

CHEM 322: Lecture Section 011
Organic Chemistry, 2nd Semester
University of Delaware
Spring 2014

Instructor: Prof. Mary Watson (237 BRL, mpwatson@udel.edu)

Office Hours: Tues, 3:30–4:30 pm, 220 BRL
Thurs, 10:30–11:30 am, 220 BRL

Lectures: TuTh 2 – 3:15 pm, 101 BRL

Midterms: Sat, March 8, 10 am – 12 pm, KRB 204
Sat, April 12, 10 am – 12 pm, KRB 204
Sat, May 3, 10 am – 12 pm, KRB 204

Note: All Chem 322 lecture sections (010, 011, and 012) will participate in common out-of-class exams.

Lab Coordinator: Dr. Geoff Sametz (sametz@udel.edu)

Head TA: Kelsey Roberts (kmrob@udel.edu)

TA's: Songnan Zhang (discussion, snzhang@udel.edu)
Jixin Liu (discussion + lab, jixinliu@udel.edu)
Tom Rivas (discussion, tomrivas@udel.edu)
Gabe Andrade (lab, andrade@udel.edu)
Ye-Geun Song (lab, yegsong@udel.edu)
Yiben Wang (lab, yibenw@udel.edu)
Bryan Klebon (lab, bdklebon@udel.edu)
Wei Bao (lab, baowei@udel.edu)
Ethan Zhang (lab, etzhang@udel.edu)

Discussions: TBA

Discussion sections are highly recommended! They will focus on advancing your knowledge of the course material and being able to apply that knowledge in solving problems. The discussion sections will be led by highly qualified TA's (Kelsey, Songnan, Jixin, and Tom). You may attend whichever section best fits your schedule.

Discussion sections will begin in the second week of class.

Website: http://www.udel.edu/chem/mpwatson/mpwatson/Chem_322.html

UD Capture: <http://udcapture.udel.edu/2014s/chem322-011/>

Textbooks: *Organic Chemistry, 4th Edition*
By Maitland Jones & Steven Fleming
Publisher: W. W. Norton & Co.

Chem 321/322 Organic Chemistry Lab Manual
By Wigal et al.

Molecular Models: You may use any reasonable ball and stick model set. Darling Models™ (www.darlingmodels.com) are available at the UD bookstore.

Lab Notebooks: Hayden-McNeil Student Lab Notebook with carbonless duplicate sets

Grades: Your grade will be based on the earned percentage out of the total possible points on the following:

Midterms	500 points (250 points each for two highest scores, lowest/third score dropped)
Final Exam	300 points
Labs	200 points
Music Video	10 points (extra credit, see handout)
Total	1000 points

Regrade requests must be submitted within 24 hours of the material being returned. Include a detailed written explanation of the suspected problem. Your midterms may be photocopied before they are returned. Do not change your midterms in any way if you are requesting a regrade. Altered exams returned for regrades will be considered an act of academic dishonesty. Please note: exams submitted for regrades will be regraded in their entirety.

The lowest of your three midterms will be automatically dropped.

Missed exams can be made up only for official, University-approved absences. You must provide an official, documented excuse for missed exams. If you are missing an exam due to a University-sponsored athletic event, you must provide your athletic schedule within the first 2 weeks of the semester. If you miss a midterm without providing an official, documented excuse, this midterm grade will be your automatically dropped midterm. Any make-up exams will be scheduled for shortly after the original exam, usually on Monday evening. You must take the final exam to receive a completed grade for the course.

A curve will be applied to the final grades, and a plus/minus grading scale will be used.

Assigned Problems: Practice problems from the book and elsewhere will be assigned to enable you to practice problem solving and cement the concept you are learning. It is crucial that you work all assigned problems.

Academic Dishonesty

Academic dishonesty will not be tolerated. Any student who commits academic dishonesty will be punished according to the University of Delaware's guidelines (<http://www.udel.edu/stuguide/09-10/code.html#honesty>).

