

## **CHEM 343: Introductory Organic Chemistry**

3 Credits

MWF 11:00-11:50 1361 CHEM + Discussion

### **Instructor Contact Information:**

Dr. Aaron McCoy

Office Hours: Mondays 12:00-1:00

608-890-0794

Wednesdays 1:00-3:00

Office: 2132 CHEM

or by appointment

amccoy@chem.wisc.edu

### **Teaching Assistants:**

Evan Sherbrook      sherbrook@wisc.edu

Office Hours:      Monday 8:50-10:45 am

Lin Hui Chang      lchang34@wisc.edu

Office Hours:      Friday 8:50-10:45 am

All TA office hours are held in the Organic TA office (B317). You may see **any** TA on duty- you are not limited to your TA. The full TA schedule is posted outside the TA office and on Learn@UW. All of the TAs are graduate students with years of experience teaching or studying Organic Chemistry and all are more than capable of assisting you with CHEM 343 questions.

### **Piazza:**

While email is very useful for communication, and office hours are great for questions, with ~250 students there never seems to be enough time. To make things easier for me and the TAs, and I believe much more useful to you, please limit email communications to personal and logistical questions. All content questions should 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 (all anonymous to other students unless you choose otherwise). Effectively this means everyone can benefit by seeing other students' question as well as instructor (and student) answers. Piazza can be accessed from within Learn@UW under the communication drop down menu. You may also download and use the free Piazza app.

### Discussion Sections

<b>Section</b>	<b>Day</b>	<b>Time</b>	<b>Room</b>	<b>TA</b>
<a href="#">DIS 321</a>	Mon	12:05-12:55PM	B357	Lin Hui Chang
<a href="#">DIS 322</a>	Mon	2:25-3:15PM	B357	Lin Hui Chang
<a href="#">DIS 323</a>	Mon	2:25-3:15PM	B379	Evan Sherbrook
<a href="#">DIS 324</a>	Mon	3:30-4:20PM	B379	Evan Sherbrook
<a href="#">DIS 325</a>	Tues	11:00-11:50AM	2373	Evan Sherbrook
<a href="#">DIS 326</a>	Tues	9:55-10:45AM	B357	Evan Sherbrook
<a href="#">DIS 327</a>	Tues	2:25-3:15PM	2311	Lin Hui Chang
<a href="#">DIS 328</a>	Tues	3:30-4:20PM	2311	Lin Hui Chang

### Required Materials:

Organic Chemistry 6th edition by Marc Loudon

(The chemistry department switched to the 6<sup>th</sup> edition this term. This is an excellent textbook, and it will be used in CHEM 343, 344, and 345. I highly recommend you purchase this version. I will make references to chapters, page numbers, figures, tables, and problems from this addition throughout the course. While the previous edition is very similar, if you use a previous edition, you will be responsible for “translating.”

### Recommended Materials:

Solution Manual Organic Chemistry 6th 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. (There are several examples in the TA office if you'd like to preview before buying.)

ChemDraw—As a UW student, you have access to download and use ChemDraw for free! (<http://comphelp.chem.wisc.edu/content/downloading-chemdraw-14>) This is the same software that we use to draw all of the molecules for your problem sets, quizzes, and exams. Feel free to download the software and use it whenever you are posting structures to piazza.

Sampling Online Homework—Course and textbook specific online homework from Sapling Learning will be available as an additional resource for students. This is not required and there are no points associated with its use, but students are encouraged to use it as an additional learning tool. Single semester access can be purchased on the Sapling website for approx. \$36 or you may purchase 2 semester access at a discounted price (some instructors do require Sapling access in CHEM 345). See post on Learn@UW for more details.

### **How to do well in this course:**

Chemistry is hard. Organic chemistry is very different from general chemistry (a lot less math, and a lot more structures). Many people compare organic chemistry to a foreign language—it feels like you are memorizing a lot of “vocabulary,” but to truly do well you have to fully immerse yourself in the content in order to become “fluent,” not just memorize. The course moves very fast, and everything is cumulative, so you need to stay on top of things. Some of you are taking this course because you like chemistry. For others it is required for your major. In either case my hope is that when you are done with this course you will not only have a deep understanding of and appreciation for organic chemistry, but you will have also deeply expanded your critical thinking and problem solving skills.

