

CHEMISTRY 345 – Section 2 – Spring 2017

MWF 09.55 – 10.45 AM, Room 1351 Chemistry

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Open Office: Wednesdays 1–2 PM

Website: Learn@UW/Piazza and Facebook (Chem 345 Magauer)

Teaching Assistants: Ryan Scamp, Minxue Huang, Josh Corbin, and Bao Li

1. Introduction

Chemistry 345 is the second semester of a two-semester organic chemistry sequence. The first course in the sequence is Chem 343. Successful completion of 343 or its equivalent with a grade of C or higher is a prerequisite for enrollment in 345. The lab course associated with the sequence is Chem 344, which may be taken concurrently with 345 or in a subsequent semester. Because of the cumulative nature of the organic chemistry sequence, you must be comfortable with all of the material covered in Chem 343. If you are not, I would strongly suggest that you seek help through the Chemistry Learning Center, on-line tutorials or a private tutor. I cannot help you catch up on material you missed from Chem 343, as much as I would like to. There is simply too much to cover in Chem 345.

2. Course Materials

Textbook

Required: Organic Chemistry (6th ed), M. Loudon, Jim Parise, ISBN-13: 978-1-936221-34-9

The book is there to provide alternative explanations/approaches to help you understand the material covered.

Recommended: Solution Manual for Loudon & Parise, Organic Chemistry

Loudon and its solution guide will be available at College and Steenbock libraries.

Other materials

Molecular model kit: Models may be used during quizzes and exams and are helpful to understanding the 3-D structure of organic compounds

Course websites

This course makes extensive use of Learn@UW. Lecture notes, handouts, quizzes, reading assignments, and announcements will be posted to the course website regularly. You will also use

Learn@UW to view your grades. I encourage you to post your scientific questions to Piazza or use the Chem 345 Facebook page (see below).

3. Lecture and Discussion

Preparation

Chem 345 will cover Louden Ch 12–13 and 16–28. Ch 1–11 and 14–15 were covered in Chem 343. Because the organic chemistry sequence is cumulative, you must be comfortable with all of the material covered in Chem 343 to do well in Chem 345.

Lecture

Attendance is crucial for success in this course. There are 350 students in this course and even an 80% attendance rate means I could end up repeating myself 70 times, which I guarantee I don't have the time to do. Lectures will highlight important concepts, provide specific examples, and help you understand broad themes of chemical reactivity. The best approach is to read the material prior to lecture and then use lecture to clarify issues and “connect the dots” so to speak. The lecture notes posted to Learn@UW are meant to supplement the notes that you take during regular attendance; they are not comprehensive and won't replace the lecture itself.

Discussion sections

Attendance and participation in discussion sections are required. The main purpose of the discussion is to get guided practice working problems (quizzes). To get the most out of section, come prepared with specific questions. These TA-led sessions are mandatory. Teaching assistants will review materials, answer and there will be weekly quizzes (70 points). Grading will be explained by the TA.

Reading

Reading assignments will be posted to the front page of the Learn@UW course site. The textbook provides more detailed information than the lecture can cover; all information covered in the assigned reading is fair game for exams.

4. ASSIGNMENTS AND GRADING

Examinations

There will be three midterm exams (200 points each, which will be given during the normal lecture period. Please note that makeup exams will not be given. The final exam is currently scheduled for Tuesday, May 9, 2:45 PM – 4:45 PM. The final will be cumulative and be worth 300 points.

Quizzes

There will be 14 total weekly quizzes given at the beginning of each discussion section. Each quiz will be worth 5 points towards a possible maximum of 70 points for the semester.

Homework

Suggested problems from Louden will also be posted to Learn@UW at the beginning of each chapter. These will not be collected or graded, but they are an invaluable source of practice problems.

Re-grade requests

Errors in exam grading are rare but, unfortunately, unavoidable in a class of our size. Requests for re-grading must be accompanied by a re-grade request form (available on Learn@UW). These are due to Thomas Magauer the day of the lecture after the exam is handed back. Do not write on your exams. Submitting a modified exam for re-grading is a serious breach of academic integrity. Do not under any circumstance change an answer and submit it for a regrade. This is academic misconduct and will be dealt with harshly.

