CHEMISTRY 5328  Mechanisms of Organic Reactions  Fall 2015

Time: TR 9:30 - 10:45 am (E203 CB) and M 5:30 pm (Problem Set Section)

Instructor: Professor Hien Nguyen (hien-nguyen@uiowa.edu)
Office: E433 Chemistry Building
Phone: 319-384-1887
Office Hours: Monday and Friday 1:00 - 2:30 pm or by appointment

Textbooks: 1) Modern Physical Organic Chemistry (A&D – Required)
   by Eric V. Anslyn and Dennis A. Dougherty
   Publisher: University Science Books
   by Francis A. Carey and Richard S. Sundberg
   Publisher: Springer, 5th Edition

Other Tools: Molecular Model Set (Highly Recommended)

Exams: EXAM I and Exam II  (Tentative Date: 10/15 and 12/01)
There will be two take-home exams. I will arrange the time that works for everyone. You
have 24 hours to work on the take-home exams. You must work independently and are
NOT allowed to discuss the take-home exams with anyone. In addition, you are NOT
allowed to search online for the answers to any questions on the exams. You are allowed
to consult your lecture notes, handouts, problem sets and the materials that I posted on
ICON.

Presentation: Tentative Dates: 12/07, 12/08, and 12/10
You will present a mechanistic paper to the class on the dates that I will announce. You
and your partner must choose a paper from the list that I provide. Presentations will be
20 minute long.

Homework: There will be SEVEN problem sets throughout the course of the semester. Although they
are not collected and graded, you should work together with your classmates to answer
all of questions in each problem set. I randomly ask you to go to the board and discuss
the mechanism/solution to certain questions on the problem set. Your grade is based on
how well your answer the question. Thus, you must be ready at the problem set section.

Grading:

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<th>Component</th>
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<td>Problem Sets</td>
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<td>Exam I</td>
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<td>Exam II</td>
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<td>Presentation</td>
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Course Administration: A majority of course business can be achieved at the Chemistry Center, E225 CB. The hours are 8 AM -12 Noon & 12:30 – 4:30 PM on M-F, and the contact person is Ms. Ellie Keuter (335-1341). The following issues SHOULD be achieved at the Chemistry Center: drop/add forms, section changes, and TA office hours.

Complaints: complaints and appeals can be filed at the Department of Chemistry offices located in E331 CB (335-1350).

Tentative Schedule: In addition to reading materials from A&D, handouts and/or lecture notes will be posted on ICON.

1. Bonding Theories
   – Reading materials: A&D (Chapter 1)

2. Arrow-Pushing Mechanisms
   – Reading materials: A&D (Appendix 5)

3. Stereochemistry and Baldwin’s Rule Cyclization
   – Reading materials: A&D (Chapter 6 and Chapter 10.9.4)

4. Conformational Analysis of Acyclic and cyclic systems
   – Reading materials: A&D (Chapter 2)

5. Reaction Mechanism
   – Reading materials: A&D (Chapter 4)

6. Correlation of Structure and Reactivity
   – Reading materials: A&D (Chapters 7 and 8)

7. Acid-Base Chemistry
   – Reading materials: A&D (Chapter 5)

8. Catalysis
   – Reading materials: A&D (Chapter 9)

9. Pericyclic Reactions
   – Reading materials: A&D (Chapter 15)
College Statement

Administrative Home: The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Questions may be addressed to 120 Schaeffer Hall or see the CLAS Student Academic Handbook [www.clas.uiowa.edu/students/academic_handbook/index.shtml].

Electronic Communication: University policy specifies that students are responsible for all official correspondences sent to their standard University of Iowa e-mail address (@uiowa.edu). Students should check this account frequently. (Operations Manual, III.15.2. Scroll down to k.11.)

Academic Fraud: Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Student Academic Handbook.

Making a Suggestion or a Complaint: Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic Handbook.

Accommodations for Disabilities: A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make arrangements. See www.uiowa.edu/~sds/ for more information.

Understanding Sexual Harassment: Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the University Comprehensive Guide on Sexual Harassment at www.uiowa.edu/~eod/policies/sexual-harassment-guide/index.html for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather: In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. (Operations Manual, IV.16.14. Scroll down to e. h. and i.)