



Welcome to *Organic Structure and Reactivity*. I am looking forward to our class this semester. With this part of the syllabus I would like to give you some introductory information about the course.

Contact Information:

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Required Materials

General Chemistry by Donald A. McQuarrie, Peter A. Rock, Ethan B. Gallogly (ISBN: 1891389602)

Organic Chemistry/ 6e by Paula Y. Bruice (ISBN: 0321663136)

Sapling Learning One-semester access (you can purchase at the DU bookstore or online)

Safety goggles (not safety glasses)

A laboratory notebook (you should have one from last semester)

Suggested Optional Materials

Study guides and solution manuals for the textbooks

Meeting times and location

We will meet at 8:30 a.m. in Ebaugh 202 for class on Monday, Wednesday and Friday. For our laboratory, we meet on Thursday afternoon (1:30 p.m.) in the Organic Laboratory (Ebaugh 215).

Exam Schedule

Exam 1	Monday February 11 in class
Exam 2	Monday March 25 in class
Exam 3	Friday April 26 in class
Cumulative Final Exam	Friday May 3 from 9 to 11 am (code A; CHEM-132-01)

Statements and External Resources

Disability Statement. (text of this section provided by the Office of Academic Support and Enrichment)

Any student who feels he or she may need an accommodation based on the impact of a disability should contact me privately as soon as possible to discuss his or her specific needs. I rely on the Academic Support & Enrichment Center in 102 Doane to verify the need for reasonable accommodations based on documentation on file in that office. If you wish to take advantage of these accommodations, please let me know in advance so the appropriate arrangements may be made.

Academic Integrity Statement. (text and image of this section provided by the Provost of Denison University)

Proposed and developed by Denison students, passed unanimously by DCGA and Denison's faculty, the Code of Academic Integrity requires that instructors notify the Associate Provost of cases of academic dishonesty, and it requires that cases be heard by the Academic Integrity Board. Further, the code makes students responsible for promoting a culture of integrity on campus and acting in instances in which integrity is violated.

Academic honesty, the cornerstone of teaching and learning, lays the foundation for lifelong integrity. Academic dishonesty is intellectual theft. It includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for evaluation. This standard applies to all work ranging from daily homework assignments to major exams. Students must clearly cite any sources consulted—not only for quoted phrases but also for ideas and information that are not common knowledge. Neither ignorance nor carelessness is an acceptable defense in cases of plagiarism. It is the student's responsibility to follow the appropriate format for citations. Students should ask their instructors for assistance in determining what sorts of materials and assistance are appropriate for assignments and for guidance in citing such materials clearly.



For further information about the Code of Academic Integrity see <http://www.denison.edu/about/integrity.html>

Writing Center. (text of this section provided by the Denison University Writing Center)

The Center is a free resource available to all Denison students. Student writing consultants from many majors help writers one-on-one in all phases of the writing process, from deciphering the assignment, to discussing ideas, to developing an argument, to finalizing a draft. Because proofreading is a last step in that process, writers should leave plenty of time for getting their ideas right before expecting proofreading help. Consultants also can help writers with personal documents, like job and internship applications. The Center is located on the fourth floor of Barney-Davis Hall; satellite locations are on the third floor of the Library (the Entry level) and the first floor of Fellows near the Computer Lab. Appointments between 4 p.m. and 9 p.m., Sunday through Thursday, can be made in the Barney location by phoning 587-JOT1. The satellite locations are drop-in; check the website at <http://www.denison.edu/writingctr/> for those hours.

Courtesy Statement.

Please come to class on time, and plan to stay until the end. Please turn your cell phones off during class and do not send or receive text messages. If your phone rings during class, I will try to dance to its tune until you turn it off. I will also be duly embarrassed if my phone rings—yes I have made this mistake a time or two before. The use of laptop computers during class time is not allowed.

Grades & Grading

Students have different styles of learning, and therefore, different modes of communication that work best. However, success in life requires the mastery of many forms of communication. Thus, your final grades will depend on the assessment of your learning given in multiple formats, though largely it is from examinations.