Grades

A maximum of 970 points can be earned during the semester. Your final score will be computed using the following formulae, depending on which results in the highest numerical value:

Exam 1	200			Top 2 midterm exam scores	
Exam 2	200				
Exam 3	200				400
Quizzes	70			Quizzes	70
Final Exam	300			Final Exam	500
TOTAL	970			TOTAL	970

Letter grades are not assigned until the end of the course, and will be assigned according to a historical distribution curved around a low B average (2.75). There is no fair way to offer additional “extra credit” assignments at the end of the semester without unfairly disadvantaging everyone else in the course, so my policy is not to offer them at all. The number of points you have accumulated through your work during the semester will be the only factor in determining your final grade.

Students with disabilities

Accommodations recommended by the McBurney center are gladly made. Please contact Thomas Magauer as early in the semester as possible to ensure sufficient time for appropriate arrangements to be made.

5. Academic Misconduct

Scientific fields, including engineering and the health professions, cannot function without the strictest standards of personal integrity from their practitioners. My expectations for your academic integrity in Chem 345 are high, consistent with the high standards of professional ethics you will be

held to throughout your careers. Chem 345 is a challenging course that will require hard work from everyone involved. Academic misconduct is unfair to your classmates, it demeans the effort you are investing in this class, and it undermines the trust that you will be asking people to place in you throughout your career. If you observe instances of academic misconduct, you should report them to me or to the TAs. We will take every precaution to protect your anonymity. Please be aware of UWS 14 Policies regarding academic misconduct. If the teaching staff and I determine that you have cheated in Chem 345, you will receive an F for the semester, and your case will be recommended to the Dean of Students for further sanction. Cheat sheets, notes, textbooks, someone else's paper, iPods, cell phones, etc... are prohibited from the exam. Use of these prohibited materials during an exam will result in a zero for the exam score. You will only be allowed pens and model kits for the exam. There are no acceptable excuses for academic misconduct!

6. Class Conduct, Communication, and Etiquette

Chem 345 is, unfortunately, one of the largest lecture courses that Wisconsin offers. In order to keep the semester from becoming chaotic, I'd like to ask you to work with me to keep the class running smoothly:

1. I get a lot of emails more often than I'd like. Therefore, I would like you to post your scientific questions to Piazza (https://piazza.com/wisc/spring2017/chem345_002_sp17/home) or the Chem 345 Facebook page (Chem 345 Magauer). Both systems are highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com. Chances are, if I did a poor job explaining something, one of your classmates will have the same question as you, and it will keep me from having to answer the same question 350 times. Feel free to email me if you have questions about the logistics of the class, if you have concerns about your grades, or if you'd like to set up a meeting.
2. Please minimize chatter in the classroom. You should feel free to ask me questions during lecture, but please don't distract the people around you.
3. Laptops and cell phones may not be used during lecture. You can't take organic chemistry notes on a computer, and texting or emailing during class is distracting to you, to me, and to people seated around you.
4. If you feel like you're falling behind, don't feel shy about asking for help. There are a lot of resources available to help you succeed in Chem 345. But in a class of this size, it's hard for

the teaching staff to identify you if you're struggling with the material. Get help early if you need it.

5. Letters of recommendation that come from a large lecture class, by necessity, lack detail. I can write about the content of the class, your grade and rank compared to your classmates, and the efforts UW–Madison makes to combat "grade inflation." But I will never be able to write a letter as informative as one from an instructor from a smaller course. I will normally provide recommendation letters only for students who have received an A or AB in the class.

7. Strategies for Success in Chem 345

1. **Practice, practice, practice.** This is the most important key to success in this course. It's a truism among endurance athletes that you train for the event that you're racing. That is, you can't train for a marathon without running, and you'll never win a bike race if you don't ever climb on the bike. The same is true of your classes. In this course, the exams that make up the majority of the points you earn ask you to solve problems. Therefore, you should train for exams by working problems, and the more problems you do the better off you are. This is why I ask you to do so many suggested problems from the book problems between the quizzes. Louden is a great textbook, and one of the reasons we selected it is the quality of the problems at the end of each chapter. Recopy your class notes within 24 hours of the lecture. Many important facts slip by before you can record them, but remain in your short-term memory. Recopying gives you the opportunity to set down the full story, and cements your grasp of the points made in the lecture.
2. **Don't fall behind!** This class asks you to absorb a lot of information at a rapid pace, and each successive chapter builds upon principles in the previous chapters. Cramming just doesn't work in this class. Instead, you should set aside a little time every day (30 minutes or so) to study and keep caught up.
3. **Read the book.** Each unit has more information than I can reasonably cover in the lecture. The textbook is your primary source of information, and any information in the assigned reading is fair game for exams. I recommend reading the chapter *before* the corresponding lectures, so that you can follow the key points in the lecture. Work the in-text problems as you go.
4. **Come to lecture.** The purpose of lecture is to highlight the most important material in each unit, to help you organize the information in a way that's logical and easier to remember, and to show how certain important themes run throughout the entire course. From a completely GPA-centric point of view, it makes sense to come to lecture because it helps

identify what I think is most important to know, which is likely also to be what I focus on when writing exams.