Approximate Class Outline

Week (Dates)	Topic	Reading
1 (2/10 – 2/14)	Aromaticity	Ch. 13
2 (2/17 – 2/21)	Substitution of Aromatic Compounds	Ch. 13, 14
3 (2/24 – 2/28)	Substitution of Aromatic Compounds	Ch. 14
4 (3/3 – 3/7)	Spectroscopy	Ch. 15
Sat, 3/8	Midterm 1	
5 (3/10 – 3/14)	Spectroscopy	Ch. 15
6 (3/17 – 3/21)	Carbonyl Chemistry	Ch. 16
7 (3/24 – 3/28)	Carbonyl Chemistry	Ch. 16, 17
(3/31 – 4/4)	Spring Break	
8 (4/7 – 4/11)	Carboxylic Acids and Derivatives	Ch. 17, 18
Sat, 4/12	Midterm 2	
9 (4/14 – 4/18)	Carboxylic Acid Derivatives	Ch. 18
10 (4/21 – 4/25)	Carboxylic Acid Derivatives, Enols and Enolates	Ch. 18, 19
11 (4/28 – 5/2)	Enols and Enolates	Ch. 19
Sat, 5/3	Midterm 3	
12 (5/5 – 5/9)	Carbohydrates, Amino Acids	Ch. 22, 23
13 (5/12 – 5/16)	Carbohydrates, Amino Acids	Ch. 22, 23
TBA	Final Exam	

Recommended practice problems for each of the topics will be posted on the course website. It is strongly recommended that you work *all* suggested problems.

Labs

All information about labs is available on the lab website: <https://udel.instructure.com/courses/1234583>.

Labs begin in Week 2 of the semester.

Lab safety: All students must wear appropriate personal protective equipment during all labs: safety goggles, gloves, long pants, and close-toed shoes. Lab safety will be taken *very seriously*. You will be penalized if you neglect safety:

For first offense of the semester: Lose 20% of the points for that lab

For second offense of the semester (not per lab) and beyond: Immediate dismissal from lab and 0% for that lab.

Additional Resources

Scheduling Conflicts: Please see Ms. Linda Staib (lstaib@udel.edu, 102 BRL), if you have a scheduling conflict with the lab you are currently assigned to.

Tutoring: The Department of Chemistry & Biochemistry maintains a list of chemistry tutors. Please see Ms. Linda Staib (lstaib@udel.edu, 102 BRL) if you are looking for a chemistry tutor.

The Office of Academic Enrichment also offers drop-in group tutoring sessions. For a schedule, check their website: <http://ae.udel.edu>.

Course Learning Goals

After successful completion of this course, a student should be able to:

1. Describe the frontier molecular orbitals for conjugated π -systems and carbonyl compounds. (1)*
2. Understand the stabilizing effect of conjugation on electrons in π -bonds. (1)
3. Predict products, propose reaction conditions, and draw arrow-pushing mechanisms for reactions of dienes and allyl systems. (1)
4. Understand the concept of aromaticity. (1)
5. Predict products, propose reaction conditions, and draw arrow-pushing mechanisms for reactions of aromatic systems. (1)
6. Determine the identity of a chemical compound based on spectroscopic data. (1, 6)
7. Predict products, propose reaction conditions, and draw arrow-pushing mechanisms for reactions of carbonyl compounds. (1)
8. Predict products, propose reaction conditions, and draw arrow-pushing mechanisms for reactions of carboxylic acids and their derivatives. (1)
9. Understand the biological importance, structure and reactivity of carbohydrates and sugars. (1)
10. Understand the biological importance, structure and reactivity of amino acids. (1)
11. Safely perform a chemical reaction in a laboratory, making qualitative and quantitative observations of the experiment. (2, 6, 7, 8)
12. Prepare a laboratory report of an experiment they have performed. (10)

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