Attend lecture. That really is the first step towards success. I will post lecture notes on Learn@UW, but those are hardly a substitute for being present. Lectures are designed to present key concepts and examples and outline the breadth and scope of the material. I can hardly talk about every detail in such a limited time, so lectures need to be supplemented by the textbook as well as all the options below. You’ll quickly see that the focus is on practice. You need to practice applying the material in order to truly understand the material.

Problem sets will be provided to line up with each textbook chapter. At the top of each problem set there will be a list of textbook sections to focus on. Occasionally I will hit some sections out of order and this is where I will detail exactly where you can read more about each topic. There will also be a list of recommended problems to work through- answers available in the recommended Loudon course supplement. The bulk of the problem sets is then problems. These are written by me using similar language as I will use on exams. These are designed to focus your studying and apply lecture and textbook material in new and challenging ways. They will hit major topics and common misconceptions related to all material. The problem sets, just like exams, are cumulative, so content is not limited to the current chapter. Answer keys will be provided on Learn@UW.

Discussion sections with your TA are designed to allow guided practice of important problems. This is a critical part of the learning process. Here you get a chance to work with other students to discuss the content, develop problem solving skills, and ask questions. Your TA will be there to guide you, address key points and common misconceptions, and to help fill in the learning gaps. Bring your questions from the problem sets and textbook. The TAs in this course have experience in teaching organic chemistry, through labs, discussion sections, and tutoring. They may have a different way of looking at a topic. As a result, if you do not understand something

from me, you may understand it from them. All discussion sections are held in the chemistry building. Please attend the discussion for which you are registered.

Textbook reading is extremely beneficial to understanding and to course success. Loudon's textbook is excellent in its content and explanations. I recommend reading each chapter before lecture or immediately following, as it will offer deeper explanations than I can ever fit into a 50 min class. See the problem sets for more information on sections emphasized or deemphasized. Yes, it's a big book. Yes, it can take time. But yes, students who read the textbook do better in this course than those who don't. At a bare minimum, working through the textbook problems can provide a tremendous insight into the material.

Office hours are great for asking questions and discussing the material. Take advantage of mine and those of the TAs (remember you can talk to any TA in the organic TA office, B317). Come to office hours prepared with specific questions for the best results. If you cannot make any of the office hours, make use of Piazza to get your questions answered.

Classmates can be quite useful for bettering your understanding. Get to know your fellow students. Set up study sessions with them. Try teaching each other. Nothing reveals your misconceptions and misunderstandings regarding organic chemistry better than trying to explain it to another person.

Other resources:

In addition to the TA's and my office hours, there are a couple of places where you can find assistance. Again, the Organic TA Office is in room B317. There is a schedule posted outside the door of various TAs and when they will be available to help you. Feel free to ask any of them for help even if they are not a TA for Chem 343.

Alpha Chi Sigma Chemistry Fraternity has offered tutoring for chemistry classes in the past. Please contact them about their current help sessions.

GUTS offers tutors as well. They can be contacted at:

Student Activity Center

Office #4413

333 E Campus Mall

E-mail: [guts@rso.wisc.edu](mailto:guts@rso.wisc.edu)

<http://guts.studentorg.wisc.edu/>

The College of Engineering's Undergraduate Learning Center offers drop-in tutoring services for this as well as many other courses. More information can be found on their website- <http://ulc.engr.wisc.edu>.

There are also private tutors available. The General Chemistry Office (Room 1328) has a list of tutors and prices.

## Exams

There are four regular exams plus the final exam. Each regular exam will be worth 100 points. The regular exams will be Wednesday evening exams held from 7:15 to 8:45 pm in a lecture hall to be posted on learn@UW and announced in class. The dates are listed below. Please check your schedules for potential conflicts. Please notify me **ASAP by email** of any conflicts so alternative arrangements can be made. The final exam is worth 200 points and cannot be dropped. Unfortunately, this date is set by the University and I can only grant makeup exams in a VERY limited manner. Please do not ask for a makeup exam due to airline tickets going home for break. I'm afraid that is not listed as a valid reason

<b>100 pts.</b>	<b>Exam 1</b>	Wed Sept 30, 7:15-8:45 PM
<b>100 pts.</b>	<b>Exam 2</b>	Wed Oct 21, 7:15-8:45 PM
<b>100 pts.</b>	<b>Exam 3</b>	Wed Nov 11, 7:15-8:45 PM
<b>100 pts.</b>	<b>Exam 4</b>	Wed Dec 2, 7:15-8:45 PM
<b>200 pts.</b>	<b>Final Exam</b>	Thurs Dec 17, 2:45-4:45 PM

## Exam Penalties

Though technically, the regular exams are worth 100 points apiece and the final exam is worth 200 points, it is possible to score a negative value on the exam. There are two exam penalties that you should be aware of and **AVOID** at all costs. **CONSIDER YOURSELF WARNED.**

**Texas Carbon Penalty (TCP):** If one of your answers has a carbon drawn that has five bonds to it, that is an affront to organic chemistry. Such a blasphemous creation will result in a five point penalty in addition to missing any points on that question.

