



**Intermediate Organic Chemistry CHEM
345-004
Honors Section
Spring 2018**

Canvas Course URL: <https://canvas.wisc.edu/courses/76128>

Meeting Time and Location

*Tuesday and Thursdays from 9:30 to 10:45 am in Room 1315 Chemistry Building
Discussion Sections: see page 2*

Instructional Mode + Credit Hour Accounting

Instruction in this course will primarily occur in a lecture format, although some periods will be devoted to other modes. The three credit hours derive from the traditional Carnegie Foundation definition – we meet for lecture for the equivalent of 150 min per week (two 75-min periods of faculty-student instruction). In addition, success in this course will require additional hours of studying outside of lecture, for example there will be assigned readings from the required textbook and problem sets.

INSTRUCTORS AND TEACHING ASSISTANTS

Associate Professor Daniel J. Weix

Office hours: TBD

Office: Rm 5132 Shain Tower, Chemistry

Phone: 262-0541

Email: dweix@wisc.edu (preferred)

While email is the preferred mode of contact, do not expect an immediate reply. Average turnaround will be about a day. In the event of an urgent matter (rare), be sure to call me directly.

Andrew Maza

Office hours: T 4:35-6:25 pm, F 11-12:05 pm, F 2:25-3:30 pm

Email: amaza@chem.wisc.edu

a list of all 345 TA office hours

https://www.chem.wisc.edu/deptfiles/OrgLab/handouts/Organic_TA_Office_Hours_Spring_2018.pdf

OFFICIAL COURSE DESCRIPTION

Course Description

Chemistry 345 is the second course of a two-semester sequence in organic chemistry. It covers diverse themes in organic reactivity, building on a foundation provided in Chemistry 343. Chemistry 341 does not satisfy the prerequisite for 345.

Requisites

Grade of C or better in CHEM 343. In addition, in almost all cases, students in this honors section of 345 have participated in the honors section of 343.

You are not engaged so much in acquiring knowledge as in making mental efforts under criticism. A certain amount of knowledge you can indeed with average faculties acquire so as to retain; nor need you regret the hours spent on much that is forgotten, for the shadow of lost knowledge at least protects you from many illusions. But you, go to school not for knowledge as much as for arts and habits; for the habit of attention, for the art of expression, for the art of assuming at a moment's notice a new intellectual posture, for the art of entering quickly into a person's thoughts, for the habit of submitting to censure and refutation, for the art of indicating assent or dissent in graduated terms, for the habit of regarding minute points of accuracy, for the habit of what is possible in a given time, for taste, for discrimination, for mental courage and mental soberness. Above all, you go to school for self-knowledge.

William Cory – Master at Eton College (1861)

Chemists are a strange class of mortals, impelled by an almost maniacal impulse to seek their pleasures amongst smoke and vapour, soot and flames, poisons and poverty, yet amongst all these evils I seem to live so sweetly that I would rather die than change places with the King of Persia.

Johann Joachim Becher, *Physica subterranea* (1667)

LEARNING OUTCOMES

Course Learning Outcomes

1. Use structural and spectroscopic information to evaluate reaction mechanisms.
2. Identify and explain reactivity trends for most common organic reactions, with an emphasis on conjugated systems, aromatic systems, and carbonyl chemistry.
3. Apply reactions taught in 343 and 345 towards the retrosynthesis of a complex target.
4. Apply knowledge towards writing reasonable organic reaction “arrow-pushing” mechanisms for reactions that have not been explicitly discussed in class.
5. Identify the ways in which organic chemistry intersects other disciplines.

GRADING

Grading in this course will be based upon your scores on quizzes, exams, and a cumulative final exam. While attendance at lectures and discussions is encouraged, it is not specifically required. Note that quizzes and exams will happen during lecture and discussion section times.

| Grading | Format | Points |
|---------|--------------------|--------|
| quizzes | [best 5 of 6] × 12 | 60 |
| exams | 125 × 3 | 375 |
| final | 250 | 250 |
| | Total | 685 |

Finally, although statistical tools will be used to assist in setting the grading scale, a simple curve will not be enforced. It is possible for everyone in the class to receive an A grade.

DISCUSSION SESSIONS

There are weekly 50-min discussion sections led by Andrew Maza
12:05 pm in room B387 Chemistry Building
1:30 pm in room B379 Chemistry Building

LABORATORY SESSIONS

CHEM 344 is the associated laboratory course, but concurrent registration is NOT required.

REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS

- **Required:** Organic Chemistry, 6th Ed. by Loudon and Parise (same as CHEM 343)
- **Recommended:** Study Guide and Solutions Manual to Accompany Organic Chemistry (same as CHEM 343)
- **Molecular Model Kit:** Nearly any kit will suffice, such as the HGS “Organic Chemistry Basic” Set (Maruzen, ~\$28). Many other suppliers, including Darling and Duluth Labs.
- I will NOT be using Sapling
- I WILL be using Canvas

EXAMS, QUIZZES, PAPERS & OTHER MAJOR GRADED WORK

- All quizzes, exams, and the final are closed. You are being graded on your mastery of the material and all work must be your own. No outside assistance of any kind is permitted, such as notes, books, or electronics.
- Quizzes will happen in regular discussion sections and are un-announced.
- Exam 1: Feb 27
- Exam 2: **April 3** <- Note this was incorrect on version 1. Right after spring break!
- Exam 3: May 1
- Final: May 8th, 5:05 to 7:05 pm, room TBD
- Make up exams for planned, reasonable absences must be arranged in advance. Emergencies will be dealt with on a case-by-case basis in a humane way.

HOMEWORK & OTHER ASSIGNMENTS

There are no formally graded homework assignments for this course, but there will be assigned problems and readings. Students are expected to complete all readings and work all problems according to the attached schedule. Additional studying, such as working extra problems, flash cards, writing (and re-writing) summaries of topics, and team-based learning, will be required to obtain a high grade in this course.

RULES, RIGHTS & RESPONSIBILITIES

Beyond the normal duties of doing assignments (the [Guide's to Rules, Rights, and Responsibilities](#)), attending lecture, and trying your best, please:

1. *Do readings before lecture.* If you do this, you will find that lectures will make more sense, you'll be better able to participate, and you'll get a better grade.
2. *Ask questions.* I am bound to cover some topic poorly or make a mistake, leading to confusion. If you are brave enough to ask, your fellow students and I will be grateful.
3. *Do the homework problems.* I will not check them, but I expect you to do them. There is no better way to learn organic chemistry than by working problems! Please DO NOT look at the answers until after you have completed the problems.

4. *Participate in the discussion section.* Andrew will *not* tell me if you make a mistake or don't understand a concept, nor would I ever think less of someone who has the courage to participate. Their feedback to me will be diagnostic only. So, please, join the discussion!

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, refer to 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 Prof. Weix 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. Prof. Weix will work either directly with the 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

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/>

2018 CHEMISTRY 345H – Lecture and Exam Schedule [Tentative]

| Lecture | Date | Topic | Reading <i>(do before lecture)</i> | Textbook problems <i>(do after lecture)</i> |
|---------------|----------|---|---------------------------------------|--|
| 1 | Jan 23 | Introduction, Dienes, Diels-Alder | 15.1-15.3 | |
| 2 | Jan 25 | Diels-Alder, Additions, Resonance, Aromaticity | 15.4-end | 42-44, 46-48, 57, 61, 62, 65, 68, 69, 71, 73, 79, 80, 84 |
| 3 | Jan 30 | Finish Aromaticity, Electrophilic Aromatic Substitution | 16.1-16.4 | |
| 4 | Feb 1 | Substitution Effects in EAS | 16.5-end | |
| 5 | Feb 6 | Finish up EAS, Start Chapter 17 | | 35-37, 39-41, 43, 44, 45, 46, 47, 53, 54, 58, 61, 63, 67 |
| 6 | Feb 8 | Chapter 17 | | |
| 7 | Feb 13 | Chapter 17 | | |
| 8 | Feb 15 | Chapter 18 | | |
| 9 | Feb 20 | Chapter 18 | | |
| 10 | Feb 22 | Chapter 18 | | |
| Exam 1 | Feb 27 | Exam 1 CH 15-18 | | |
| 11 | Mar 1 | Chapter 19 | | |
| 12 | Mar 6 | Chapter 19 | | |
| 13 | Mar 8 | Chapter 19 | | |
| 14 | Mar 13 | Chapter 20 | | |
| 15 | Mar 15 | Chapter 20 | | |
| 16 | Mar 20 | Chapter 21 | | |
| 17 | Mar 22 | Chapter 21 | | |
| | Mar 27 | <i>No Lecture – Spring Recess</i> | | |
| | Mar 29 | <i>No Lecture – Spring Recess</i> | | |
| Exam 2 | April 3 | Exam 2 CH 19-21 | | |
| 18 | April 5 | Chapter 22 | | |
| 19 | April 10 | Chapter 22 | | |
| 20 | April 12 | Chapter 22 | | |
| 21 | April 17 | Chapter 22 | | |
| 22 | April 19 | Chapter 23 | | |
| 23 | April 24 | Chapter 24 | | |
| 24 | April 26 | Chapter 24 | | |