

CHEMISTRY 322 ORGANIC CHEMISTRY FALL 2009

MWF 11:45-12:45 201A Natural Science Facility
Instructor: Thomas Clausen
Office: 188 Reichardt Building

Telephone: 474-5512 (Voice Mail)
E-Mail fftpc@uaf.edu

Required Materials

1. *Organic Chemistry* 7th Ed., J. McMurry, Brooks/Cole
2. *Preparing for Your ACS Examination in Organic Chemistry*; ACS, Division of Chemical Education Examinations Institute, Chemistry Dept., Univ. of Wisconsin.
3. OWL Pin Number
4. Clicker

Recommended:

1. *Study Guide & Solutions Manual for Org Chemistry*, McMurry
2. HGS Molecular Model Set

Objectives. This is the second semester of a two-semester series designed to introduce chemistry, biology, pre-meds, and other students to organic chemistry. Essentially chapters 17-25 and portions of chapters 27 & 29 of the seventh edition of *Organic Chemistry* by John McMurry will be covered either by lecture or reading or both. These chapters emphasize the chemistry of hydroxyl, carbonyl, ether, and amino groups which are common in biological molecules. Approximately 70 new organic reactions will be introduced with these functional groups. Many of the concepts introduced in the first semester of this sequence will be extensively used this semester. These concepts include:

Bronsted Acids/Bases
Nucleophilicity/Electrophilicity
Bonding (π vs. σ)
Resonance/aromaticity
Hybridization
Stereochemistry
Spectroscopy
Nomenclature
Mechanisms (including SN1, SN2, E1, & E2)

Grades. The final letter grade will be based on OWL homework (100pts), 2 one hour exams (200pts), a two hour American Chemical Society (ACS) standardized final (100pts), frequent quizzes (clickers; 50pts) and up to two *HyperChem* projects (25pts each). A total of 500 points are possible.

Your final grade will be based on a standard curve (90% =A; 80% = B; 70% = C and 60% =D). Plus/minus grades will not be given. I may choose to slightly relax this curve but I promise not to raise the standard.

Homework. A PIN number is provided with your copy of the text that once activated will provide you 12 months access to an excellent set of **On-Line Web-Based Learning (OWL)** problems. These problems are especially useful when accessed from UAF where connections are fast and help is more available. Worked solutions are provided during each session. .

Students will be given only five chances to solve most OWL homework problems (only one chance is allowed for “end of chapter problems”). If you miss a problem, it is important that you see what you did wrong before you attempt to do the problem again. Keep in mind that spelling and formatting errors will result in not getting credit for your answers.

OWL homework is usually due by 9:00 PM on the Tuesday after the lecture has completed covering the material (The actual due dates are given with each homework set). **No extensions will be granted.** Instead, I will not grade the lowest 10% of your OWL homework. Hence raw OWL grades of 70%, 80%, or 90-100% will be transformed to scores of 78% 89% and 100% respectively.

In addition to OWL homework, I encourage you to do as many text problems as time allows. The text is exceptionally good (it is the most popular organic text world wide) and the end of chapter problems tend to be excellent. Students who do well in this course are those who do lots of problem solving outside of class!

Quizzes. Many lectures will have a quiz in which you will respond using radio-frequency clickers. This will provide both you and me an opportunity to view how well you understand current material. Each correct answer will be counted as two points and all other responses will count as one point. No points will be given for non participation due to absences or malfunctioning clickers. At the end of the semester, your total number of clicker points will be adjusted by a multiplier to a 0-50 scale.

Hour exams. Two scheduled 1-hour 100-point exams covering the material in several chapters will be given on the following dates. If you miss an exam, be sure to contact me *before* the next class to make arrangements to make it up.

You are honor-bound not to obtain information about exam content from any source prior to taking a makeup quiz or exam.

Final Exam. A 110-minute final exam covering all lecture and reading topics will be given in NSCI 202 on Wednesday December 16th during the 10:15-12:15 time slot. This will be a standardized American Chemical Society Exam (multiple choice). It is highly recommended that you regularly make use of the ACS booklet “Preparing for your ACS Examination in Organic Chemistry; The Official Guide” throughout the semester.

HYPERCHEM PROJECTS: Several projects requiring the use of *HyperChem* will be assigned during the semester. Students may work individually or in pairs, but all reports should be written independently. The report for each project will be 2 to 3 pages long, showing the structure and other data, interpreting the findings, answering any questions posed in the assignment, and possibly referring to a literature source. A maximum of 25 points will be given for each project turned in (maximum of two projects).

Audit credit. In order to obtain audit credit in this course, students must attend class regularly, take at least five quizzes and other exams. Otherwise the result will be a **W**, not an **AU**.

Organic Chemistry Laboratory. Due to the limited space in the lab, students wishing to take Chemistry 324W must sign up as early as possible with the Departmental Administrative Assistant, Mist D’June-Gussak, in Room 194 of the Reichardt Building. Enrollment in the lab is very limited so you may have to reserve several semesters in advance.

Department of Chemistry Policy on Cheating. Any student caught cheating on graded work will be assigned a course grade of F. The student's advisor will be notified of this grade assignment and the student will not be allowed to drop the course.

Students with documented disabilities who may need reasonable academic accommodations should discuss these with me during the first two weeks of class. You will need to provide documentation of your disability to Disability Services in the Center for Health and Counseling, 474-7043, TTY 474-7045.

CHEMISTRY 322 LECTURE/EXAM SCHEDULE Fall 2009

Week of	<u>Monday, Wednesday Topic</u>	Notes
Monday August 31	Intro; Review of chapters 1-16 on Friday	No class on Monday or Wed
September 7	Chapter 17- Alcohols and Thiols	No class Monday (Labor Day)
September 14	Chapter 18- Ethers, Epoxides & Sulfides	Friday is last the last day to withdraw without receiving a W on your transcript
September 21	Chapter 19- Aldehydes and Ketones	Friday is the last day to apply for Spring Graduation
September 28	Review	EXAM I on Friday
October 5	Chapter 20- Carboxylic Acids	
October 12	Chapter 21- Carboxylic Acid Derivatives	
October 19	Chapter 21- Carboxylic Acid Derivatives	
October 26 drop	Chapter 22- Carbonyl α - Substitution	Friday is last day to
November 2	Chapter 23- Carbonyl Condensation Reactions	
November 9	Review	EXAM II on Friday
November 16	Chapter 24 Amines/phenols	
November 23	Chapter 25 Carbohydrates	No Class on Friday (Thanksgiving)
November 30	Chapter 25 Carbohydrates	
December 7	Chapter 27- Lipids	
December 14	Review on Monday and Final Exam on Wednesday 10:15-12:15.	