The tentative point total for the semester is as follows:

item	percent	notes
Exam 1	10%	(100 points each)
Exam 2	10%	
Exam 3	10%	
Full-period Quizzes	15%	there are three of these
Final Exam	20%	(200 points)
Laboratory	20%	(scaled from the total number of lab points; lab includes reports, lab quizzes, lab assignments, and presentation)
Quizzes & misc.	10%	(scaled from the total number of short quiz & misc points, e.g. problem sets and assignments; I drop the lowest couple quiz scores)
homework	5%	Sapling Learning
Total	100%	

I will not be grading on a bell curve with some set number of D's or F's. It is possible for everyone to receive A's if everyone has complete mastery of the material.

The tentative grade assignments are:

88% or above	- some form of A
78% - 87.99%	- some form of B
68% - 77.99%	- some form of C
58% - 67.99%	- some form of D
Below 58%	will not pass the course

I will adjust these cutoffs downward if I feel it appropriate, but the numbers will not be raised.

Homework (approximately one assignment per week)

Here is the web page for the online homework. Registration instructions are found there. Online homework will be due approximately once a week. You need to check the site frequently for new assignments.

<http://www.saplinglearning.com/>

Quizzes

There will be some quizzes this semester. Three are full-period and listed in the syllabus. More than 75% of the time, other quizzes will be announced ahead of time. These quizzes are very short, and are administered during the last 10 minutes of a class period. At the end of the semester I will drop some amount of your lowest (or missed) quizzes. Because of this drop policy, there will not be make-up quizzes, even if the quiz is missed for an excused absence.

Engagement/Participation

Your class engagement/participation grade will be based on the amount and quality of effort that I perceive you are putting into the class. Ways to make it evident to me that you are putting forth effort to learn the material include: (1) attend class, (2) do the homework problems, (3) ask questions and respond to questions in class, (4) answer questions during problem sessions, (5) bring questions to ask me during office hours, (6) attend help sessions, (7) form study groups. Class engagement and participation will increase your level of success in this course and increase how much you get out of the course. In terms of your grade, I take this into consideration when a student's numerical grade is very near a dividing line between two grades.

Attendance

I will not take attendance, but I think it's a great idea to come to class. Material will be presented in class that is not in the textbook, so if you miss a class you are responsible for begging for class notes from your classmates. If you miss a problem session, it is likely this will affect your participation grade, and your assignment grade. If you miss a quiz, you will receive a zero for that quiz.

Unexcused absence from an exam will result in a score of zero on the exam. Examinations may be made up or an adjustment will be made if an excused absence is submitted and accepted prior to the examination.

Laboratory

TO OBTAIN A PASSING GRADE IN THE COURSE YOU MUST COMPLETE ALL ASSIGNED LABORATORY WORK. Makeup of non-health related excused lab absences must be arranged ahead of time. Excused lab makeups should be done during the same week the rest of the class does the lab experiment. When you need to make up lab with another section, you must inform me, but it is still **your responsibility to obtain permission to attend the other professor's lab**. Please exercise good manners by seeking that permission at least 24 hours before their lab is scheduled to meet. (The other CHEM 132 profs are Drs. Fuson, Katz, and McKay.) Where lab make-up can't be done in another section for some reason, the alternate assignment is a 4-page essay on the subject of the laboratory.

Office Hours

When you have questions you'd like to address in person I'm really happy to meet with you. In order to use the time efficiently, I ask that you make all appointments through a web-based application at <http://meetwith.me/jordanfantini> **Please use the site to confirm an appointment time even if we've verbally agreed to meet.**

You can also email me questions and I will respond within 24 hours. The "Chemspa" hours will be announced in the second week of class. In-class review sessions before exams will usually be offered.

