



DEPARTMENT OF SCIENCE
COURSE INFORMATION SHEET FOR
CHE241 – ORGANIC CHEMISTRY I

All members of the Science Department at Clinton Community College use the respective course templates as a basis for their course syllabi. Faculty may, at their discretion, change the order of the course content or add course content.

COURSE NUMBER AND TITLE: CHE241 – Organic Chemistry I

COURSE SECTION: *TBA*

CONTACT HOURS: 5 **CREDIT HOURS:** 4

SEMESTER AND YEAR: *TBA*

INSTRUCTOR'S NAME, TELEPHONE NUMBER, EMAIL ADDRESS, OFFICE NUMBER, AND OFFICE HOURS: *TBA*

I. COURSE DESCRIPTION:

This course is the first semester of a two-semester sequence of basic organic chemistry covering saturated, unsaturated and aromatic hydrocarbons, alkyl halides, their reactions, structure, reaction mechanisms, stereochemistry, mass spectrometry, and spectroscopy. There are three hours of lecture and one two-hour laboratory per week.

II. PREREQUISITE: CHE112 – General Chemistry II or its equivalent

III. COURSE OBJECTIVES:

As the result of instructional activities, students will be able to:

1. identify hybridization, use VSEPR, calculate formal charge, and draw chemical structures
2. name organic compounds using IUPAC
3. identify functional groups & recognize isomers
4. identify reaction types and polar reaction mechanisms
5. identify nucleophilic and electrophilic centers
6. calculate degrees of unsaturation and predict carbocation stability and rearrangements
7. determine HX and halogens to alkenes and alkynes
8. determine *R,S* sequence in organic molecules
9. identify, draw the structure of, and synthesis alkyl halides
10. distinguish S_N2 reactions, substitution and elimination reaction
11. interpret NMR, IR, MS & UV spectroscopy
12. identify aromaticity, nucleophilic & electrophilic aromatic substitution
13. identify alcohols, Grignard reactions, and acid based dehydration

IV. REQUIRED TEXTBOOK AND MATERIALS:

REQUIRED TEXTBOOK:

1. Organic Chemistry, 8th edition; Solomons and Fryle. John Wiley & Sons, Inc. ISBN# 0-471-41799-8.
2. Study Guide and Solution Manual Organic Chemistry, 8th edition; Solomons and Fryle. John Wiley & Sons, Inc. ISBN# 0-471-21507-4.

REQUIRED MATERIALS:

1. Safety glasses are required for all on-campus sections.
2. Molecular model kit (or CD from CHE 112 – Kotz)

V. METHODS OF INSTRUCTION/COURSE ORGANIZATION: *To be determined by the respective instructor.*

VI. ATTENDANCE PROCEDURE (INCLUDING MAKEUP POLICY): *To be determined by the respective instructor.*

VII. BIBLIOGRAPHY OF READINGS (IF APPLICABLE): *To be determined by the respective instructor.*

VIII. METHODS OF EVALUATION (INCLUDING THE CALCULATION OF COURSE GRADE): *To be determined by the respective instructor. The methods of evaluation shall include tests (test types, length and weight of each), papers (weight of each), projects (weight of each), and other forms of evaluation (weight of each).*

IX. GRADING SCALE: *To be determined by the respective instructor. The grading scale shall indicate what numerical scores correspond to the following grades: A, A-, B+, B, B-, C+, C, C-, D+, D, and F.*

Please Include: If you have, or suspect you may have, any type of disability or learning problem that may require extra assistance or special accommodations, please speak to me privately after class or during my office hours as soon as possible so I can help you obtain any assistance you may need to successfully complete this course. You should also contact Laurie Bethka, Room 420M in the Academic Assistance Center, for further assistance.

X. GENERAL TOPICS OUTLINE:

1. Carbon Compounds & Chemical Bonds
2. Functional Groups; Intermolecular Forces & Infrared Spectroscopy
3. Organic Reactions: Acids & Bases
4. Alkanes: Nomenclature, Conformational Analysis & Synthesis
5. Stereochemistry; Chiral Molecules
6. Ionic Reactions – Nucleophilic Substitution & Elimination of Alkyl Halides
7. Alkenes & Alkynes I: Synthesis and Elimination Reactions of Alkyl Halides
8. Alkenes & Alkynes II: Addition Reactions
9. MS, NMR & IR Spectroscopy: Tools for Structural Determination

XI. ACADEMIC INTEGRITY: Academic honesty is expected of all Clinton Community College students. It is academically dishonest, for example, to misrepresent another person's work as one's own, to take credit for someone else's work or ideas, to accept help on a test, to obtain advanced information on confidential test materials, or to intentionally harm another student's chances for academic success.

XII. COURSE CONTINUITY PLAN: In the case that the college officially closes because of an emergency which causes a short term disruption of this course, we will utilize e-mail to continue this course in the short term (1-3 weeks). All students need to utilize their campus e-mail to receive course related information.