

## Chem 343

Instructor: Dr. Jia Zhou  
Office: Rm 2132, Chemistry  
Office Phone: 608-890-0794  
email: [jia.zhou@wisc.edu](mailto:jia.zhou@wisc.edu)

Note: Piazza is an online resource being used this semester to answer content questions in as efficient a manner as possible. Please feel free to utilize this resource in addition to going to office hours.

## Recommended and Required Course Materials

### Required:

Organic Chemistry 6th (or 5th) edition by Marc Loudon

### Recommended:

Solution Manual Organic Chemistry 6th (or 5th) edition

Molecular Model Kit

Several model kits are available online, at the UW Bookstore, and from AXΣ in the Mills Street Atrium of the Chemistry Building. It is not important which model kit you acquire, none of them are perfect and all are helpful.

ChemDraw ([ChemDraw 15 Download Instructions](#))

As a UW student, you get ChemDraw for free! This is pretty awesome! I highly recommend downloading the software and using it. It is the same software that we use to draw all of the molecules for your problem sets, quizzes, and exams.

(For those of you that are using the 5th edition of Loudon, you can consult the [Conversion table for textbook problems between 5th and 6th edition](#))

## Teaching and Learning Philosophy

It will require a great deal of focus and effort to achieve understanding and mastery in organic chemistry. Improvements in the following areas will make that journey easier.

**1) Time management and dedication** - In the first and second semesters of organic chemistry, each concept and chapter builds upon the previous ones. You cannot afford to fall behind; it is very difficult to recover. That's why you must find a way to work at a consistently intense level for the entirety of the course.

**2) Learning for Mastery** - One of the best things you can do for yourself is to continually push your mind to understand the underlying concepts. You should continually check to make sure that you can answer all assigned course questions, explain the underlying concepts in writing and verbally, and to identify any areas where you have not mastered the course content.

**3) Self-motivation** - You are responsible for your own learning and your own motivation. In order to put in the time and dedication necessary to achieve mastery of the course content, you will have to be very motivated. Neither I nor your TA can motivate you. Motivation must come from within!

Studying and working on problem sets together with your classmates can help with all the above points.

## **Where the Learnin' Happens**

**All of these are important for your success. Do not overlook any of them.**

### **Lecture / Lecture Videos**

The purpose of a lecture, or a lecture video, is to provide a conceptual framework for you to understand the course material. Key concepts and examples will be highlighted. While many details will be discussed, the focus will be on the main concepts and how the current material connects to what you already know and what you will learn. They will only build the foundation of learning

The notes of each lecture will be posted, most likely at the end of the day. Prerecorded lecture videos and notes from Fall 2015 are already posted. You can utilize them at anytime.

### **Discussion Meetings**

The discussion sections with your TA are a critical part of your learning process, and serve to deepen your understanding of the course material. You will have a chance to talk to your TA and classmates about problem solving strategies, difficult course concepts, and common misconceptions. Each session will always involve group work of some form or another. You will not and should not be passively listening to your TA talk about chemistry. Furthermore, your TAs are highly successful organic chemists. This means that they can point out common issues that students struggle with and help you avoid them. They can provide you with learning insights that worked for them and they can help you interpret the textbook and lecture materials in a fairly sophisticated manner. Get the most out of each discussion by showing up ready to work and ready to discuss the week's material.

### **Textbook Reading**

Reading the textbook will help you understand the course material in more detail and depth. Loudon's organic textbook (5th or 6th edition) is a great book chosen for its clear explanation and great practice problems. I recommend reading each chapter before or after each lecture, depending on your preference. A thorough reading of the textbook on any topic you are struggling with is critical. The explanations and examples provide more depth and breadth to the course material than I can provide in lecture and should not be over-looked as a valuable tool. I highly recommend working the in-text problems as you go.

### **Quizzes/Exams**

The quizzes and exams are not just evaluation tools. These assessments (including the practice ones from previous terms) are teaching tools. They will give you the opportunity to clarify what you do and do not know. Use them to identify weak areas in your knowledge that you can address.

