SYLLABUS

CHE 501 GRADUATE ORGANIC CHEMISTRY Fall Semester 2017

T, Th 11:00 am - 12:20 pm 209 O'Brian
INSTRUCTOR: Dr. Sherry R. Chemler OFFICE: NSC 618 PHONE: 645-4225
OFFICE HOURS: M, Th 1:30 – 2:30 pm
REQUIRED TEXT: *Modern Physical Organic Chemistry*
Eric A. Anslyn and Dennis A. Dougherty
Student Solutions manual is also available for purchase.

Lecture Schedule	**Read**
August 29, 31	Chapter 1, Appendix 5
September 5, 7, 12	Chapter 15 and 16.3.4
HW check on or before Sept 18	
September 14, 19	Chapter 2, Chap 15
September 21, 26, 28	Chapter 5
HW check on or before Sept 2	
October 3	Exam
October 5, 10	Chapter 6
HW check on or before Oct 16	
October 12, 17, 19	Chapter 7
October 24, 26, 31	Chapter 8
November 2, 7	Chapter 9
HW check on or before Nov. 7	
November 9	Exam
November 14, 16	Chapter 10
November 21,28	Chapter 11
November 30,5	Chapter 12
December 7	Chapter 16
HW check Dec 8	
December 12, 11:45-2:45, NSC218	Final Exam

Problem Sets

*various additional problems may be handed out in class for different sections

Chapter 1 – 1, 2, 7, 9, 10, 12, 13, 16

Chapter 15 – 2, 3, 4, 5, 6, 7, 8, 9, 10, 27, 28, 30

Chap 16 – 30, hand-out photochemical cycloaddns/electrocyclizations

Chapter 2 – 1, 6, 8, 10, 21, 24, 35

Chapter 15 – 15, 17, 18, 21, 34, 37

Chapter 5 – 1, 2, 3, 7, 9, 11, 12, 14, 15, 19, 21

Chapter 6 – 1, 3, 4, 5, 7, 8, 15, 16, 17, 20

Chapter 7 – 1, 3, 8, TBA

Chapter 8 – To be announced

Chapter 9 - TBA

Chapter 10 - TBA

Chapter 11 – TBA

Chapter 12 - TBA

Chapter 16 - TBA

Student Learning Outcomes. Students will learn the material presented in the reading assignments from *Modern Physical Organic Chemistry.* The following are the major topics covered in your reading assignments.

(1) Fundamentals of chemical bonding in organic molecules. Aromaticity and anitaromaticiy
(2) Structure effects on the stability of organic molecules and reactive intermediates.
(3) Principals of conformational analysis of linear and cyclic alkanes
(4) Acid-base reactions.
(5) Structure effects on the acidity and basicity of organic molecules.
(6) Stereochemistry of organic molecules and the stereochemical course organic reactions.
(7) The use of chemical kinetics to determine the mechanism for organic reactions.
(8) Reaction free energy profiles and surfaces. Kinetic isotope effects. Linear free energy relationships including the Hammett and Brønsted equation
(9) Catalysis of organic reactions; mechanisms and mechanistic imperatives.
(10) Mechanisms for representative organic reactions.

Student Learning Assessment. Your learning will be assessed by your performance on the problem assignments, two midterm examinations and the final examination.

Problem sets	- 10 %
Midterms	- 2 x 25 %
Final	- 40%

The final examination will be comprehensive but weighted toward the final chapters.

Academic Misconduct: Students determined to have engaged in academic misconduct will receive the maximum penalty recommended by the University at Buffalo. The University policies towards academic misconduct are described on the web: Graduate Academic Integrity Policy.