

Sign and print your name at the bottom to indicate that you have read this document.

Why am I being asked to initial and sign this document?

FERPA (The Family Educational Rights and Privacy Act), also known as the Buckley Amendment, was passed by Congress in 1974 to protect the privacy of student education records.

- By initialing the following course policies you are agreeing to partially wave some of your FERPA rights.
- Read each statement carefully. If you understand and accept the course policy described, **indicate this by initialing the statement.**
- Accommodations will be made for students who do not wish to initial one or more statements.

_____ **If you ask the instructor for a letter of recommendation, assumed in this request is permission to divulge personal information, such as your course grade, to the readers of this letter of recommendation.**

_____ **Graded quizzes and exams will often be returned via the group folder. This introduces the possibility of students in your group viewing your grades.**

_____ **I (student) understand that I am expected to read the syllabus, and that the professor will assume I have read the syllabus by next class.**

Signature

Date

Printed Name

ORGANIC CHEMISTRY II - CHEM 3422 Spring 2006; TR 12:30-1:45; Geography 7

Instructor: Dr. Vickie Geisler, vgeisler@as.westga.edu

Office: TLC 3237

Office Hours: Thursday 2-5 in 2109 all other times in 3237 by appointment

Office Phone: (678) 839-6405

Pre-requisite: Completing CHEM 2411 with a "C" or better. Those registering without the prerequisite may be assigned a grade of WF.

Co-requisite: **Note: Due to the co-requisite nature of CHEM 3422 and CHEM 3422L students withdrawing one of the two courses must also withdraw from the other.**

Problem-Solving Session: TLC 1103/1104 Wednesday, 5:30-6:30 pm and Friday 12:30-1:30 pm

Required Material: *Organic Chemistry*, John McMurry, 6th Ed.

2 or 3 inch 3-ring binder

Course Description: The second course of a two-semester sequence that will systematically explore reactions of carbon-containing compounds and the mechanistic pathways involved in these processes. Reactions that will be discussed include functional group transformations, oxidations, reductions, condensations and carbon-carbon bond formation. The course begins to teach the student how to systematically design a multi-step synthesis of organic compounds.

Objectives: To introduce the language of organic chemistry; to educate students to think independently about organic chemistry; to reason and think analytically in solving problems and making decisions in matters involving organic chemistry. To look for patterns and recognize qualitative similarities between seemingly unrelated facts. To develop a practical understanding for the causes of chemical change; to identify organic compounds using NMR; to predict reactivity from structure; and to learn to predict the outcome of a reaction never seen before and to communicate organic chemistry with clarity.

Classroom and Outside-of-classroom Expectations:

- This course will be taught using the Process Oriented Guided Inquiry Learning (POGIL) method instead of a traditional lecture.
- The majority of class time will be spent working in self-managed groups of three or four. I will assign group membership and reshuffle groups on a regular basis.
- Each group must collectively ensure....
 1. there is agreement on each question before moving on
 2. no one is going ahead or falling behind
 3. no one dominates the discussion and everyone feels comfortable speaking up, especially if they are frustrated, confused or behind.
- Each class will begin with a 5.0-minute quiz, individually taken, covering material from the previous class.
- The quiz is followed by group work on a ChemActivity. During this time I will walk around class, observe, ask and answer questions. You must bring your notebook to class every day. During class periods, group work may be interrupted for group reports, brief whole-class discussions, or mini-lectures. You must pause group work for these discussions.

- The POGIL material is designed to use leading questions to guide you towards the formulation of your own knowledge.
- I will serve as a coach to help students in learning the material.
- In many instances, I may not answer a question directly but may ask you a question that will lead you to discovering the answer for yourself.
- You must complete each day's ChemActivity sheet, including the exercises at the end of the activity and the assigned readings and problems in McMurry before the next class period, as they will form the basis of the 5.0-minute quiz.
- You are strongly encouraged to work outside of class in groups. Studies show that most successful students do much of their homework in a productive group environment and that most students who fail are working alone.
- It is highly suggested that you use your binder to store and organize all classroom-related materials. A suggested organization might be to group each day's work as follows: worked out ChemActivity exercises, any notes taken during class, worked out problems from McMurry. These might be ordered in chronological or reverse chronological order.
- During the last five minutes of class, I will stop group work to give you time to prepare your group's recorder's and reflector's reports.

