



Advanced Organic Chemistry
CHEM 547
Syllabus
Fall 2019

Canvas Course URL: <https://canvas.wisc.edu/courses/153313>

Meeting Time and Location

MWF from 12:05 to 12:55 am in Room 1315 Chemistry

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 150 min per week. In addition, success in this course will require additional hours of studying outside of lecture, for example there will be assigned readings and problem sets.

INSTRUCTORS AND TEACHING ASSISTANTS

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 rare event of an urgent matter, be sure to call me directly by telephone.

OFFICIAL COURSE DESCRIPTION

Course Description

A third semester of descriptive organic chemistry.

Requisites

CHEM 345.

I do not believe that the present flowering of science is due in the least to a real appreciation of the beauty and intellectual discipline of the subject. It is due simply to the fact that power, wealth and prestige can only be obtained by the correct application of science.

– Derek H. R. Barton in "Some Reflections on the Present Status of Organic Chemistry."

LEARNING OUTCOMES

Course Learning Outcomes

Chem 547 is course in advanced organic chemistry appropriate for upper-level undergraduates and beginning graduate students. By the end of the semester, students will be able to

1. identify and recall key reagents used in contemporary organic synthesis;
2. analyze organic transformations using frontier molecular orbital (FMO) theory as a conceptual tool;
3. apply concepts of chemical structure, bonding, and reactivity to predict the outcomes of pericyclic reactions, carbonyl reactions, and redox reactions;
4. rationalize and predict the outcome of simple organometallic reactions.

GRADING

This course will be scored out of 630 points maximum (2 × 150 pt midterm exams + 1 × 300 pt final exam + 30 points participation credit). The class will not be graded on a strict curve, but historical grade distributions for the class have been 30% A, 15% AB, 20% B, 15% BC, 15% C or lower.

Grading	Format	Points
participation		30
midterms	150 × 2	300
final	300	300
	Total	630

REQUIRED TEXTBOOK, SOFTWARE & OTHER COURSE MATERIALS

- **Required:** there is no formal required textbook, but you should have access to your sophomore organic textbook. The Loudon textbook is on reserve in the library as well. I will assign some readings from this book.
- **Recommended:** The Clayden book is a useful “bridge” book between sophomore organic and graduate level material. If you are planning to continue in organic chemistry, this book would be a valuable purchase. It can be found used for a low price – look for the 2nd edition.
- **Supplemental:** If arrow-pushing is giving you trouble, The Art of Writing Reasonable Organic Reaction Mechanisms (Grossman) is a helpful book.
- **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

- Midterm 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 of any kind.
- **Midterm 1:** 10/12/2019 (Friday) in class
- **Midterm 2:** 11/15/2019 (Friday) in class
- **Final Exam:** 12/19/2019 from 12:25 to 2:25 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

Problem sets will be assigned weekly. These will not be collected, but your answers will be discussed in weekly problem sessions, to be held during normal lecture times.

PARTICIPATION

You will receive 3 points of extra credit each time you work a problem at the board during discussion section, up to a maximum of 30 points for the semester. You will also receive participation credit for asking or answering questions during lecture.

RULES, RIGHTS & RESPONSIBILITIES

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

1. *Be Prepared.* In order to gain the full benefit of lecture and discussion, you must come prepared. Assigned readings and problems should be completed before our scheduled classtime.
2. *Participate.* 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. Be willing to work problems at the board even if you are not sure of your answer! Exposing your thinking to criticism is scary, but it is the best way to learn and improve.
3. *Collaborate.* While the midterm and final exams must be your own work, you should collaborate with your classmates on homework and discussion problems. As in #2, a willingness to discuss your ideas and give/take criticism is essential to succeed at the highest levels. Effective collaboration also requires you to be respectful of your classmates and to behave professionally.

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. <https://mcburney.wisc.edu/apply-for-accommodations/>

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/>