

University of Wisconsin–Madison
Chemistry 343 Introductory Organic Chemistry, Spring 2018
9:55-10:45 AM, MWF, Room 204 Educ Sci

Course/Learning Objectives:

Students in CHEM 343 will:

Develop an understanding of the structures of organic molecules and how these structures influences their reactivity. Develop an understanding of chirality and the stereochemical differences of organic molecules. Learn the reactivity profiles of simple alkenes, alkanes, alkynes, alcohols, alkyl halides, and ethers. Become familiar with standard organic reagents and solvents used to effect these reactions. Gain a detailed mechanistic understanding of common reactions for alkenes, alkanes, alkynes, alcohols, alkyl halides, and ethers. Gain an understanding of the stereochemical outcomes of these common reactions

Contact Information:

Aubrey Ellison

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(Please include Chem 343 in subject line)

Open Office Hours: Mon. 11:00 AM - 12:00 PM, Wed. 2:00 - 4:00 PM, & Fri. 12:00 - 1:00 PM

(or by appointment)

TA Office Hours: You are encouraged to attend the office hours of any/all of the organic chemistry TAs, which are held in B317 Chem ([Organic Chemistry TA Office Hours Spring 2018](#)). Your discussion TAs are listed below with their office hours.

Sam Krerowicz: Tues. 1:20 - 3:30 PM & Fri. 4:35 - 6:45 PM
krerowicz@wisc.edu

Nicole Thomas: Tues. 11:00 AM - 12:05 PM, Wed. 1:20 - 2:25 PM & Thurs. 11:00 AM - 12:05 PM
ncthomas@wisc.edu

Marie Fiori: Thurs. 8:50 AM - 12:05 PM
fiori2@wisc.edu

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.

General Information:

Official Course Description: Chemistry 343 covers fundamental aspects of organic molecular structure, including stereochemistry, and introduces basic themes in organic reactivity. It is the first semester of a two-semester organic chemistry sequence. Chemistry 345 is the second course in the sequence. Class is for students expecting to take two semesters of organic chemistry.

Requisites: CHEM 104, 109, or 116

Credits: 3

Canvas Course URL: <https://canvas.wisc.edu/courses/76080>

Course Designations: Intermediate level; physical science breadth; counts as L&S credit

Instructional mode: face-to-face

This class meets for three 50-minute class period each week over the spring semester and carries the expectation that students will work on course learning activities (reading, problem sets, studying, etc) for at minimum 2 hours out of classroom for every class period.

Grading Spring 2018:

There are 575 points available in this course. There are three 25 point quizzes, three 100 point exams, and one 200 point final. No points will be awarded for the problem sets or attending class. No exams or quizzes will be dropped; you must take them all at the regularly scheduled time unless you have a university course conflict with the evening exams. All points have equal value. The final letter grades based upon 575 course points will reflect the historic averages of Chem 343 with a course GPA near 2.74.

25 pts. Quiz 1 Discussion - Mon. Feb 12th

100 pts. Exam 1 - Mon. Feb 19th

25 pts. Quiz 2 Discussion - Mon. March 12th

100 pts. Exam 2 - Mon. March 19th

25 pts. Quiz 3 Discussion - Mon. April 16th

100 pts. Exam 3 - Mon. April 23rd

200 pts. Final Exam - Fri. May 11th

There are NO planned makeup quizzes. You must attend class on the dates of the quizzes. For exams which are held in the evenings, if you have a conflict with a regularly scheduled university course, alternate arrangements will be offered. You will be contacted approximately two weeks prior to each exam to coordinate. Please do not email us prior to our course-wide email.

Materials:

Required Material

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

Recommended Materials

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

Molecular Model Kit - Use of molecular models is highly recommended as an aid to understanding organic chemistry and developing spatial reasoning. Practice problems and exams will all be done on paper but to fully understand the reactions you will need to see beyond the 2D and understand the 3D molecular reality. 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. Use of models is allowed during all quizzes and exams.

ChemDraw ([ChemDraw 15 Download Instructions](#)) - As a UW student, you get ChemDraw 15 free. We highly recommend downloading the software and using it whenever you are posting on Piazza. It is the same software that used to draw all of the molecules for your problem sets, quizzes, and exams.

