

**CHEM 32: Organic Chemistry**  
**Dr. Geoffrey Sametz**  
**Fall 2010**

**Location/Time:** BRL-101, T Th  
Section 010: 12:30-1:45pm  
Section 011: 9:30-10:45am

**Office Hours:** BRL-237, T Th 11:00am-12:00pm

**Email:** [sametz@udel.edu](mailto:sametz@udel.edu)

**Website:** [www.udel.edu/chem/sametz](http://www.udel.edu/chem/sametz)

**Textbooks:** *Organic Chemistry, 4th ed.* (Matland Jones, Jr.) ISBN 9780393931495

**CHEM 321/322 Laboratory Manual**

**Recommended Molecular Models:** Darling models™ ([www.darlingmodels.com](http://www.darlingmodels.com)).

If you have any problems regarding scheduling of lab sections or wish to see a department approved list of tutors, please see Linda Staib in the chemistry office (phone 831-2465 email: [lstaib@udel.edu](mailto:lstaib@udel.edu))

**Review/recitation sections:** *Times and Locations to be announced.*

**Examinations and Grading:**

Three 1-hour exams:	300 points
Final:	150 points
Lab:	<u>100 points</u>
Total:	550 points

Regrade requests must be submitted within two weeks from the date they are returned. Include a detailed written explanation of the suspected problem.

**The lowest of the three midterm grades for each student will be dropped.** Should you miss an exam and obtain a excused absence signed by the Dean of Students, a makeup exam may be arranged. All other non-excused absences from exams will be assigned the grade of zero. You must take the final exam to receive a completed grade for the course.

Your grade will be based on the earned percentage out of the total possible points from exams+final+lab (550). A curve will be applied to the final grades, and a plus/minus grading scale will be used.

The following grade cutoffs (percentage of total points) were used in the fall of 2009, and are shown only to give an indication of what score is typical to get a certain grade. The exact cutoffs for this semester will not be determined until after the final exam.

A	85-100
A-	79-85
B+	77-79
B	72-77
B-	69-72 (The average was a B-)
C+	67-69
C	-67
C-	60-63
D+	58-60
D	50-58
D-	47-50

25% of the class got As; 38% Bs, 20% Cs, 16% Ds, 1% F.

## Learning Goals

After successful completion of this course, the student:

1. will have an understanding of chemical bonding (covalent; ionic; van der Waal's forces) and their molecular orbital (MO) depictions. They will be adept at determining the hybridization (sp, sp<sup>2</sup>, sp<sup>3</sup>) of an atom and be able to combine hybrid orbitals to arrive at molecular orbitals. (1\*)
2. will be adept at drawing the Lewis structures of molecules and reactive intermediates, including those with formal charges. They will be able to provide reasonable resonance structures for reaction intermediates, as well as resonance hybrids.(1)
3. will have a basic understanding of acidity and basicity (both Brønsted-Lowry and Lewis) as it pertains to the reactions of organic compounds.(1)
4. will have a general knowledge of the properties and reactivity of different classes of organic compounds (including alkanes, alkenes, alkynes, alcohols, and alkyl halides).(1)
5. will be able to depict the three-dimensional structure of organic compounds. They will be able to describe the configuration of molecules (nomenclature; stereochemistry) as well as conformation (rotamers; Fischer and Newman projections; chair conformations of cyclohexanes) and be able to predict thermodynamically-preferred conformation(s).(1)
6. will be able to provide reasonable mechanisms for organic reactions.(1)
7. will understand the concepts of kinetic and thermodynamic control of reaction pathways, and be able to use these concepts to predict or manipulate the direction a reaction takes.(1)
8. will learn basic techniques used in the organic laboratory, including identification and purification of organic compounds, and performing reactions on the semi-microscale scale.(2 6 8)
9. will learn proper laboratory safety and hygiene. (7 8)
10. will be able to find and read a Material Safety Data Sheet (MSDS) for a chemical. (5)
11. will be able to keep an accurate laboratory notebook, and write an objective laboratory report. (9 10)

(\* Numbers in parentheses indicate the departmental learning goals (<http://www.udel.edu/chem/goals.html>) with which each course goal is aligned.)