CHEM 840, Physical Organic Chemistry I Spring 2017

Instructor: Jon Tunge, 4033 Malott, tunge@ku.edu

Office Hours: by appointment

Lecture: MWF 9:00-9:50, 2007 Malott Hall

Prerequisite: CHEM740

Texts: Required: Modern Physical Organic Chemistry; Eric V. Ansyln & Dennis A. Dougherty

Mechanism and Theory in Organic Chemistry; Lowry and Richardson

CHEM840 on the Internet: I will post course materials and grades on Blackboard. Make sure you can access Blackboard (courseware.ku.edu) and confirm that your e-mail address is up-to-date.

Preparation: Read the book, Read the literature with an eye toward mechanism, Push arrows, WORK PROBLEMS.

Quizzes: We will have quizzes every Friday toward the end of class. If more than 10 quizzes are given, your top 10 scores will be used in determining your grade.

Grading: Assignments: 5 @ 10 pts 50 pts
Quizzes: 10 @ 10 pts 100 pts
Exams: 2 “hour” exams @ 100 pts 200 pts
Final exam 150 pts

Total 500 pts

Exams: Scheduled for Tuesday March 28th and Tuesday April 18th. These will be held in the evening from 6:00-9 to provide adequate time.

Final Exam: Comprehensive. Monday, May 8th 7:30-10:00 A.M.

Graded examinations will usually be available within one week following the examination. Please carefully check your exams for errors in grading. Any exam requiring regrading should be turned in immediately and you should indicate which questions you wish regraded by circling that question. No grades will be changed unless the exams are submitted for regrading by the second class period after the graded exams are available.

Content: This semester of physical organic chemistry will cover experiments related to the determination of reaction mechanism. It will further cover common catalytic reaction mechanisms, mechanisms of pericyclic reactions, and elementary reactions involved in transition metal catalysis. These topics are covered in Part II of your text, primarily in chapters 7-12 and 15.
GRADES: While you can expect that A > 89%; B > 79%; C > 69%; D > 59%, your performance will be evaluated relative to the class average. While not receiving letter grades on individual exams may be frustrating, ultimately your grade will likely be higher than that expected based on percentages. You will be informed of the class average on each exam so that you can gauge your standing. If you need more feedback, please contact me to discuss it in person.

HOW TO STUDY ORGANIC CHEMISTRY: Success in organic chemistry requires mastering a substantial body of factual information and the use of this information in the solution of problems. A good rule of thumb is to allot 2 hours of study and problem solving outside of class for every hour of lecture. To study productively, you should carefully read the text and your cross-reference with your lecture notes. Train your hand to draw the structures of molecules, write equations and mechanisms. Build models of various structures and learn to translate these three dimensional structures onto paper. Get a large quantity of scratch paper and write, write, write! Work as many problems as possible, in writing and in full detail. Struggle with a problem that you can't solve immediately. Don't give up and look up the answer. If you still can't solve the problem set it aside and try it again later. Don't try to memorize the text and cram before exams. If you do, you are courting disaster! An understanding of reactions is essential and although facts must be learned, they will quickly overwhelm you unless you understand the general principles and see the relationships among the facts.

STUDY AIDS: Molecular models are extremely useful for studying conformational analysis and stereochemistry. They are available for purchase in the bookstore and are also available for two-hour checkout in the Science Library. Computer programs for visualizing molecules in three dimensions (ChemDraw and Chem3D: https://chem.ku.edu/resources/it/chembiooffice) are available via a KU site license.

HELP: Help is easily available! 1) Use your textbook. 2) Email me or come see me. 3) Work with a study group. There is no better way to learn than explaining material to your peers.

ACADEMIC MISCONDUCT: Cheating or the appearance thereof, will not be tolerated. Familiarize yourself with published University regulations (see https://chem.ku.edu/phd/info/misconduct). The Instructor reserves the right to make and keep copies of individual examination papers. Cheating on any quiz, problem set, or exam will result in receipt of a score of 0 for the task. A formal report to the University may also be filed. Dismissal from the program and the University is a real possibility.

RECORDING LECTURES: Course materials prepared by the instructor, together with the content of all lectures presented by the instructor are the property of the instructor. Video and audio recording of lectures without the consent of the instructor is prohibited. On request, the instructor will usually grant permission for students to audio tape lectures, on the condition that these audio tapes are only used as a study aid by the individual making the recording. Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

INCOMPLETES/WITHDRAWALS: Incompletes will only be given in situations where a documented and unavoidable absence keeps you from completing the semester. Additionally, incompletes will only be given if you are passing the course on the date of your last attendance. You will be assigned a “withdraw failing” if you withdraw any time after the second exam and you are not passing the course.