## **Office Hours**

There are two to three lecturer office hours per week. The organic TAs hold office hours twice a week in B317, which is staffed all day with one of the TAs. You are encouraged to attend as often as you need and see any TA. Set an expectation for yourself to come to each meeting with an instructor with a list of questions and clearly identified problems that they can help solving. Make use of these office hours!

## **Email / Piazza**

In order to bring your email to my attention, please include "Chem 343" in the subject line of all emails you send me. Email should be limited to concerns about grades, requests for alternate office hours, or any non-content related course questions.

Content questions should be directed to Piazza. Content questions received via email by either the TAs or myself will be directed to Piazza. Piazza is a great online resource where you can post questions, post answers to other students' questions, and receive answers to your questions from the TAs and myself. Please remember to be very clear when wording your questions on Piazza. Pictures of structures from ChemDraw are very helpful. Chemdraw is a high-quality chemistry drawing program that you can download for free (see link) and it will allow you to draw structures to accompany your questions. Pictures or scanned images are also okay on Piazza, but you will likely find [Chemdraw](#) easy to use to make high-quality organic chemistry drawings.

Piazza can be accessed from within Learn@UW by the link shown below.

## **Problem Sets, Textbook Practice Problems, Previous Quizzes/Exams**

The only way to make sure you are learning at the right depth and pace is to complete the practice problems available. If you cannot transfer what you know to new molecules or new structures, it identifies a gap in your knowledge and understanding. Answer keys are provided to the problem sets and textbook, use these to check your learning. Answer keys are intentionally not provided to some of the previous quizzes/exams. This is done to encourage you to talk to your classmates and instructors about any answers that you are unsure of and to work through problems that you cannot simply look up the answer to and shortcut the thinking/learning process.

## **Classmates**

Nothing is better at revealing your misconceptions and misunderstandings than trying to explain something in words. If you are working with one or more classmates on a regular basis, all of you will benefit from the experience. Helping others through material is a great way to take your own learning of a concept from superficial to mastery.

## **Chemistry 343 Grading**

There are 550 points available in this course. No exams or quizzes will be dropped; you must take them all at the scheduled time unless you have a university course conflict. All points have equal value. The final letter grade based upon 550 course points will reflect the historic averages of Chem 343 with a course GPA near 2.74.

25 pts. Quiz 1 Discussion

**75 pts. Exam 1**

25 pts. Quiz 2 Discussion

**100 pts. Exam 2**

25 pts. Quiz 3 Discussion

**100 pts. Exam 3**

**200 pts. Final Exam**

***There are NO planned makeup quizzes or exams. You must attend your discussion section on the dates of the quizzes/exams.***

### **Grading Philosophy**

Grades are important to you, to me, and to the university. Thus, **grade assignments must reflect achievement and learning**. How that is measured and what achievement looks like are issues that are up for debate and are subject-dependent. I consider the exams and quizzes in this course to be reasonable markers of achievement and learning. Certainly, there are better/alternate methods for assessing student learning, though none of which seem overly practical in a course that serves 200 - 350 students per class. The final exam counts for 200 of 550 course points. This favors students who have improved in their understanding and preparation as the course progresses. I endeavor to write exams that challenge students at all levels of learning and provide a wide grade distribution. I will always try to separate those that are trying to memorize patterns or use mnemonic devices from those who understand the content in terms of reactivity, structures, molecular orbitals, pKa's, etc.

I will likely get a lot of emails about grades, many of them suggesting that a better grade is desired. Grading in my Chem 343 is not about any of the following and they are not considered as rationale for wanting/deserving a better grade than what you have earned:

1. *Effort/Hard work*
2. *Attitude toward organic chemistry*
3. *Attendance of office hours, lecture, or discussion*
4. *How much your TA or I like/dislike you*
5. *Needing a better grade for {insert school type here} school admissions*
6. *Wanting to take a course for which Chem 343 are prerequisites*

Your grade is determined relative to the class mean in units of standard deviation. This allows me to attempt to write the best exam that I possibly can that advances learning, probes misconceptions, and highlights areas of deficiency. This is an imperfect approach, but far more instructive than simply looking at raw scores or % scores without considering the mean and standard deviation. In order to do this, simply use the formula below and apply an actual (simple) curve.

