

COURSE SYLLABUS

Course Title:	General Chemistry I	Date submitted:	November 2017 (AAC:17-61)
Department:	Mathematics and Science		
Curriculum:	Chemistry		
Course Descriptors: Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.	Course Code: (eg. ACC 101)	CHE*121	Prerequisites: C- or better in Intermediate Algebra (MAT*137) OR C- or better in Elementary Algebra/Intermediate Algebra Combined (MAT*139). Intermediate Algebra for Liberal Arts (MAT*137L) is <u>NOT</u> sufficient for entry into this course.
	Course Type:	X	
	A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: M: Seminar Internship P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/Clinical/Lab Z: Combined Lecture/Studio		
	Elective Type:	G/LAS/S	
	E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science		
	Credit Hours:	4	
	Developmental: (yes/no)	No	
	Contact Hours:	Lecture: 3	
		Clinical: 0	
		Lab: 3	
Studio: 0			
Other: 0			
	TOTAL: 6	Corequisites: None	
Class Maximum:	20		
Semesters Offered:	F/Sp/Su		
		Other Requirements: Safety glasses, scientific calculator, technology skills	
Catalog Course Description:	The fundamental principles, theories, and laws of chemistry are studied. Topics include: atomic theory and the structure of the atom, the aggregated states of matter, kinetic molecular theory, chemical bonding, stoichiometry, periodicity, solutions and colloids. Lecture and laboratory.		
Topical Outline: List course content in outline format.	Lecture: 1. Science and scientific method 2. Measurement, units, accuracy and significant figures 3. Atomic theory, elements, compounds and mixtures 4. Chemical formulae and equations 5. The mole, molecular and formula weights and gram molecular and gram formula weights 6. Atomic and molecular models 7. Molecular geometry 8. Thermochemistry 9. Ideal gas laws		

	<p>10. Solutions and molarities</p> <p>Laboratory:</p> <ol style="list-style-type: none"> Densities of liquids and solids Resolution of matter into pure substances, paper chromatography Determination of chemical formula Identification of a compound by mass relationships Boyle's Law Atomic spectrum of hydrogen Alkaline earths and halogens Geometrical structure of molecules Calorimetry Vapor pressure of a liquid Molar mass by freezing point depression Classification of chemical substances Acid-base titration Structure of crystals
<p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p>Upon successful completion of this course, the student will be able to do the following:</p> <ol style="list-style-type: none"> explain the concepts of significant figures and the relationships in the metric system explain an overview of the atomic theory describe the law of conservation of mass explain the concept of the mole distinguish the difference between ions and atoms, cations, and anions apply Avogadro's number to chemical problems correctly determine chemical formulae and equations apply the laws of thermochemistry and the heat of bond formation in appropriate problems describe the quantum theory differentiate between ionic and covalent bonding distinguish between polar and nonpolar bonds recognize organic compounds explain the methods of expressing solution concentrations <p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i> N/A</p> <p>COMPETENCY FULFILLED: Scientific Knowledge & Understanding (SCKX) OR Scientific Reasoning (SCRX)</p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<p>Assessment will be based on the following criteria:</p> <p>quizzes examinations laboratory reports</p>
<p>Instructional Resources:</p>	<p>Required: Scientific calculator Desired: Software</p>

List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.	
Textbook(s)	Brown, <i>Chemistry: Central Science</i> , 10 th ed.; Pearson Education Slowinski, <i>Chemical Principles in the Laboratory</i> , 8 th ed.; Thomson <i>Chemical Periodic Table</i> , 8 th ed.; Permchart