

# CHEM 343: Introductory Organic Chemistry

## SYLLABUS – FALL 2019

### 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

### Time and location

MWF 12:05-12:55 PM, Noland 132

### Credit hours: 3

Students are expected to engage in at least 135 hours of learning activities over the course of the semester, which include

- Three 50 min lectures per week
- One 50 min discussion per week
- Reading, studying, preparation, practice problems, and other activities

### Course designations

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

### Instructional mode

Face-to-face

## LEARNING OUTCOMES

Students in CHEM 343 will learn to...

1. Identify and use the structural features of the following classes of organic molecules to predict their reactivity: alkanes, alkenes, alkynes, alcohols, alkyl halides, and ethers
2. Explain the mechanisms of common reactions for alkanes, alkenes, alkynes, alcohols, alkyl halides, and ethers
3. Describe the reagents, solvents, and conditions used to effect common organic transformations
4. Explain what chirality is and identify the stereochemistry of different organic molecules
5. Predict the stereochemical outcomes of common reactions based on their mechanisms

Beside these specific objectives, a primary goal of this course will be to teach you how to approach and master an unfamiliar and complex subject matter. Learning itself is a skill that will prove invaluable to you for the rest of your college experience and for whatever you decide to pursue afterwards.

## INSTRUCTOR & TEACHING ASSISTANTS

**Instructor:** Professor Tina Wang

- **Contact:** [twang495@wisc.edu](mailto:twang495@wisc.edu)
  - Include "CHEM 343" in the subject line
  - Please restrict emails to questions about class logistics
  - I will usually respond within 24 hours
- **Office hours:**
  - Mondays 12:55-1:55 PM, Noland 168
  - Thursdays 5:30-6:30 PM, Psych 107
  - By appointment

**Teaching assistant:** Cara Schwarz

- **Contact:** [ceschwarz@wisc.edu](mailto:ceschwarz@wisc.edu)

Please note that content questions will never be addressed by the TA or the professor via email. Post content questions to Piazza or bring them to office hours or discussion sessions.

**TA office hours:** You are welcome to attend office hours with any CHEM 343 TA. The schedule can be found here:

[https://www.chem.wisc.edu/deptfiles/OrgLab/handouts/Organic\\_TA\\_Office\\_Hours\\_Fall\\_2019.pdf](https://www.chem.wisc.edu/deptfiles/OrgLab/handouts/Organic_TA_Office_Hours_Fall_2019.pdf)

## COURSE MATERIALS

### Required

*Organic Chemistry* by Marc Loudon and Jim Parise (6<sup>th</sup> edition). There is an accompanying Study Guide and Solutions Manual which is available bundled with the textbook from the University Bookstore and other sources.

### Strongly recommended

*Molecular model kit*. Organic compound exists in three dimensions, and sometimes it can be difficult to understand what is happening from a 2D drawing. A model kit will help to bridge this gap. There are many inexpensive ones available from online retailers. You will be allowed to use a model kit in exams.

## GRADING

### 550 pts total

- 3 exams worth 100 pts each
- 1 final exam worth 200 pts
- 50 pts for attendance **and** participation at discussion sessions

### Exams

- 3 in-class exams will be given during the normal lecture period

- **Exam 1: October 4**
- **Exam 2: October 30**
- **Exam 3: November 25**
- Although exams may focus on a subset of chapters, the material they cover will be cumulative.
- **Final Exam: Thursday, December 19, 12:25-2:25 PM** (room TBA)
- There will be no makeup exams
- All exams will be closed book/notes. Model kits are permitted.
- Regrade requests must be made within 5 days of the date the exam was returned
  - Submitting a modified exam for regrading is considered serious academic misconduct.

### **Discussion sessions**

- You are allowed two “free” absences. After this, each absence will cost you 5 pts. If you miss more than half of the discussion sessions, you will lose all 50 pts.

**Final grades** will be curved based on historical norms in the UW-Madison Department of Chemistry. The **only** determinant of your final course grade will be the number of points you earned over the course of the semester.

## **ACADEMIC INTEGRITY**

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison’s community of scholars in which everyone’s academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. <https://conduct.students.wisc.edu/academic-integrity>

## **ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES**

“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 faculty [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. Faculty [I], will work either directly with the student [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.”  
<http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

## DIVERSITY AND INCLUSION

### Institutional statement on diversity

“Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.”

<https://diversity.wisc.edu/>

## TENTATIVE SCHEDULE

4 September	W	Chapter 1: Chemical bonding and structure
6 September	F	
9 September	M	Chapter 2: Alkanes
11 September	W	
13 September	F	Chapter 3: Acids and Bases/The Curved-Arrow Notation
16 September	M	
18 September	W	
20 September	F	Chapter 4: Introduction to Alkenes
23 September	M	
25 September	W	
27 September	F	
30 September	M	
2 October	W	Chapter 5: Addition Reactions of Alkenes
<b>4 October</b>	<b>F</b>	<b>Exam 1 (in class) [Chapters 1-4]</b>
7 October	M	
9 October	W	
11 October	F	
14 October	M	Chapter 6: Principles of Stereochemistry
16 October	W	
18 October	F	Chapter 7: Cyclic Compounds/Stereochemistry of Reactions
21 October	M	
23 October	W	
25 October	F	
28 October	M	Chapter 8: Noncovalent Intermolecular Interactions
<b>30 October</b>	<b>W</b>	<b>Exam 2 (in class) [Chapters 5-7]</b>
1 November	F	
4 November	M	Chapter 9: Alkyl Halides/Nucleophilic Substitution
6 November	W	

8 November	F	
11 November	M	
13 November	W	
15 November	F	Chapter 10: Alcohols and Thiols
18 November	M	
20 November	W	Chapter 11: Ethers, Epoxides, Glycols, and Sulfides
22 November	F	
<b>25 November</b>	<b>M</b>	<b>Exam 3 (in class) [Chapters 8-11]</b>
27 November	W	Chapter 14: Alkynes
29 November	F	No class – Thanksgiving Recess
2 December	M	
4 December	W	
6 December	F	Chapter 15: Dienes, Resonance, and Aromaticity
9 December	M	
11 December	W	
<b>19 December</b>	<b>Th</b>	<b>Final Exam (12:25-2:25 PM, location TBA)</b>