Academic Misconduct:

Those that choose to cheat will be dealt with according to University guidelines for academic misconduct. Historically, penalties for such behavior 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. Information on academic misconduct is available on the website of the Office of the Dean of Students ([UW Dean of Students Office - Academic Integrity](#)). It is your responsibility to understand and be familiar with these guidelines.

Additional Accommodations:

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform me of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. I will work either directly with you or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

Extra notes for success:

Lecture

The purpose of lecture 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 big concepts and how the current material connects to past learning and future expectations. Lectures will help define the depth and breadth of the course and will help you understand the course expectations. You cannot learn everything necessary for success in the course from these lectures alone. Lectures will only build the foundation of learning. Lecture notes will be posted after each lecture. Please be patient; they will be posted as soon as is practical.

Discussion Meetings

The discussion sections with your TA are probably the second most critical as part of your learning process. The discussions play many roles, all of which 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. Discussion provides a great opportunity to talk about the material. Discussion sections will always involve group work of some form or another; you will 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

It is quite difficult for most students to understand the course material at the depth needed for a high-level of success without reading the textbook. Loudon's organic textbook (5th or 6th edition) is a great book chosen for its clear explanation and great practice problems. READ the relevant book chapter and WORK the associated problems BEFORE and THROUGHOUT the corresponding lectures. You will get a lot more out of them! A thorough reading of the textbook on any topic you are struggling with is critical. The explanations and examples provided will be helpful to your mastery of the material. It will 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.

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 know and don't know. Use them to identify weak areas in your knowledge that you can address.

Office Hours

Your TAs and I are highly concerned about your learning. Unfortunately, there are 200+ of you and we can't reach out to each of you individually and make sure that you are having the success that you are looking for. In the past, the most successful students took good advantage of office hours on a weekly basis. [The office hour information for Spring 2018 is posted on top of this page.](#) You are encouraged to attend as often as you need. Set an expectation for yourself to come to each meeting with a list of questions and clearly identified problems that you need help solving.

Email / Piazza

We get a lot of emails, and we lose them in the inbox more often than we'd like. In order to help bring your email to our attention, [please include Chem 343 in the subject line](#) of all emails you send me or the TAs. Email should be limited to logistics, concerns about grades, requests for alternate office hours, or any non-content related course questions.

[Content questions should be directed to Piazza](#) and not sent via email to either the TAs or me. **Content questions received via email will be directed to Piazza.** Piazza is a great online resource where you can post questions, post answers, and receive answers to your questions. Please remember to be very clear when wording your questions on Piazza. Pictures of structures from ChemDraw are very helpful. Chemdraw is an expensive piece of chemistry software to which you have free access. It is a high-quality chemistry drawing program that you can download (see below) 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 Canvas by the link on the sidebar.

Problem Sets, Textbook Practice Problems, Previous Quizzes/Exams

Practice problems are for individuals to self-assess areas of strength and weakness in a given area. Chosen questions are representative of important material, concepts, and problem solving methods. 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 questions but should only be utilized to check completed problems. Answer keys are intentionally not provided to some of the previous quizzes/exams. This is done to encourage you to talk to your classmates, TAs, and me about any answers that you are unsure of and to work through problems that you can't simply look up the answer to and shortcut the thinking/learning process. Exam problems will be similar to practice problems but will invoke creative problem solving and pattern recognition.

Classmates

Nothing reveals your misconceptions and misunderstandings regarding organic chemistry more than trying to explain something in words. It is highly recommended that you work with one or more classmates on a regular basis; both of you will benefit from the opportunity to talk about organic chemistry. Helping others through material is a great way to take your own learning of a concept from superficial to mastery.

Tutors

The Department of Chemistry maintains a list of private tutors available for hire. Although the private tutors included on the list have been affiliated with the department in some way, we provide this list as a resource and cannot guarantee the quality of any individual private tutor. [Chem tutoring service for Spring 2018](#).

