



## CHEM 343 – SYLLABUS – 2018

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**Course:** Chemistry 343, “Introductory Organic Chemistry” – Lectures 2 and 3

**Number of credits:** 3 credits

**Canvas course URL:** <https://canvas.wisc.edu/courses/76081>

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

**Meeting Time and Location:** Lec 2: TR 1 pm, Room 1361 Chemistry  
Lec 3: TR 9:30 am, Room 1361 Chemistry

**Instructional Mode:** All face-to-face

**Credit Hours are met by the Course** *via the traditional Carnegie Definition.* The class meets each week for two 75-minute lectures and one 50-minute discussion. Over the course of the semester, students are expected to perform at least 135 hours of learning activities, which include class and discussion attendance, reading, studying, preparation, problem sets, and other related learning activities.

### INSTRUCTORS & TEACHING ASSISTANTS

**Instructor Title and Name:** Professor Helen E. Blackwell

**Instructor Availability:** *Fridays at 1:15 pm (in Room 8335 Chemistry), or by appointment.*

**Instructor Email/Preferred Contact:** [blackwell@chem.wisc.edu](mailto:blackwell@chem.wisc.edu)

<b>Teaching Assistants:</b>	<b>LEC 3 – 9:30 am:</b>	
	Lei Liu	<a href="mailto:lliu263@wisc.edu">lliu263@wisc.edu</a>
	Marshall Padilla	<a href="mailto:mpadilla3@wisc.edu">mpadilla3@wisc.edu</a>
	<b>LEC 2 – 1 pm:</b>	
	Russ Gibadullin	<a href="mailto:gibadullin@wisc.edu">gibadullin@wisc.edu</a>
	Maddie Herman	<a href="mailto:mherman3@wisc.edu">mherman3@wisc.edu</a>
	Adam Kleman	<a href="mailto:kleman2@wisc.edu">kleman2@wisc.edu</a>

**TA Office Hours:** These times are subject to change, and can be found at the following link:  
[https://www.chem.wisc.edu/deptfiles/OrgLab/handouts/Organic\\_TA\\_Office\\_Hours\\_Spring\\_2018.pdf](https://www.chem.wisc.edu/deptfiles/OrgLab/handouts/Organic_TA_Office_Hours_Spring_2018.pdf)

**TA Email/Preferred Contact:** Please see above.

## OFFICIAL COURSE DESCRIPTION

### 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

The following courses are prerequisites: Chem 104, Chem 109, or Chem 116

## LEARNING OUTCOMES

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*

## GRADING

- This course is graded based on a total point score of 600 points (3 exams [100 pts each] + 1 final exam [200 pts] + homework sets [50 pts] + discussion sections [50 pts])
- Final grades will be assigned based on a curve that is based on historical norms in the Department of Chemistry at UW–Madison.
- Attendance and participation in Discussion sections is part of the grading.

## DISCUSSION SESSIONS

All students enrolled in Chem 343 lecture must also enroll in a discussion section that meets once per week. Attendance will be taken. Discussion sections, led by experienced graduate student teaching assistants, are largely designed as interactive problem solving sessions where students work on problems with guidance from the teaching assistant and peers. There also will be ample time for student questions.

## LABORATORY SESSIONS

There is no associated lab session.

## REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS

"Organic Chemistry" by Marc Loudon and Jim Parise, 6<sup>th</sup> Edition. There is an accompanying Study Guide and Solutions Manual. The textbook/manual bundle is available from the University Bookstore and likely other sources. The course will cover Chapters 2-11, 14, and 15 in Loudon.

## EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK

- Quizzes: Four short, unannounced quizzes will be given in the weekly discussion sections throughout the semester.
- Exams: Three mid-term exams will be given in-class during our scheduled class period (75 min,

closed book/notes). The mid-term exam dates are: Tues Feb 20, Thurs Mar 22, and Thurs Apr 19.

- Final exams are scheduled for Lecture 3 on Tues May 8 (5:05-7:05 pm) and for Lecture 2 on Wed May 9 (12:25-2:25 pm).

## **HOMEWORK & OTHER ASSIGNMENTS**

There are 12 required problem sets (one for each Chapter) for this course. They will be completed and submitted online using Sapling Learning. You should have a Sapling "Bundle" access code if you purchased the 6<sup>th</sup> Ed. textbook bundle at the bookstore. If you did not purchase the bundle, you can buy the code at the bookstore or sign up with Sapling separately for a fee. Each problem set will be ~15 problems in length. Many of these problems are based on those in the textbook. You should complete one problem set each week; the due dates for each set will be ~one week after the completion of the corresponding Chapter in class. You are encouraged to complete these problem sets quite a bit prior to their due date. Review problem sets (ungraded) will be available before exams.

## **RULES, RIGHTS & RESPONSIBILITIES**

See the Guide's to [Rules, Rights and Responsibilities](#).

## **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. For more information, please see: [studentconduct.wiscweb.wisc.edu/academic-integrity/](http://studentconduct.wiscweb.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 & 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/>

## Chapters and specific sections to be covered in Chem 343 – Spring 2018

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All in "Organic Chemistry", 6<sup>th</sup> Edition, by Marc Loudon and Jim Parise.

Note, you should work all of the problems in the textbook associated with these Chapter sections (in the text and at the end of the Chapter). You do not need to turn these problems in for credit. Mastery of these problems will significantly facilitate your understanding of the course material.

**Chap 1:** (*Note, I will not cover Chapter 1 in class as it is all basic review from general chemistry, but the following sections are the most worthwhile as a refresher: 1.1, 1.2, 1.3, 1.4, 1.8, and 1.9*)

**Chap 2:** 2.1, 2.2, 2.3, 2.4, 2.5, and 2.8

**Chap 3:** 3.1, 3.2, 3.3, 3.4A–C, and 3.6

**Chap 4:** 4.1 ( $\pi$ -bonding introduced in Chap 1), 4.2, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9A and B

**Chap 5:** 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, and 5.7

**Chap 6:** 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, and 6.10

**Chap 7:** 7.1, 7.2, 7.3, 7.4, 7.5 (note, we will start with section 7.5 1<sup>st</sup> in this Chap), 7.6B (no bicyclic nomenclature required except for decalins), and 7.8

**Chap 8:** 8.1, 8.2 (nomenclature of thiols & sulfides not a focus), 8.3, 8.4 (intermolecular interactions – introduced earlier in course), 8.5A–C, 8.6A–D (solutions and solubility), and 8.8

**Chap 9:** 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8 (organometallics: note, will cover this section later in Chap 11 (sec 11.5C)), and 9.10A

**Chap 10:** 10.1, 10.2, 10.3, 10.4A–D, 10.5, 10.6 (oxidation), 10.7, 10.11, and 10.12

**Chap 11:** 11.1, 11.2, 11.3, 11.4, 11.5 (connect here with Chap 9), 11.6, 11.10, and 11.11

**Chap 12:** *Skip* → IR & MS will be covered in Chem 344/345

**Chap 13:** *Skip* → NMR will be covered in Chem 344/345

**Chap 14:** 14.1 ( $\pi$ -bonding introduced in Chap 1), 14.2, 14.4, 14.5, 14.6, 14.7, and 14.8 (*skip any problems with Chap 12 or 13 material*)

**Chap 15:** 15.1, (*skip 15.2* → UV & fluorescence), 15.3, 15.4, 15.6, 15.7 (no Frost Cycle), and 15.8 (*skip any problems with Chap 12, 13, and 15.2 material*)