

Chemistry - Student Learning Outcomes

CHEM 100	Introduction To Chemistry	1. calculate English and metric unit conversions and measurements using dimensional analysis. (ISLO4)
		2. write symbols for elements and know common ionic charges. (ISLO2)
		3. derive and write formulas and names for chemical compounds. (ISLO2)
		4. write and balance common chemical equations and identify reaction types. (ISLO4)
CHEM 160	Introduction to General, Organic & Biological Chemistry	1. calculate drug dosage using English and Metric unit interconversions and dimensional analysis. (ILO4)
		2. identify different classes of organic compounds. (ILO2)
		3. identify different functional groups in organic compounds. (ILO2)
		4. write a research paper on biochemical disorders. (ILO4)
		5. discuss the geographical/ethnic distribution of biochemical disorders. (ILO5)
CHEM 200	General Inorganic Chemistry I	1. perform dimensional analysis calculations as they relate to problems involving percent composition and density. (ISLO2)
		2. write chemical formulas, and name inorganic compounds. (ISLO2)
		3. relate chemical equations and stoichiometry as they apply to the mole concept. (ISLO2)
		4. identify the basic types of chemical reactions including precipitation, neutralization, and oxidation-reduction. (ISLO4)
		5. knowledge of atomic structure and quantum mechanics and apply these concepts to the study of periodic properties of the elements. (ISLO4)
CHEM 202	General Inorganic Chemistry II	1. examine and develop concepts of covalent bonding, orbital hybridization and molecular orbital theory. (ISLO4)
		2. identify and perform organic addition and elimination reactions. (ISLO2)
		3. compare and analyze Thermodynamics properties and differentiate between spontaneity and maximum useful work heat and Free energy. (ISLO2)
		4. develop ideas of Chemical Kinetics from experiments using concentration dependence then determining rates and rate law. (ISLO4)
		5. recognize oxidation-reduction reactions in electrolytic cells, sacrificial anodes, the use of the Nernst equation, and how to balancing red-ox reactions. (ISLO2)
CHEM 204	Organic Chemistry I	1. demonstrate knowledge of covalent bonding and molecular geometry. (ISLO4)
		2. analyze the structure, nomenclature, physical properties and synthesize alkanes and cycloalkanes. (ISLO2)
		3. evaluate and measure the difference between organic acids and bases. (ISLO2)
		4. demonstrate knowledge of stereochemistry and its effects on molecular properties. (ISLO4)
		5. analyze the structure, nomenclature, physical properties and synthesize alkenes. (ISLO4)
CHEM 206	Organic Chemistry II	1. analyze the structure, nomenclature, physical properties and synthesize aldehydes and ketones. (ISLO4)
		2. analyze the structure, nomenclature, and physical properties and synthesize carboxylic acids. (ISLO2)
		3. identify and write the steps to synthesize reactions including esters, enolates, enamine
		4. develop and recognize the concept of aromaticity by the analysis of Aromatic compounds. (ISLO4)
		5. determine the structure, nomenclature, physical properties and synthesize amines. (ISLO4)