**Time Penalty:** Writing on the exam before the TA's say start or after time is called can be a five point penalty.

## Exam re-grade policy

Mistakes in exam grading will occasionally be made. You will have **one week after exams are returned** to submit the entire exam for re-grading. Exams are graded by a standard key to be as consistent as possible. Additional credit will only be given when there was a grading mistake, an alternate solution was not considered, or the grading was inconsistent with the key. Keep in mind, since mistakes may or may not be in your favor, the exam grade can actually be lowered. All decisions on the regrades are final. **DO NOT UNDER ANY CIRCUMSTANCES CHANGE AN ANSWER AND SUBMIT IT FOR A REGRADE. THIS IS ACADEMIC MISCONDUCT AND WILL BE DEALT WITH HARSHLY.**

To submit a regrade, fill out the Re-grade Request Form, staple it to the front of your exam, and hand the exam directly to me. You may do this before class, after class, or during office hours. **DO NOT CHANGE ANYTHING ON YOUR EXAM!**

### **Chemistry 343 Grading**

There are 600 total points available in this course. No points will be awarded for the problem sets or attending class. No exams will be dropped. The final letter grades based upon 600 course points will reflect the historic averages of Chem 343 with a course GPA near 2.74.

The course is “curved.” As such there are no set point boundaries. I will be as transparent as possible as to how your score translates to a grade after each exam. The math, however, is actually quite simple. The curve will be determined by the mean and standard deviation, used to calculate the normalized score as shown below.

$$\text{normalized score} = (\text{your score} - \text{average score}) / (\text{standard deviation})$$

If your normalized score is +1, you did awesome! If your score is near zero, you have achieved an average grade on that assignment (~ BC in Chem 343). If you have a score of -1, your achievement is not where it needs to be. A histogram with better grade estimates will be provided after each exam.

There is no extra credit. Your grade won't change based on how much effort you put into the course or how much your TA or I like you (or dislike for that matter). The final exam is intentionally weighted more (at 200 vs 100) to emphasize the cumulative nature of the course, rewarding improvement.

### **Academic Misconduct**

No one wants to deal with academic misconduct, instructors and students alike. However it does continue to occur, so this needs to be addressed. Historically in Chem 343, 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. You can read more about the university policies here: [UW Dean of Students Office - Academic Integrity](http://www.students.wisc.edu/doso/students/) (<http://www.students.wisc.edu/doso/students/>).

These are some of the most common issues for you to avoid.

1) Since it is possible that not all students will take the exam at the same time, it is theoretically possible for some students to receive advance knowledge of an exam. Sharing exam information is not allowed, and both students giving and receiving exam information are both subject to academic misconduct. Additionally, sharing information, giving someone else an artificially higher score, hurts your own score based on the curve.

2) During an exam you are allowed to use your pencil and a molecular model kit—that is all. Use of cell phones, textbooks, answers written on your body, cheat sheets, your neighbor's exam, or anything else is cheating. Use of these prohibited materials during an exam will result in a zero for the exam score, at a minimum. Turn off phone and keep your bag zipped up. Keep your eyes on your own paper. Proctors

will move you during the exam if your eyes are wandering. Your exam will be confiscated if you persist. If a proctors doesn't see it, your neighbor probably will, and they will likely tell me (see grade curve). When you come to the exam, sit far enough away from anyone else and in a posture that no proctor can think you are cheating.

3) Do not change your answers on your exam and ask for a re-grade. A percentage of exams are randomly photocopied. If yours was selected, this is the easiest way to receive an F in the course and be reported to the Dean's office.

