Syllabus: Chem 244-002, Organic Chemistry II - Spring 2017

Instructor: Dr. A. Castro

Lecture: Guttenber Information Technology Center (GITC-1400) T, F: 1-2:25 pm

Office: Tiernan (T) 323A Email: castroa@njit.edu

Office Hours: T, F 11:45 am – 12:45 pm. And by appointment.

Learning Outcomes
Upon completion of the course you should have a facility in accomplishing the following:

1. Assign IUPAC names to given structures and draw correct structures from given names.
2. Draw correct structures of products expected for a given set of reactants.
3. Draw resonance structures of conjugated systems including alkenes, aromatic compounds and carbonyl compounds and relate these structures to reactivity.
4. Write mechanisms for the reactions covered, including electrophilic aromatic substitution, nucleophilic addition to carbonyls, addition-elimination reactions of carboxylic acid derivatives, reactions at the alpha carbon of carbonyls, reactions of amines including the Hoffmann degradation.
5. Identify the structure and reactivity of biological molecules in terms of reactions studied in Organic Chemistry I and II.
6. Use spectroscopic data to determine the structure of molecules.

Textbook: Organic Chemistry by Wade and Simek, 9th edition (2017); Pearson, Glenview, IL.

The textbook is packaged with a study guide, molecular modeling software & workbook.

An inexpensive set of molecular models is highly recommended and models cannot be used during exams.

Course Content: Tentative material to be covered.

Chapter 12, Infrared Spectroscopy and Mass Spectrometry.
Chapter 13, Nuclear Magnetic Resonance Spectroscopy.
Chapter 14, Ethers, Epoxides and Thioethers.

Exam 1: mid-February

Chapter 15, Conjugated Systems, Orbital Symmetry and UltraViolet Spectroscopy
Chapter 16, Aromatic Compounds.
Chapter 17, Reactions of Aromatic Compounds.

Exam 2: mid-March

Chapter 18, Ketones and Aldehydes.
Chapter 19, Amines.
Chapter 20, Carboxylic Acids.

Exam 3: mid-April

Chapter 21, Carboxylic Acid Derivatives.
Chapter 22, Condensations and Alpha-Substitution of Carbonyl Compounds.
Chapter 23-26, Selected Topics. (If time permits)

Final Exam: mid-May

The final exam will be partially cumulative with an emphasis on the understanding of fundamental concepts applied to a variety of systems. Specific questions on the chapters covered after Exam 3 will be emphasized.

Material from Chem 243-Organic Chemistry I will have to be understood and integrated with the material in this course.

Grading:

Exam 1 - 100 points
Exam 2 - 100 points
Exam 3 - 100 points
The lowest of the three exams will be dropped. Make-up exams are not encouraged and will only be given in case of in case of documented medical reasons or emergency reasons. If you must miss an exam, contact me before the exam or immediately after. Make-ups should be taken within the first week of the exam and before graded exams are returned.

Final Exam - 100 points

Online Homework from www.masteringchemistry.com -100 points (Course ID: MCCASTRO90159)
(In order to receive credit for their work, students must complete the assignments by the posted due date. Deadline extensions will only be given in case of documented medical reasons or emergency reasons. Extensions will not be granted because of website difficulties, internet being down, or your own computer problems)

The final grade will be calculated from a total of 400 points. The final exam and the online homework will not be dropped.

Grading Scale:

A (90-100%), B+ (85-89%), B (84-80%), C+ (79-75%), C (74-70%), D (69-65%), F (below 64%)

Attendance: Required and may be taken into consideration when grades are calculated.

Academic misconduct: The NJIT Honor Code will be upheld. Any student that participates in any form of academic dishonesty or cheating will receive a zero for the exam. If a person is caught a second time, a final grade of "F" will be given for the course. Any violations will be brought to the immediate attention of the Dean of Students, who may impose further penalties.