**normalized score = (your score - average score)/(standard deviation)**

If your score is +1, you rocked that assessment! If your score is near zero, you have achieved an average grade on that assignment (~ **B** in Chem 343). If you have a score of -1, your achievement is not where it needs to be. To put this in terms that might fit better your expectation of **A/AB/B/BC/C/D/F**, see the rough breakdown below. This shows the grade breakdown in pretty colors from a previous chemistry 343 term. The numbers in parenthesis are the normalized grade breaks.

There are two instances for which I will deviate from the typical grading formula and the historic GPA.

1) **A truly exceptional lecture section** This is likely to be a very rare occurrence. But if the TAs and I do a remarkable job of teaching and all of you do an amazing job of learning and somehow students exceed our expectations based upon past experience, we'll shift the grades up a bit.

2) **An exceptional student performance** This is a more frequent occurrence (1 to 2% of students per term). If a student demonstrates that their raw score does not reflect their achievement, I will occasionally raise the student's grade by 1/2 a letter grade to acknowledge that achievement. This typically occurs when a student is not academically well-prepared for organic and struggles on exams 1 and 2, but shows a high amount of growth and achieves mastery in the second half of the course. Here's what I look for:

- a positive trend in exam performance (a positive slope of ~ 0.4 std dev/exam throughout the course)

or

- a A for anyone scoring over 90% on the final (This has happened exactly once for a student not already getting an A, but I'm waiting and cheering for it to happen again!)

## **Changing Lecture/Discussion Enrollment**

You must be enrolled in the discussion you attend. If you would like to change your enrollment it will be challenging due to the high enrollment and lack of additional space in Chem 343.

If you do wish to change sections, Laboratory Director Dr. Nick Hill can advise you. He handles enrollment issues for the organic division. Below is the information he requests along with any emails he receives regarding enrollment. It might be that the swap you request is not possible, but he will do his best to help facilitate the change.

To: Dr. Nick Hill ([hill@chem.wisc.edu](mailto:hill@chem.wisc.edu))

Required Info:

- 1) Your current lecture and discussion session (provide the 3XX number, not the day/time).
- 2) The discussion session that you want (provide the 3XX number).
- 3) Your student ID number.
- 4) Reason for needing to switch.

## **Exam Accommodations & Conflicts**

### **McBurney VISA Accommodations**

If you need accommodations for lecture, quizzes, and/or exams regarding a VISA obtained from the McBurney Disability Resource Center, please provide us a copy of your VISA as soon as possible. Please send an email to your discussion TA and myself with your VISA attached as a pdf with the subject line "[Chem 343] McBurney VISA accommodations." We will make arrangements with you, most likely using the undergraduate chemistry office to assist with exam/quiz accommodations.

### **Exam Conflicts**

If you have a conflict with a regularly scheduled university course or exam for other university course, we will do our best to provide you with an alternate exam time. For each exam, however, it must be taken on the day that is scheduled for that exam. Please see the course schedule for all exam dates. About two weeks prior to the first exam, we will contact you requesting information about any exam conflicts. We will contact you for conflicts with future exams about two weeks prior to each of those exams as well. Please do not email us before we request the information, but please do respond promptly when the request email is sent.

### **Academic Misconduct**

**Folks, please don't cheat. Cheating is bad; cheating is sad.**

Dealing with academic misconduct is the most painful/sad/annoying part of my job. Historically in Chem 343/345, penalties have ranged from a zero on the related-work and a letter on file with the Dean of Students office to failure/removal from the course with larger UW Dean's office penalties. Out of respect, for yourselves, each other, and your instructors, please behave in an appropriate manner with regards to all of the assessments.

