CHEM 235 Organic Chemistry 1 Lab
Credit Hours: 1
Scheduled hours per week
Lecture: 0
Lab: 3
Other: 0

Catalog Course Description: An introduction to microscale techniques of organic chemistry preparation and purification, this lab is designed to be taken concurrently with CHEM 233. Techniques studied will be re-crystallization, distillation, extraction and preparation of simple aliphatic compounds.

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

Co-requisites: CHEM 233

Course Learning Outcomes:
- To teach students lab safety and micro-scale organic synthetic techniques
- To help students keep correct scientific notebooks
- To introduce students to physical separation and purification techniques
- To assist students in learning how to use physical properties to identify organic materials
- To do simple reactions involving alkenes, alkanes and alkyl halides

Topics to be studied:
- Safe working practices, chemical literature and micro-scale glassware
- Physical property measurements
- Recrystallization techniques
- Extraction techniques (properties of acids and bases)
- Distillation and reflux techniques
- Isolation of a natural material (purification by sublimation)
- Chromatography
- Addition reactions involving alkenes
- Free radical halogenation of alkanes
- Reactions of alkyl halides

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	X

in their discipline.	
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.	X
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