Chemistry 221: Organic Chemistry I, Fall 2016

Section	**Chem 221-01A**
Meeting Time	**MWF 1:15-2:20 pm**
Location	**OSB 115**
Instructor	Dr. Annette Neuman
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Office	OSB 404
Office Hours	Mondays 2:30-4:30 pm and Tuesdays 10:00-11:30 am (drop-in) Or by appointment (e-mail me to set up a time)

Description

All life depends on molecules containing carbon, known as organic compounds. Organic Chemistry I is the first course in a two-semester sequence in which you will examine the special attributes of carbon that make it well suited to such an important task.

Oxford College is dedicated to a liberal arts education. The ultimate goal of a liberal arts education is not to provide a collection of knowledge, but rather to teach you how to think and how to learn. The study of science is an integral part of a liberal arts education, and mastery of organic chemistry will serve you well whether you pursue a career in science, healthcare, or another field. Success in organic chemistry requires a thorough understanding of fundamental principles and the ability to use these principles to analyze, classify, and predict. Medicine and other fields make similar demands. Your mastery of organic chemistry will not only provide you with knowledge about the molecules of life; it will also hone the critical thinking skills that will be invaluable in your career.

In Chemistry 221, you will develop strong skills in problem solving as you study concepts that explain how the world works. The skills you develop in organic chemistry will be invaluable as you continue your studies in medicine or other fields.

Learning Outcomes

By the end of Chemistry 221, students will

1. Classify and name organic compounds according to their functional groups,
2. Predict physical and chemical properties of different classes of organic compounds according to their functional groups,
3. Write reaction mechanisms for addition, elimination, and substitution reactions, and
4. Represent three-dimensional structures of molecules and predict the stereochemical changes when a compound undergoes a chemical reaction.

Course Materials

Required textbook: *Organic Chemistry,* 9th edition, by Leroy G. Wade and Jan William Simek

Optional: *Student's Solutions Manual for Organic Chemistry,* 9th edition, by Wade and Simek
Molecular model kit

Bring a notebook and pen or pencil to every class. It is not necessary to bring your textbook.

Topics

Chapter 1	Structure and Bonding
Chapter 2	Acids and Bases; Functional Groups
Chapter 3	Structure and Stereochemistry of Alkanes
Chapter 4	The Study of Chemical Reactions
Chapter 5	Stereochemistry
Chapter 6	Alkyl Halides; Nucleophilic Substitution
Chapter 7	Structure and Synthesis of Alkenes; Elimination
Chapter 8	Reactions of Alkenes
Chapter 9	Alkynes
Chapter 10	Structure and Synthesis of Alcohols
Chapter 11	Reactions of Alcohols

Grading

Participation	5%
Adopt-a-Molecule	10%
Quiz Total	10%
Exam 1	17%
Exam 2	17%
Exam 3	17%
Final Exam	24%
Total	**100%**

Your final letter grade will be determined by the usual scale. *There is no automatic rounding or curve to course grades*.

	93		90		87		83		80		77		73		70		67		60	
A		A-		B+		B		B-		C+		C		C-		D+		D		F

In fairness to all students, grades must be based solely on your performance in the course. If you believe I have misgraded an assignment, please bring this to my attention immediately. Otherwise, **under no circumstances will grades be open for negotiation.**

Partial credit will be awarded at my discretion and is not open for negotiation.

Participation

Engagement in the class meetings is crucial to your success in organic chemistry. For this reason, you will work in-class problems in groups on many days. I will collect your solutions and award participation points to everyone who contributed. (These solutions will only be graded for completeness, not for accuracy.) **If you are habitually late or absent, you will let down your group members who expect your participation in the group. Furthermore, your grade will be affected.**

In addition to the participation score, your course grade will be reduced for excessive absences. **If you miss more than three classes, you will lose one point for each additional absence.** Note that this is a **percentage point** of your final grade; excessive absences can quickly add up to a significant impact on your course grade.

Adopt-a-Molecule

Adopt-a-Molecule is a semester-long project in which you will have the opportunity to learn more about an organic molecule that is of interest to you. You will complete a worksheet about the physical and chemical properties of the molecule. **This worksheet will be due at the beginning of class on Friday, November 11.** You will also give a brief, three-minute presentation about your molecule to the class during the week of November 28.

