

CHEM 233 Organic Chemistry 1**Credit Hours:** 3**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 0

Catalog Course Description: Study of characteristic reactions, synthesis, and stereochemistry of major classes of organic compounds using a mechanistic approach. Classes of compounds studied include alkanes, alkyl halides, alkenes, and alcohols. Mechanisms studied include: free radical halogenation, nucleophilic substitution, nucleophilic addition, and electrophilic addition.

Pre-requisites: CHEM 115, CHEM 115L; CHEM 116, CHEM 116L

Co-requisites: CHEM 235

Course Learning Outcomes:

- To prepare students for successful entry into professional programs (medicine, dentistry, pharmacy, engineering et al.)
- To assure students may successfully transfer to a four-year institution having completed the first two years of a four-year degree program in chemistry.

Topics to be studied:

- Bonding, electron structure, hybridization, acid and bases
- Functional group identification, organic nomenclature
- Structure and reactions of alkenes. Electrophilic addition mechanisms
- Alkynes, introduction to synthesis
- Electron delocalization, dienes, resonance
- Stereochemistry, 3D understanding of organic molecules, stereochemical consequences
- Reactivity of alkanes free radical mechanisms
- Reactions at the sp³ hybridized carbon, substitution and elimination
- Aromaticity and reactions of benzene

Relationship of Course to Program or Discipline Learning Outcomes:

Relationship of Course to Science Learning Outcomes:	
Students will learn the process and reasoning behind the Scientific Method and be able to conduct experiments that meet the requirements of the model.	X
Students exhibit the basic safety-related rules and regulations of working in the lab.	X
Students be able to recount the basic safety tenants associated with a specific scientific discipline.	X
Students will become proficient at Science Writing.	X
Students will recognize and identify the applications of their specific discipline in the 'real world.'	X

Students will accurately recount important milestones in the history of scientific inquiry in their discipline.	X
10/30/2017	

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
10/30/2017	

Special requirements of the course:

Additional information:

Prepared by:

Date: 10/30/2017