Course Schedule – Chemistry 343 Lecture 1

<i>Discussion</i>	Monday Jan 22	Wednesday Jan 24	Friday Jan 26
		Chapter 1 Bonding and Structure 1.1 – 1.3	Chapter 1 Bonding and Structure 1.4 – 1.7
Discussion Activity 1	Jan 29 Chapter 1/2 Bonding and Alkanes 1.8 – 1.9, 2.1, 2.2 2.7 – 2.9	Jan 31* Chapter 2 Alkanes 2.3 – 2.6	Feb 2 Chapter 3 Acids and Bases 3.1 – 3.3
Discussion Activity 2	Feb 5 Chapter 3 Acids and Bases 3.4 – 3.5	Feb 7 Chapter 3 Acids and Bases 3.6	Feb 9 Chapter 4 Alkenes 4.1 – 4.5
Discussion Activity 3 Quiz 1 (Ch 1-3.2)	Feb 12 Chapter 4 Alkenes 4.6 – 4.8	Feb 14 Chapter 4 Alkenes 4.9	Feb 16** Review for Exam 1
Exam Review 1 Discussion Activity 4	Feb 19 Chapter 5 Addition Reactions of Alkenes Exam 1 5:45 – 7:15 pm 5.1 – 5.3	Feb 21 Chapter 5 Addition Reactions of Alkenes 5.4 – 5.5	Feb 23 Chapter 5 Addition Reactions of Alkenes 5.6 – 5.8
Discussion Activity 5	Feb 26 Chapter 6 Stereochemistry 6.1 – 6.3	Feb 28 Chapter 6 Stereochemistry 6.4 – 6.10	March 2 Chapter 6 Stereochemistry 7.7 – 7.8
Discussion Activity 6	March 5 Chapter 7 Cyclic Compounds and Stereochemistry of Reactions 7.1, 7.5	March 7 Chapter 7 Cyclic Compounds and Stereochemistry of Reactions 7.2 – 7.4	March 9 Chapter 7 Cyclic Compounds and Stereochemistry of Reactions 7.6

* 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.

Course schedule is subject to change.

Discussion Activity 7 Quiz 2 (Ch 5 – 6)	March 12 Chapter 8 Alkyl Halides, Alcohols, Ethers, Thiols, and Sulfides 8.1 – 8.5	March 14 Chapter 8 Alkyl Halides, Alcohols, Ethers, Thiols, and Sulfides 8.6 – 8.8	March 16 Review for Exam 2
Exam Review 2 Discussion Activity 8	March 19 Chapter 9 Chemistry of Alkyl Halides Exam 2 5:45 – 7:15 pm 9.1 – 9.4	March 21 Chapter 9 Chemistry of Alkyl Halides 9.4 – 9.5	Mach 23† Chapter 9 Chemistry of Alkyl Halides 9.6 – 9.8
Discussion Activity 9	April 2 Chapter 9/10 Chemistry of Alcohols and Thiols 9.9, 10.1 – 10.3	April 4 Chapter 10 Chemistry of Alcohols and Thiols 10.4 – 10.5	April 6 Chapter 10 Chemistry of Alcohols and Thiols 10.6 – 10.13
Discussion Activity 10	April 9 Chapter 11 Chemistry of Ethers, Epoxides, Glycols, and Sulfides 11.1 – 11.3	April 11 Chapter 11 Chemistry of Ethers, Epoxides, Glycols, and Sulfides 11.4 – 11.5	April 13 Chapter 11 Chemistry of Ethers, Epoxides, Glycols, and Sulfides 11.6 – 11.11
Discussion Activity 11 Quiz 3 (Ch 9 – 10)	April 16 Chapter 11 Chemistry of Alkynes 14.1 – 14.6	April 18 Chapter 14 Chemistry of Alkynes 14.7 – 14.10	April 20 Review for Exam 3
Exam Review 3 Discussion Activity 13	April 23 Chapter 1-15 Semester Review Exam 3 5:45 – 7:15 pm	April 25 Chapter 15 Dienes, Resonance, and Aromaticity 15.1 – 15.4	April 27 Chapter 15 Dienes, Resonance, and Aromaticity 15.5 – 15.7
Exam Review 4 Discussion Activity 14	April 30 Chapter 15 Dienes, Resonance, and Aromaticity 15.8	May 2 Make up day/Review	May 4 Q&A/Final Review

Final Exam Friday May 11 at 10:05 am – 12:05 pm and Location TBD

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