[UW Dean of Students Office - Academic Integrity](#)

The two common forms of academic misconduct in this course are related to re-grades and sharing information about quizzes/exams. Here are some general thoughts and suggestions on the topic... (no particular organization or forethought)

- 1) *Do not talk to people about the quiz if they have not taken the quiz.*
- 2) *Do not turn in work or thoughts that are not your own.*
- 3) *Looking at someone else's exam, or notes you brought in, or whatever, is bad, very bad.*
- 4) *If it feels like you might be doing something icky and dishonest, you may well be. Try doing something else instead.*
- 5) *Do not change your answers on your exam and ask for a re-grade. I might be stupid... but I'm not that stupid.*
- 6) *When you come to an exam or quiz, sit far enough away from anyone else and in a posture that no proctor can think you are cheating. Make sure all of your stuff is in airplane mode, like your phones, computers, purses, backpacks, etc... If all your stuff is put away, shut down, zipped up, and not connected to the internet, no one can think you're trying to cheat.*
- 7) *In the words of one of your classmates from a previous semester about sharing exam related information, "It wouldn't be moral and since this class is curved, revealing knowledge of the exam wouldn't be beneficial to my grade either."*
- 8) *Cheating to gain a few points is not worth the possible repercussions. I'm sure of it. I've checked.*

### Course Schedule – Chemistry 343 Lecture 3

<b>Monday</b>	<b>Wednesday</b>	<b>Friday</b>	<b>Discussion</b>
<b>Sept 5</b> Labor Day	<b>Sept 7</b> Chapter 1 Bonding and Structure 1.1 – 1.3	<b>Sept 9</b> Chapter 1 Bonding and Structure 1.4 – 1.7	Discussion Activity 1
<b>Sept 12</b> Chapter 1 /2 Bonding and Alkanes 1.8 – 1.9, 2.1, 2.2 2.7 – 2.9	<b>Sept 14*</b> Chapter 2 Alkanes 2.3 – 2.6	<b>Sept 16</b> Chapter 3 Acids and Bases 3.1 – 3.3	Discussion Activity 2 Quiz 1 (Ch 1-2)
<b>Sept 19</b> Chapter 3 Acids and Bases 3.4 – 3.5	<b>Sept 21</b> Chapter 3 Acids and Bases 3.6	<b>Sept 23</b> Chapter 4 Alkenes 4.1 – 4.5	Discussion Activity 3 Quiz 1 (Ch 1-2)
<b>Sept 26</b> Chapter 4 Alkenes 4.6 – 4.8	<b>Sept 28</b> Chapter 4 Alkenes 4.9	<b>Sept 30**</b> Chapter 5 Addition Reactions of Alkenes 5.1 – 5.3	Exam Review 1 Discussion Activity 4
<b>Oct 3</b> Review for Exam 1 Exam 1 5:45 – 7:15 pm	<b>Oct 5</b> Chapter 5 Addition Reactions of Alkenes 5.4 – 5.5	<b>Oct 7</b> Chapter 5 Addition Reactions of Alkenes 5.6 – 5.8	Discussion Activity 5
<b>Oct 10</b> Chapter 6 Stereochemistry 6.1 – 6.3	<b>Oct 12</b> Chapter 6 Stereochemistry 6.4 – 6.10	<b>Oct 14</b> Chapter 6 Stereochemistry 7.7 – 7.8	Discussion Activity 6
<b>Oct 17</b> Chapter 7 Cyclic Compounds and Stereochemistry of Reactions 7.1, 7.5	<b>Oct 19</b> Chapter 7 Cyclic Compounds and Stereochemistry of Reactions 7.2 – 7.4	<b>Oct 21</b> Chapter 7 Cyclic Compounds and Stereochemistry of Reactions 7.6	Discussion Activity 7 Quiz 2 (Ch 5 – 6)