**THERE ARE NO ACCEPTABLE EXCUSES FOR ACADEMIC MISCONDUCT. I HAVE CAUGHT SEVERAL STUDENTS AND THEY NOW HAVE A DARK MARK ON THEIR PERMANENT RECORD. I HAVE NO SYMPATHY FOR THOSE THAT CHOOSE TO CHEAT.**





# CHEM 343 Schedule, Fall 2015

Instructor: McCoy

<b>Monday</b>	<b>Wednesday</b>	<b>Friday</b>	<b>Mon/Tues Discussion Topics</b>
	<b>Sept 2</b> Chapter 1 Bonding and Structure	<b>Sept 4</b> Chapter 1 Bonding and Structure	<b>No Discussions</b> Nomenclature PowerPoints on
<b>Sept 7</b> <b>No Class</b> <b>Labor Day</b>	<b>Sept 9</b> Chapter 2 Alkanes	<b>Sept 11</b> Chapter 2 Alkanes	<b>No Discussions</b> Nomenclature PowerPoints on
<b>Sept 14</b> Chapter 2 Alkanes	<b>Sept 16</b> Chapter 6 Stereochemistry	<b>Sept 18</b> Chapter 6 Stereochemistry	Chapters 1,2
<b>Sept 21</b> Chapter 6 Stereochemistry	<b>Sept 23</b> Chapter 3 Acids and Bases	<b>Sept 25</b> Chapter 3 Acids and Bases	Chapter 6
<b>Sept 28</b> Chapter 3 Acids and Bases	<b>Sept 30</b> <b>Exam Review</b> <b>EXAM 1</b> <b>7:15-8:45 PM</b>	<b>Oct 2</b> Chapter 4 Alkenes	Chapter 3, Review
<b>Oct 5</b> Chapter 4 Alkenes	<b>Oct 7</b> Chapter 4 Alkenes	<b>Oct 9</b> Chapter 5 Addition Reactions of Alkenes	Chapter 4
<b>Oct 12</b> Chapter 5 Addition Reactions of Alkenes	<b>Oct 14</b> Chapter 5 Addition Reactions of Alkenes	<b>Oct 16</b> Chapter 7 Cyclic Compounds	Chapter 5
<b>Oct 19</b> Chapter 7 Cyclic Compounds	<b>Oct 21</b> <b>Exam Review</b> <b>EXAM 2</b> <b>7:15-8:45 PM</b>	<b>Oct 23</b> Chapter 8 Noncovalent Intermolecular Interactions	Chapter 7, Review

			<b>Mon/Tues Discussion Topics</b>
<b>Monday Oct 26</b> Chapter 8 Noncovalent Intermolecular Interactions	<b>Wednesday Oct 28</b> Chapter 9 Alkyl Halides	<b>Friday Oct 30**</b> Chapter 9 Alkyl Halides	Chapter 8
<b>Nov 2</b> Chapter 9 Alkyl Halides	<b>Nov 4</b> Chapter 9 Alkyl Halides	<b>Nov 6</b> Chapter 10 Alcohols and Thiols	Chapter 9
<b>Nov 9</b> Chapter 10 Alcohols and Thiols	<b>Nov 11</b> Exam Review EXAM 3 7:15-8:45 PM	<b>Nov 13</b> Chapter 10 Alcohols and Thiols	Chapter 10, Review
<b>Nov 16</b> Chapter 11 Ethers, Epoxides, Glycols, and Sulfides	<b>Nov 18</b> Chapter 11 Ethers, Epoxides, Glycols, and Sulfides	<b>Nov 20</b> Chapter 11 Ethers, Epoxides, Glycols, and Sulfides	Chapter 10, 11
<b>Nov 23</b> Chapter 14 Alkynes	<b>Nov 25</b> Chapter 14 Alkynes	<b>Nov 27</b> No Class Thanksgiving	Chapter 11, 14
<b>Nov 30</b> Chapter 14 Alkynes	<b>Dec 2</b> Exam Review EXAM 4 7:15-8:45 PM	<b>Dec 4</b> Chapter 15 Dienes, Resonance, and Aromaticity	Chapter 14, Review
<b>Dec 7</b> Chapter 15 Dienes, Resonance, and Aromaticity	<b>Dec 9</b> Chapter 15 Dienes, Resonance, and Aromaticity	<b>Dec 11</b> Chapter 15 Dienes, Resonance, and Aromaticity	Chapter 15
<b>Dec 14</b> Exam Review		<b>FINAL EXAM THURS DEC 17 2:45-4:45</b>	Review

Note:

Tentative schedule, subject to change

All exams are cumulative.

See problem sets for specific topics covered

\*Last day to add or drop courses

\*\*Last day to drop course