Grading:

- **Quizzes:** After the first week there will be a five minute quiz at the beginning of almost EVERY class period except exam days. When you enter class, sit at your group table and be ready to start the quiz. If you are late, you will not get extra time for the quiz. The three lowest quiz scores will be dropped. Quizzes will be on material covered in previous class. You will not be excused from any quizzes; there are no make-up quizzes. A quiz missed for any reason will count as one of your "dropped" quizzes. The average of the remaining quizzes will count the same as an exam. Preparing for the quiz will be most effective if you do it in the context of a regular and productive study group, or with a study partner. Successful students report spending at least 3 hours preparing for each quiz. This entails:
 - Completing the ChemActivities (including exercises),
 - doing the assigned problems in McMurry and
 - reading the selected sections in McMurry.
- **Exams:** There will be four exams given on February 1st and 27th, April 3rd and 24th. No make-up exams will be given. An exam missed for any reason will count as one of your "dropped" quizzes. Each exam will specifically test class material covered since the previous exam. However, since the nature of chemistry is cumulative I will assume that you have mastered past material.
- **Final Exam:** The final exam will be a national ACS exam. It is a comprehensive exam over the entire course including material from CHEM 2411. The exam will be give on Thursday, May 3rd from 11-1.
- **Homework-** problems from the book and problems sets will be assigned on a regular basis. Students are permitted and encouraged to work together. Problem sets will be the basis for the problem sessions.

- **Problem Sessions: (Attend PS and earn up to two dropped quizzes)**
 - PS is a fun and interactive way to enhance your understanding of the material.
 - During PS you will work on the problem sets. This can earn you “PS points”.
 - Solve 4 PS on the board and earn 1 PS point. You will earn a dropped quiz for your 4th and 10th PS point earned.
- **Academic Honesty:**
 - All exams and quizzes will be closed book/closed notes, and will be taken individually (no help from your group members during quizzes or exams.)
 - During exams you may not use your own paper or other materials except your pen or pencil.
 - Academic dishonesty will not be tolerated. Academic dishonesty includes unauthorized use of any materials, notes, sources of information, or study aids or tools during a quiz or exam. It also includes the unauthorized assistance of any person other than the course instructor during a quiz or exam, the unauthorized viewing of another person’s work during a quiz or exam, or the unauthorized securing of all or part of any quiz or exam before submission by the instructor.
 - Violation of academic honesty will generate disciplinary action that may include a course grade of F. A student who is suspected of cheating must confess to all wrong doing at the first opportunity (when first confronted), or risk a harsher penalty. If you believe that there are situations in the course that foster academic dishonesty, please bring them to my attention. Likewise, if you have observed cheating, bring the details to my attention as soon as practical. Insofar as it is possible, your anonymity will be protected.
- **Calculation of Overall Average:**
 - Method 1. The quiz average, each hour exam score, and the final exam score will be added together and the total will be divided by 6.
 - Method 2. The lowest exam score is dropped from the calculation. The final exam counts twice. The quiz average, the three best exam scores, and double the final exam score will be added together and the total will be divided by 6.
- **Grading Scale:** A: 100-85; B: 84-75; C: 74-60; D 59-50; F: 49-0%
- **Note:** Last day to withdraw with a “W” is March 1st.

