CHEM 5340 Electronic Interpretation of Organic Chemistry **Fall 2023**

SYLLABUS

CONTACT:
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MEETINGS:
Class: M/W
9:05—9:55 am
CHEM T114

OFFICE HOURS:
By appt. (email)

COURSE CATALOG:
Approaches to writing organic reaction mechanisms

MATERIALS:
required
R. B. Grossman, *The Art of Writing Reasonable Reaction Mechanisms*, 2nd Edition, Springer, New York, NY; ISBN 0-387-95468-6.
resource/optional
A. Miller & P. H. Solomon Writing Reaction Mechanisms in Organic Chemistry, Academic Press (Harcourt) San Diego, CA; ISBN-0-12-496712-4

OBJECTIVES:
At the end of the semester, students should be able to:
a. categorize reactions into mechanistic types based on the reaction conditions.
b. draw step-by-step mechanisms that track electron flow in bond-breaking and bond-forming elemental steps for a given reaction.
c. use mechanistic reasoning to predict the products of unknown reactions.

GRADES:
Scoring Opportunities

activity	pts	activity	pts
Homework Problem Set	100	Exam 1	100
Participation	100	Exam 2	100
Weekly Quiz	100		
Total Points			**500**

Homework Problem Set
Several problems from Grossman will be assigned each week. These must be completed and handed in at Monday class. Assigned problem worksheets will be scored primarily for effort and will be due at the end of class each week.

Participation
One to two problems from Grossman plus an un-assigned problem will be done at the board during class each Wednesday. You will provide the mechanism, explaining it and your rationale. This activity is intended to encourage you to work *through* the assigned problems so that you learn from them. *Ratings: 10= accurate, clear, concise; 7=adequate, passable but needs work; 5=attempt.* For the syllabus, if your average score over the entire semester is ≥7, you earn full points (100), if your average <7, you earn the score's percentage.

Weekly Quiz
The last 15 minutes of Monday class meetings will be reserved for a quiz covering material from the previous week. Each quiz will be worth 20 points. 12 quizzes, percent average of top 10 scores count toward the syllabus score.

Exam 1, Exam 2
Exams will consist of 5-6 questions in the style of the assigned problems and focus on the chapters in Grossman; that is, Exam 2 will not necessarily be cumulative. You'll have 90 minutes to complete each exam and they will be given outside of class time.

Grades. Grades are given at the end of the semester. A breakdown of how scores are converted to grades is given below.

Grade	%
A	100-93
A-	92-90
B+	89-87
B	86-83
B-	82-80
C+	79-76
C	75-72
C-	71-66
D	65-60
F	<60

ACADEMIC INTEGRITY:

"A UConn student will not lie, cheat, steal, or tolerate those who do."

You are expected to do your own work in our class. Cheating is not worth it. Any instances of cheating will be aggressively punished. Sanctions outlined in the Student Conduct Code will be followed in the event that any cases arise. Note that the Student Code states, ***"The appropriate academic consequence for serious offenses is generally considered to be failure in the course."***

•From the UConn Student Code:

A. Academic Integrity

A fundamental tenet of all educational institutions is academic honesty; academic work depends upon respect for and acknowledgement of the research and ideas of others. Misrepresenting someone else's work as one's own is a serious offense in any academic setting and it will not be condoned.

Academic misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g. papers, projects, and examinations); any attempt to influence improperly (e.g. bribery, threats) any member of the faculty, staff, or administration of the University in any matter pertaining to academics or research; presenting, as one's own, the ideas or words of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; and presenting the same or substantially the same papers or projects in two or more courses without the explicit permission of the instructors involved.

A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation and shall be subject to the sanctions and other remedies described in *The Student Code*.

COUNSELING:

Stressed out? Please feel free to discuss any concerns with me or use the following services.

- SHaW Mental Health
  860-486-4705 https://studenthealth.uconn.edu/mental-health/
  860-486-4700 Advice nurse

- Dean of Students Office
  860-486-3426 http://dos.uconn.edu

Tentative schedule for the Fall 2023

Week 1
8/28 Syllabus **Quiz - Practice**
8/30 Organic Review Problems

Week 2
9/6 The Basics (Grossman, Chapter 1) **Quiz - Orgo Review**
9/8* Grossman Chapter 1 Problems
*special meeting date; meet in CHEM room A304

Week 3
9/11 Polar Reactions – Basic Conditions (Grossman, Chapter 2-A) + **Ch1 Probs Quiz - Gross. Ch1**
9/13 Grossman Chapter 2-A Problems

Week 4
9/18 Polar Reactions – Basic Conditions (Grossman, Chapter 2-B) + **Ch 2-A Probs Quiz - Gross. Ch2-A**
9/20 Grossman Chapter 2-B Problems

Week 5
9/25 Polar Reactions – Acidic Conditions (Grossman, Chapter 3-A) + **Ch 2-B Probs Quiz - Gross. Ch2-B**
9/27 Grossman Chapter 3-A Problems

Week 6
10/2 Polar Reactions – Acidic Conditions (Grossman, Chapter 3-B) + **Ch 3-A Probs Quiz - Gross. Ch3-A**
10/4 Grossman Chapter 3-B Problems

Week 7
10/9 Pericyclic Reactions (Grossman, Chapter 4-A) + **Ch 3-B Probs Quiz - Gross. Ch3-B**
10/11 Grossman Chapter 4-A Problems

Week 8
10/16 Pericyclic Reactions (Grossman, Chapter 4-B) + **Ch 4-A Probs Quiz - Gross. Ch4-A**
10/18 Grossman Chapter 4-B Problems
10/19 or 10/20 **Exam 1** (Intro + Grossman Chapters 1, 2, and 3)

Week 9
10/23 Radical Reactions (Grossman, Chapter 5-A) + **Ch 3-B Probs Quiz - Gross. Ch4-B**
10/25 Grossman Chapter 5-A Problems

Week 10
10/30 Radical Reactions (Grossman, Chapter 5-B) + **Ch 5-A Probs Quiz - Gross. Ch5-A**
11/1 Grossman Chapter 5-B Problems

Week 11
11/6 TM-mediated Reactions (Grossman, Chapter 6-A) + **Ch 5-B Probs Quiz - Gross. Ch5-B**
11/8 Grossman Chapter 6-A Problems

Week 12
11/13 TM-mediated Reactions (Grossman, Chapter 6-B) + **Ch 6-A Probs Quiz - Gross. Ch6-A**
11/15 Grossman Chapter 6-B Problems

Week XX
11/20 No class meeting — **THANKSGIVING BREAK**
11/22 No class meeting — **THANKSGIVING BREAK**

Week 13
11/27 TM-mediated Reactions (Grossman, Chapter 6-C) + **Ch 6-B Probs Quiz - Gross. Ch6-B**
11/29 Grossman Chapter 6-C Problems

Week 14
12/4 TM-mediated Reactions (Grossman, Chapter 6-D) + **Ch 6-C Probs Quiz - Gross. Ch6-C**
12/6 Grossman Chapter 6-D Problems

Week 15
Week of 12/11 **Exam 2** (Grossman Chapters 4, 5, and 6)