**Oct 24**  
Chapter 8  
Alkyl Halides, Alcohols,  
Ethers, Thiols, and  
Sulfides  
8.1 – 8.5

**Oct 26**  
Chapter 8  
Alkyl Halides, Alcohols,  
Ethers, Thiols, and  
Sulfides  
8.6 – 8.8

**Oct 28**  
Chapter 9  
Chemistry of Alkyl  
Halides  
9.1 – 9.4

Exam Review 2  
Discussion Activity 8

**Oct 31**  
Review for Exam 2  
**Exam 2 5:45 – 7:15 pm**

**Nov 2**  
Chapter 9  
Chemistry of Alkyl  
Halides  
9.4

**Nov 4†**  
Chapter 9  
Chemistry of Alkyl  
Halides  
9.5

Discussion Activity 9

**Nov 7**  
Chapter 9  
Chemistry of Alkyl  
Halides  
9.6 – 9.8

**Nov 9**  
Chapter 10  
Chemistry of Alcohols  
and Thiols  
9.9, 10.1 – 10.3

**Nov 11**  
Chapter 10  
Chemistry of Alcohols  
and Thiols  
10.4 – 10.5

Discussion Activity 10

**Nov 14**  
Chapter 10  
Chemistry of Alcohols  
and Thiols  
10.6 – 10.13

**Nov 16**  
Chapter 11  
Chemistry of Ethers,  
Epoxides, Glycols, and  
Sulfides  
11.1 – 11.3

**Nov 18**  
Chapter 11  
Chemistry of Ethers,  
Epoxides, Glycols, and  
Sulfides  
11.4 – 11.5

Discussion Activity 11  
Quiz 3 (Ch 9 – 10)

**Nov 21**  
Chapter 11  
Chemistry of Ethers,  
Epoxides, Glycols, and  
Sulfides  
11.6 – 11.11

**Nov 23**  
Chapter 14  
Chemistry of Alkynes  
14.1, 14.2, 14.4

**Nov 25**  
Thanksgiving Break

Discussion Activity 12

**Nov 28**  
Chapter 14  
Chemistry of Alkynes  
14.3, 14.5, 14.6

**Nov 30**  
Chapter 14  
Chemistry of Alkynes  
14.7 – 14.10

**Dec 2**  
Chapter 15  
Dienes, Resonance, and  
Aromaticity  
15.1 – 15.4

Exam Review 3  
Discussion Activity 13

**Dec 5**  
Review for Exam 3  
**Exam 3 5:45 – 7:15 pm**

**Dec 7**  
Chapter 1-15  
Semester Review

**Dec 9**  
Chapter 15  
Dienes, Resonance, and  
Aromaticity  
15.5 – 15.7

Exam Review 4  
Discussion Activity 14

**Dec 12**  
Chapter 15  
Dienes, Resonance, and  
Aromaticity  
**15.8**

**Dec 14**  
Q &A Review for Final  
Exam

**Final Exam Time and Location TBD**

\* Last day to drop courses or withdraw without notation on transcript.

\*\*Last Day for 50% tuition adjustment on dropped classes.

†Last Day to Drop courses.

	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>Section</b>	304, 305, 308 309, 310, 321 322, 323, 324	301, 302, 303 306, 307, 311 312, 325, 326 327, 328	341, 342, 343	344, 345, 346 347	348
<b>Quiz 1</b>	<i>9-19-2016</i>	<i>9-20-2016</i>	<i>9-21-2016</i>	<i>9-15-2016</i>	<i>9-16-2016</i>
<b>Quiz 2</b>	<i>10-17-2016</i>	<i>10-18-2016</i>	<i>10-19-2016</i>	<i>10-20-2016</i>	<i>10-21-2016</i>
<b>Quiz 3</b>	<i>11-14-2016</i>	<i>11-15-2016</i>	<i>11-16-2016</i>	<i>11-17-2016</i>	<i>11-18-2016</i>

**Course schedule is subject to change.**