

Chemistry 205-00: Organic Chemistry I (3 credits)

Cedar Crest College (Fall 2009)

Prerequisite: CHM 111 and 112, or the equivalent

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Office Hours: W & F 11:00 – 12:00 p.m., TH & F 1:30-3:00 and other times by appointment.

Class Hours: (Lecture) M, W, F 10:00-10:50

Course Materials: Textbook: McMurry, Organic Chemistry, 7th Ed., & the study guide, an Organic Model Set is also recommended, but not required

Objective: This course will cover an introduction of the chemistry of carbon, including the structure, nomenclature and the chemical, physical, and spectroscopic properties of simple organic compounds. Students will learn the reactivities of compounds such as alkanes, alkenes, alkynes and alkyl halides, being able to predict products given starting materials and to suggest appropriate routes of synthesis. They will understand these reactivities using reaction mechanisms and simple theories of resonance and electrostatic stabilization. Students will also learn to understand the stereochemistry of these compounds and the relationship of the various reactions to the stereochemistry of the reactants and products.

Attendance & Class Protocol: Courses of this type require regular attendance due to the nature of the material; therefore absences will be noted and if it becomes a persistent problem will be discussed. It is also important that you be on time and don't disrupt the class by walking in late. During class please refrain from using electronic communication; this includes cell phones, iPods, and pagers.

Grading: Quizzes (best 4 out of 5): total 15% of course grade
3 hourly exams: 20% each, 60% total of course grade
Final Exam: 25% of course grade (The final must be taken on the date the registrar sets.)

Exams: Three hourly exams will be given: Sept. 21-25, Oct. 26-30, Nov. 23. Material to be covered on each exam will be announced in class, several days in advance of the exam. Exams will be comprehensive are closed book with the honor code in effect. Make-up exams are only permitted for valid reasons. These include illness, emergency, or official work or college-sponsored events. In all cases, documentation may be requested, and the final decision rests with the instructor. Once exams are returned the answer key will be posted. If there is a grading concern you have one week to meet with the instructor to discuss the issue and to have the exam re-evaluated. After that time the grade stands. Exams may be randomly photocopied and if an exam has been modified and then submitted for re-grading this will result in a zero for that exam. Again the honor code applies.

Quizzes: Five announced quizzes will be given throughout the semester, these will be closed book. The lowest one will be dropped so the best 4 scores will be used for the quiz portion of the course.

Homework: Homework will not be corrected. Detailed answers to the recommended text homework problems are in the study guide and will also be posted. However, homework problems will appear on exams, so it would be beneficial for you to work through these problems.

Schedule of Lecture Topics:

Text Chapters:	Topic(s)
1 & 2	These chapters will be covered as a quick overview. You will be responsible for reading and learning most of the material on your own. Valence Theory, M.O. Theory, Lewis structures, formal charge, polarity, condense structures, resonance and Acid-Base Chemistry will be reviewed.
3	The Basics - Functional Groups, Alkanes: Naming and Stereochemistry (Newman Projections)
4	Ring Basics – Cycloalkanes: Naming and Stereochemistry (Chair & Boat Confirmations)
5	Organic Reactions – the real fun of Organic Chemistry – Mechanisms (What, How & Why)
6	Alkenes – Carbon-Carbon Double Bond Compounds, Naming, Stereochemistry, Basic Reactions, Carbocations and Hammond's Postulate
7	Alkenes – Reactions & Synthesis: Addition & Elimination Reactions, Oxidation & Reduction reactions, Radical Reactions (Polymers & Biological)
8	Alkynes - Carbon-Carbon Triple Bond Compounds, Naming, Synthesis of, Reactions of
9	Stereochemistry – Chirality, Enantiomers: Optical Isomers, R & S Configurations, Racemic Mixtures
10	Organohalides – Naming, Synthesis of, Reactions of (this Chapter is the lead-in to one set of Key Reactions...)
11	Nucleophilic Substitution & Elimination Reactions – Kinetics, Effects of: Sterics, Leaving Group, Nucleophile and Solvent, Zaitsev's Rule

To be continued in Orgo II