

COURSE SYLLABUS

CHMY 563 Organic Synthesis

Fall '09

Prerequisite: One year of undergraduate organic chemistry

Recommended prerequisite: CHEM 562 or equivalent (not required)

Meetings: Tuesday, Thursday and Friday at 8:00 am. Room to be determined: _____.

Instructor: David Bolstad

Office: CHCB 418 (inside of 415)

Office Hours: When I'm in my office.

Phone: 243-6088

Email: david.bolstad@umontana.edu

Course Objectives

We will build upon the reactions covered in a typical year-long sophomore organic chemistry course and greatly diversify our knowledge of chemical transformations. This course will emphasize contemporary methods of organic synthesis with an emphasis on the following: Chemoselectivity, regioselectivity, stereoselectivity, retrosynthesis, functional group transformations, carbon-carbon bond forming reactions, oxidations, reductions, protecting group chemistry, name reactions and natural product synthesis. By the end of this course the students should be able to examine a complex target, suggest plausible retrosyntheses and design and propose a reasonable synthesis for the target.

Texts:

This course has no required textbook. However, the list of recommended textbooks below will likely be drawn from for this course. Many of these are fairly inexpensive to purchase (as text books go), can be found in the UM library (or ILL), or in the library of your fellow graduate students. I also have a few copies of these texts that you can sign out. Additionally, for many of the reactions that we will be discussing in class, the internet can be used as a resource to find additional reading material.

1. The Art of Writing Reasonable Organic Reaction Mechanisms, Robert B. Grossman. Second edition. Springer, 2007.
2. Modern Organic Synthesis: An Introduction. George S. Zweifel and Michael H. Nantz. Freeman, 2007.
3. Organic synthesis. Michael B. Smith. Second edition. McGraw-Hill, 2001.
4. March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure. Michael B. Smith and Jerry March. Sixth edition. Wiley, 2007. Older editions are also quite good. I've used the fifth edition since 2001.
5. Advanced Organic Chemistry: Part B: Reaction and Synthesis. Francis A. Carey and Richard J. Sundberg. Fifth edition. Springer, 2008.
6. Organic Synthesis: The disconnection approach. Stuart Warren and Paul Wyatt. Second Edition. Wiley, 2009.
7. Organic Synthesis: Strategy and Control. Paul Wyatt and Stuart Warren. Wiley, 2007.
8. Modern Organic Synthesis. Dale Boger. TSRI Press, 1999. Out of print, but an amazing reference material if you can get a hold of it. A CD version is available from The Scripps Research Institute.

Reading assignments and problem sets

Reading assignments, when assigned, will be handed to you in person or emailed as PDF documents and will be drawn from the primary literature. Problem sets will be handed out in class approximately every two weeks and will often require you to explore topics that have not been covered or may not be discussed in detail in lecture. However, enough information will be provided so that you'll be able to complete the assignments without searching hopelessly. This may include, for example, problems dealing with specific name reactions in organic chemistry or recent new discoveries that have been reported in the chemical literature.

Notable dates:

9/21	Last day to add/drop classes without a hassle
Week of 10/19	Mid-term exam
11/25 - 11/27	Thanksgiving Break
12/14 - 12/18	Finals Week

Course Grading

Eight Problem Sets; 100 points each; drop lowest	700
Midterm exam; week of 10/19	100
Final Exam	200
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Course Total	1000

Grades:

Percentage of total	Grade
90+	A/A-
80+	B-/B/B+
70+	C-/C/C+
60+	D-/D/D+
50	F

Academic misconduct:

Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. Definitions of academic misconduct, the associated penalties and disciplinary procedures are outlined in the student code of conduct.

The student code of conduct can be viewed at the following address:

<http://life.umt.edu/SA/documents/fromWeb/StudentConductCode1.pdf>

In class changes to this syllabus, supersede the information provided here.