open. Additionally, make an appointment for a scheduled help time. *Do not overlook this valuable resource.*

**SCHEDULE:** The attached schedule gives approximate dates for classroom coverage of specific sections from the text. Exam and quiz dates will not be altered but will reflect any changes made in the projected classroom coverage of topics (accelerated or decelerated).

**EXAM DATES:** Exam 1: Sept. 14      Exam 2: Oct. 19      Exam 3: Nov. 16

**QUIZZES DATES:** Aug. 29;      Sept. 10;      Sept. 28;      Oct. 10  
Oct. 31;      Nov. 12;      Dec. 3

**FINAL EXAM:** Monday **December 10, 2007 8:00 AM**

<b>EVALUATION:</b>	Exams:	3 x 100 pts	300 pts	40.0%
	Quizzes:	5 x 20 pts	100 pts	13.3%
	Final Exam		200 pts	26.7%
	<u>Laboratory</u>		<u>150 pts</u>	<u>20.0%</u>
	Total		750 pts	100%

**IMPORTANT NOTE!!** A passing grade for this course will only be granted to students passing **both** the lecture and laboratory sections! For example: regardless of your lecture score, you must pass the laboratory to receive a passing grade overall for the course.

Date	Text Section(s)*	Subject(s)	Notes
8/22	Syllabus and Ch's 1-8	(Review)Student Review of Organic I ( <b>Hand-out; Q 1 Part A</b> )	
8/24	Ch 2.16	IR Spectroscopy Review	
8/27	Ch 2.16 / Ch. 9	IR Spectroscopy Review / NMR Introduction	
8/29	Ch 2.16 / Ch. 9	NMR	<b>Quiz 1</b> (Rev; IR /NMR)
8/31	Ch 9	NMR	
9/3	Ch 9	NMR	
9/5	Ch 9	NMR	
9/7	Ch 9	NMR/MS	
9/10	Ch 9	NMR/MS	<b>Quiz 2</b> (IR / NMR/MS)
9/12	Ch 9	NMR/MS	
9/14	<b>EXAM 1</b>	<b>Essentials of Ch's 1-8; Ch's 2.16, 9</b>	
9/17	Ch 10	Radical Reactions / Mechanisms	
9/19	Ch 10	Radical Reactions / Mechanisms	
9/21	Ch 11	Alcohols and Ethers	
9/24	Ch 11	Alcohols and Ethers	
9/26	Ch 11	Alcohols and Ethers	
9/28	Ch 11	Alcohols and Ethers	<b>Quiz 3</b> (Ch's 10,11)
10/1	Ch 12	Alcohols from Carbonyl Cmpds	
10/3	Ch 12	Alcohols from Carbonyl Cmpds	
10/5	Ch 12	Alcohols from Carbonyl Cmpds	
10/8	Ch 12	Alcohols from Carbonyl Cmpds	
10/10	Ch 13	Conjugated Unsaturated Systems	<b>Quiz 4</b> (Ch's 11,12)
10/12	<b>No Class</b>	<b>Mid-Semester Break</b>	
10/15	Ch 13	Conjugated Unsaturated Systems	
10/17	Ch 13	Diels-Alder Reaction	
10/19	<b>EXAM II</b>	<b>Ch's 10, 11, 12, 13</b>	
10/22	Ch 14	Aromatic Cmpds	
10/24	Ch 14	Aromatic Cmpds	
10/26	Ch 15	Reactions of Aromatic Cmpds	

10/29	Ch 15	Reactions of Aromatic Cmpds	<b>Quiz 5</b> (Ch's 15,16) <b>(Last Drop Day)</b>
10/31	Ch 15	Reactions of Aromatic Cmpds	
11/2	Ch 16	Aldehydes/Ketones I	
11/5	Ch 16	Aldehydes/Ketones I	
11/7	Ch 16	Aldehydes/Ketones I	
11/9	Ch 16	Aldehydes/Ketones I	
11/12	Ch 17	Aldehydes/Ketones II: Aldol Rxns	<b>Quiz 6</b> (Ch's 16,17)
11/14	Ch 17	Aldehydes/Ketones II: Aldol Rxns	
11/16	<b>EXAM III</b>	<b>Ch's 14, 15, 16, 17</b>	
11/19-11/23	Thanksgiving Break		
11/26	Ch 19	Enolate Chemistry	
11/28	Ch 19	Enolate Chemistry	
11/30	Ch 18	Carboxylic Acids/Derivatives	
12/3	Ch 20	Amines (Reading Assignment)	<b>Quiz 7</b> (Ch's 17, 18, 19)
12/5		Selected topics / Reading Assignments	
12/7		Selected topics / Reading Assignments	
<b>FINAL</b>	Dec. 10 (8:00 AM)	<b>Cumulative including material since Exam 3</b>	

\* Chapter sections listed for coverage are subject to change as needed and will be announced in class.