5. **Study in groups.** Studying with your friends makes studying seem less like a chore and more like a social occasion, and it'll help you keep up with the class. It's also a great way to identify the material that's the trickiest to grasp, so that you can ask better questions during lectures and office hours.
6. **Take good notes and copy them over.** The key to managing all of the information we cover in class is to organize it well in your head. The book presents the material in a way that makes sense to the author; I'll present it in a way that makes sense to me. But your brain is likely to work in a different way. It's a good idea to take notes on your reading, take notes in lecture, and re-organize them into a master set of notes that works for you.

8. Tentative Agenda

Week	Date	Chapter	Topic	Quizzes
1	Jan 18 Jan 20	Intro/Ch 12 Ch 12	Syllabus, Class policies, etc. and IR Spectroscopy IR Spectroscopy	Quiz #1
2	Jan 23 Jan 25 Jan 27	Ch 13 Ch 13 Ch 13	NMR Spectroscopy NMR Spectroscopy NMR Spectroscopy	Quiz #2
3	Jan 30 Feb 1 Feb 3	Ch 13 Ch 16 Ch 16	NMR Spectroscopy Electrophilic Aromatic Substitution Electrophilic Aromatic Substitution	Quiz #3
4	Feb 6 Feb 8 Feb 10	Ch 16 Ch 17 Ch 17	Electrophilic Aromatic Substitution Allylic and Benzylic Reactivity Allylic and Benzylic Reactivity	Quiz #4
5	Feb 13 Feb 15 Feb 17	Ch 18 Ch 18 Midterm Exam 1	Aryl and Vinyl Halides Aryl and Vinyl Halides In Lecture (Ch 12, 13, 16, 17,18)	Quiz #5
6	Feb 20 Feb 22 Feb 24	Ch 19 Ch 19 Ch 19	Aldehydes and Ketones Aldehydes and Ketones Aldehydes and Ketones	Quiz #6
7	Feb 27 Mar 1 Mar 3	Ch 19 Ch 20 Ch 20	Aldehydes and Ketones Carboxylic Acids Carboxylic Acids	Quiz #7
8	Mar 6 Mar 8 Mar 10	Ch 21 Ch 21 Ch 21	Carboxylic Acid Derivatives Carboxylic Acid Derivatives Carboxylic Acid Derivatives	Quiz #8
9	Mar 13 Mar 15 Mar 17	Ch 22 Ch 22 Midterm Exam 2	Enols & Enolates Enols & Enolates In Lecture (Ch 19, 20, 21, 22)	Quiz #9
10	Mar 20 Mar 22 Mar 24	Spring Recess - No Lecture		
10	Mar 27 Mar 29 Mar 31	Ch 22 Ch 23 Ch 23	Enols & Enolates Enols & Enolates Amines	Quiz #10
11	Apr 3 Apr 5 Apr 7	Ch 23 Ch 23 Ch 28	Amines Amines Pericyclic Reactions	Quiz #11
12	Apr 10 Apr 12 Apr 14	Ch 28 Ch 28 Ch 28	Pericyclic Reactions Pericyclic Reactions Pericyclic Reactions	Quiz #12
13	Apr 17 Apr 19 Apr 21	Midterm Exam 3 Ch 26 Ch 26	In Lecture (Ch 22, 23, 28) Aromatic Heterocycles Aromatic Heterocycles	Quiz #13
14	Apr 24 Apr 26 Apr 28	Ch 24 Ch 24 Ch 24	Carbohydrates Carbohydrates Carbohydrates	Quiz #14
15	May 1 May 3 May 5	Special Topic Final Review Study Day	Special Topic Final Review LAST LECTURE Study Day	
16	May 9	FINAL EXAM	FINAL EXAM (2:45 - 4 :45 PM)	