Additional Policies:

- Students are expected to attend all classes. A large part of the learning process in this course is based on the in-class activities. If you are not here you will not have a chance to participate in those activities. There will be no makeup quizzes – if you miss a quiz it will simply be one of the three that is dropped from the calculation. If you miss a class it is your responsibility to get class notes from another student in the class.
- If you must bring your cell phone to class, make sure the ringer is **OFF** during class. Any cell phones seen during an exam will result in an automatic F for the exam.
- This syllabus outlines the policies for the course. You are responsible for understanding them. Any changes in course policy will be announced in class or on the class WebCT site.
- Qualified students with disabilities should contact me as soon as possible to ensure that appropriate accommodations can be made.

Course Outline:

Exam 1

Chapter 13 Nuclear Magnetic Resonance Spectroscopy
Chapter 15 and 16 Aromatics: Aromaticity, Nomenclature, reactions at the benzylic position, and Electrophilic Aromatic Substitution

Exam 2

Chapter 17 Alcohols and Phenols
Chapter 18 Ethers and Epoxides
Chapter 19 Aldehydes and Ketones; Nucleophilic Addition Reactions

Exam 3

Chapter 20 and 21 Carboxylic Acids and their Derivatives: Nomenclature, acidity, spectroscopy, reduction, reactions with nucleophiles, decarboxylation, interconversion of derivatives
Chapter 14 Conjugated Dienes

Exam 4

Chapter 22 and 23 Carbonyl Alpha-Substitution and Condensation Reactions: Enolate Anions; Aldol, Claisen and Dieckmann Condensations, alkylation, conjugate addition to α,β -unsaturated carbonyl compounds

Review for Final

Useful web sites

McMurry: <http://chemistry.brookscole.com/mcmurry6e>

Organic Chemistry flash cards and tutorials: www.ochem.com

Virtual Textbook <http://www.cem.msu.edu/~reusch/VirtualText/intro1.htm>

Date	Chemactivity/Topic	Schedule McMurry Sections	Relevant Problems in McMurry
January 9	Introduction and Overview		
January 11	16B ^{13}C NMR	13.2-13.7	32,45,55,59-63
January 16	16C ^1H NMR	13.8-13.11	31,37,39,40,43,47, 49-53
	26 NMR of Aromatic Molecules	15.10	43-46
January 18	25A Aromaticity	15-15.3	18,19,25,32,34,38,39
	25B MO Explanation for Aromaticity	15.4-15.9	
January 23	29A Electrophilic Aromatic Substitution	16-16.4	
	29B Substituent Effects		28,29
January 25	29C Resonance Donating and Withdrawing groups	16.5-16.6	
	29D Summary of Directing Effects	16.7	28-34,36,43,47,48,64
January 30	30 Synthesis Workshop I	16.10-16.12	50-54,69,73
February 1	Exam I		

February 6	38 Acidity of Phenols	17.3
	Reduction of C=O	
	22B Oxidation reactions	17.8
	17C Acid Catalyzed Electrophilic Addition	
	18 Epoxide Ring Opening	
February 8	31A Nucleophilic Addition to C=O	17.5-6, 19-19.8
February 13	31B Nucleophilic Addition-Elimination	19.9
February 15	32- Protecting Groups	17.9, 19.11
February 20		
February 22		
February 27	Exam II	
March 1*	40A Reactions of Carboxylic Acids	
March 6	40B Reactions of Carboxylic Acids	
March 8	41A Reactions of Acid Chlorides	
March 13	41B Reactions of Acid Anhydrides	
March 15	Practice	
March 27		
March 29	33A Acidity of the alpha-Hydrogen	
April 3	Exam III	
April 5	33B Enol vs. Enolate	
April 10	34A Aldol Reaction	
April 12	34B Mixed Aldol Reaction	
April 17	34C Condensation Reactions	
April 19	35 Acid Catalyzed Aldol Reactions	
	36A 1,4-Addition to Unsaturated Carbonyl Compounds	
	37 Michael Addition	
	42A Claisen Reaction	
	42B Mixed Claisen reactions	
	42C Aldols vs Claisen	
	43 Decarboxylation	
April 24	Exam IV	
April 26	Review for Final	
May	Final	