Problem Sets Students are responsible for **selected problems in the text** and **weekly assigned problem sets**. Organic chemistry is learned *through the fingers*. Practice with a pencil and your models. Studious diligence with the problem sets immensely improves your understanding of organic chemistry and thus your performance in the class.

Quizzes Thirteen brief quizzes will be given in class **every Wednesday** to assess your understanding of the concepts discussed in the previous week of classes. The problems on these quizzes will be ***heavily related*** to the assigned homework problems. Therefore, though the problem sets will not be collected, ***it is in your very best interest to work through every problem, every week***. Your three lowest quiz scores will be dropped, so that your total quiz score will be composed of your ten best quiz scores.

Exams You will have three 65-minute in-class exams. The exams will be given during the regularly scheduled class period.

Exam 1	Friday, September 23	Ch. 1-3
Exam 2	Friday, October 21	Ch. 4-6
Exam 3	Monday, November 21	Ch. 7-9

You are responsible for all material discussed in lecture in addition to assigned textbook readings and other supplemental materials. **Do the assigned reading!**

Final Exam The final exam will have new material from Ch. 10-11. It will also have a comprehensive portion. You will be responsible for all the semester's material on the final exam. It will be given during the scheduled exam period, **Wednesday, December 14, 2 – 5 pm.**

Makeups If you must miss an exam, you must present me with an acceptable excuse **by the day of the exam**. If the excuse is considered acceptable, a makeup exam may be arranged to replace the missed exam. If the excuse is not considered acceptable, the exam grade will be a zero. It is up to my discretion whether an excuse is acceptable. In general, illness or an emergency are the only acceptable excuses for missing an exam. Missing an exam also counts as an absence in the course.

Review Sessions Review sessions will be held one or two days before each exam, at a mutually agreed upon time. These sessions are completely optional and will give you the opportunity to ask me any questions you may have about the current material.

Expectations Please behave in a manner that shows respect for me, your classmates, and yourself. Do not text or otherwise play on electronic devices during class. If this becomes a recurring issue, I will notice (whether or not I point it out), and ***this distracting and disrespectful behavior will adversely affect your course grade.***

You should minimize your trips to the restroom or other reasons for leaving during class. You may excuse yourself from class if absolutely necessary, but this behavior is distracting and should be kept to a minimum.

Take responsibility for your own successes and failures. Work hard, and don't make excuses!

Honor Code Academic integrity is crucial to the Oxford community. Therefore, as in all courses, you will be expected to adhere to the Oxford College Honor Code. Academic misconduct, as defined in the honor code, will not be tolerated and will be immediately referred to the Honor Council. **Collaboration is not permitted on quizzes or exams.**

Disability If you are registered with Access, Disability Services, and Resources (ADSR), please submit your documentation letter to me during the first week o the semester so that I can make appropriate accommodations.

Canvas The Chemistry 221 page on Canvas will be the primary means of communicating outside of class. It will also house supplementary course resources. **Please be sure to check the course page *daily.***

Student Work Student work submitted as part of this course may be reviewed by Oxford College and Emory College faculty and staff for the purposes of improving instruction and enhancing Emory education.

Tips for Success **You play the most important role in defining your success.** Here are a number of tips that I suggest:

1. **PRACTICE, PRACTICE, PRACTICE!** Organic chemistry is a course heavily based in problem solving. Do yourself a favor and stay ahead of the game. **WORK PROBLEMS**…*really work them.* Looking at the problem and then looking at the answer and saying, "Yeah, OK, I get it!" is passive studying of the *worst* kind. It not only does no good, it makes you overly optimistic about what you know. Too many students fool themselves into thinking they completely understand the material. If you cannot do the problems without looking at answers, you have actually learned very little.
2. Use the resources available to you: office hours, review sessions, and your classmates are all excellent resources to help you achieve success in this class.
3. The pace of this course is rapid. Stay current with the material, and don't get behind.
4. The average student will need to set aside *at least* eight hours a week to study for this class. Students come into this class with a wide variety of backgrounds. You may be able to get away with studying less than this, or you may need to devote much more time in order to succeed. Do not compare yourself to your classmates. Do what YOU need to do in order to succeed.