Feedback and assessment

Feedback and assessment are an essential part of this course. In several ways, I will provide you feedback on your work throughout the semester. Quizzes, short assignments, and exams are some examples. Please see me if you cannot decipher my hand-written comments. The quizzes and short assignments are crucial lower-stakes feedback that will let you know how ready you are for upcoming exams.

I'll appreciate feedback from you on how the course is going. You can share that in person or with an email, and also at a couple formal points in the course: mid-semester and end-of-semester course evaluations. I'll give out an evaluation form in the seventh week of the semester; suggestions on that form could be adapted through the remainder of the semester.

The course evaluation administered by the college will occur at our last lab meeting. It is important to have your feedback on the effectiveness of the course and my instruction. I review this feedback when planning for the next course offering. College administrators read these evaluations to assess the quality of the course and my effectiveness as an instructor. I appreciate your thoughtful response to the evaluation questions.

Tentative Class Schedule for Chem 132-01**(exam dates are firm)**

This is an approximate schedule of when we will cover various topics over the course of the semester. I fully expect that the actual schedule will vary from this one in order to accommodate greater coverage of topics where you have greater interest or greater difficulty than I have anticipated. Clearly, this will affect when you should be ready to discuss what material. To minimize the problems that this can cause, I will discuss any changes to this calendar as they arise, and you should make an effort to ask me if you have ANY questions about what material we will be covering at what time. The column “**Read for today**” means read **before** that class meeting. (**B** = the Bruice text; **M** = the McQuarrie et al. text)

Date	Read for today	Topic	Lab on Thursday
₁ M Jan. 14	B1.1–15	Meet one another; cover goals and procedures, etc.	Check-in
W Jan. 16	M10.1,2,9	Precipitation and net ionic equations	Copper salt synthesis
F Jan. 18	M22.1,5	equilibria, solubility product, K_{sp}	
₂ M Jan. 21	no class	<i>Martin Luther King, Jr. day of learning</i>	Copper salt reduction
W Jan. 23	M11.1–8	stoichiometry and balanced equations	
F Jan. 25	M11.9–11	Limiting and theoretical yield (mini-quiz on Week 1)	
₃ M Jan. 28	M12.4,5	solution stoichiometry	Seven bottles
W Jan. 30	M10.11;24.1–3;B20.1	redox reactions	
F Feb. 1	quiz today	covers through Monday of this week	
₄ M Feb. 4	M19.1–3	Equilibrium	Williamson ether syn.
W Feb. 6	M19.4–6	Equilibrium	
F Feb. 8	M19.7–9	Le Châtelier	
₅ M Feb. 11	exam	covers first three weeks and the equilibrium constant	Le Châtelier
W Feb. 13	M14.1–6	thermochemistry	
F Feb. 15	M23.1–10	more thermochemistry, thermodynamics	
₆ M Feb. 18	M20.1–4;B1.16,17	acids & bases	Superfund 1
W Feb. 20	M20.5–7	pH & pK_a	Extraction
F Feb. 22	M20.10;B1.18–20	conjugate acids and bases	
₇ M Feb. 25	B1.21	trends in acid–base strength	Superfund 2
W Feb. 27	B1.27	Lewis acids and bases	Thin Layer Chrom.
F Mar. 1	quiz today	covers “ICE box,” thermo, acids	
₈ M Mar. 4	B2.1–9	nomenclature and functional groups	Superfund 3
W Mar. 6	B2.10–12	conformation and Newman projections	Recrystallization
F Mar. 8	B2.13–15	cyclohexane conformations	

Tentative Class Schedule for Chem 132-01 (continued)
(exam dates are firm)

Date		Read for today	Topic	Lab this week
⁹ M	Mar. 18	B5.1–5	conformation and stereochemistry	Superfund 4 IR, mp, NMR
W	Mar. 20	B5.6–11	asymmetric centers	
F	Mar. 22	B5.12–14,18	diastereomers and meso compounds	
¹⁰ M	Mar. 25	exam	covers everything from before break	Quantitative kinetics
W	Mar. 27	M17.1–6	kinetics	
F	Mar. 29	M17.8–9	kinetics	
¹¹ M	Apr. 1	M18.1–4	kinetics and mechanism	Qualitative kinetics
W	Apr. 3	M18.5–6	reversible reactions and catalysis	
F	Apr. 5	B3.7–9	reaction progress diagrams	
¹² M	Apr. 8	quiz today	covers conformation and stereochemistry	Reaction, part 1
W	Apr. 10	no class		
F	Apr. 12	B7.1–7	resonance and electron delocalization	
¹³ M	Apr. 15	B8.1–6	substitution reactions; electrophile, nucleophile, sterics	Reaction, part 2
W	Apr. 17	B8.6–9	S _N 1 versus S _N 2; solvent effects	
F	Apr. 19	B9.1–3	elimination reactions	
¹⁴ M	Apr. 22	B9.4–6	E1 and E2 eliminations	checkout, presentation course evaluation
W	Apr. 24	B9.8	substitution versus elimination	
F	Apr. 26	exam	covers through Week 12	
¹⁵ M	Apr. 29	to be announced	closing thoughts	
Friday May 3		COMPREHENSIVE FINAL EXAM		
9:00 - 11:00 AM (A)				

Laboratory Syllabus

Introduction

This lab coincides with the classroom portion of CHEM 132. While there is usually a relationship between the lab and lecture materials it will sometimes not be very direct.

You will be learning (1) fundamental ideas and techniques important to doing laboratory work, (2) careful observation and record keeping, (3) reliability and independence in the organic laboratory, and (4) the scientific questions that are important in the organic chemistry laboratory. Particular care should be devoted to your pre-lab preparations.

Safety

Working in an organic chemistry laboratory poses certain risks which we have attempted to minimize. However, safety in the laboratory requires a strong commitment from all of us.

1. ***Safety goggles must be worn at all times***. Do not wear contact lenses in the lab.
2. ***Sandals must not be worn in the lab at any time*** and shorts are discouraged. Clothing is much easier to replace than skin! A laboratory coat may be a good investment.
3. Never work alone in the laboratory. Someone must always be aware of what you are doing. Unauthorized experiments are not permitted.
4. Know the location and purpose of the safety devices in your lab.
5. Dispose of glassware and chemical wastes in the containers provided. Minimize the amounts of chemicals you use.
6. Know the properties of the chemicals you are using.
7. Avoid the use of open flames.
8. Avoid contact with the materials you are handling. Inhalation and absorption through the skin or open cuts are common routes of entry. Gloves may be recommended for certain operations.

The lab notebook

This semester you will make significant progress in learning to keep a notebook record of your work.

Use the beginning of the notebook keep a Table of Contents, which should be kept up to date. All pages should be numbered and none should be torn out. The record of each experiment should include the following sections:

Before coming to lab:

1. Title and experiment reference.
2. A statement of purpose—be specific.
3. Balanced equations, where appropriate, that define stoichiometry of the limiting reagent, the formation of side products, and/or the mechanism.
4. A table of reactants, products, solvents, and reagents that list relevant physical properties and the amounts of materials used. The information required for this table can be found in the description of the experiment, the Aldrich Chemical Co. catalog, *the CRC Handbook of chemistry and Physics* or the *Dictionary of Organic Compounds*.
5. Calculation of the theoretical yield. Your table should include all the information that was used to calculate the theoretical yield.

As you proceed to do the experiment:

7. A record of what you actually do that includes observations of physical changes, specific details about techniques used and the results obtained, and any calculations, *created as you perform the experiment*. Analytical results such as TLC slides should be attached in the notebook and their interpretation recorded.

During or after the experiment (as appropriate):

8. Your interpretation of results and a discussion that explains the results.
9. A conclusion.

You should prepare your notebook record in such a way that someone not only can repeat your work but also can repeat it with more understanding than if only the lab text were available. In other words the notebook record should allow someone else to benefit from the fact that you did the experiment.