COURSE SYLLABUS (2 Page)

Course Number: CHEM 1251
Course Name: General Chemistry I

Credits and Contact Hours: 3

Instructor: Staff

Textbook: Chemistry (Ch. 1-9), UNCC Custom Edition by Burdge, J.R., 3rd Edition. McGraw-Hill. (CHEM 1251)
or
Chemistry (Ch. 1-19), UNCC Custom Edition by Burdge, J.R., 3rd Edition. McGraw-Hill. (CHEM 1251/2)

Catalog Description: A principles-oriented course for science and engineering majors. Fundamental principles and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements. Topics include: measurements, chemical nomenclature, reactions and stoichiometry, thermochemistry, atomic structure, periodicity, bonding, and molecular structure. Students may attempt CHEM 1251 a total of three times. Withdrawing from the course after the Add/Drop deadline constitutes an attempt as does receiving any letter grade. Credit will be given for only one course: CHEM 1111 , CHEM 1203 , or CHEM 1251 . Three lecture hours and one Problem Session hour per week.
Most Recently Offered (Day): Spring 2016, Fall 2015, Summer 2015
Most Recently Offered (Evening): Spring 2016, Spring 2015, Spring 2014

Pre-Requisites/Co-Requisites: MATH 1100 with grade of C or above (or equivalent test score) or CHEM 1200 (which is recommended for students who have not had chemistry in high school) with grade of C or above.

Course is: Required (R)

Goals: To develop knowledge of fundamental principles and laws of chemistry; the relationship of atomic structure to physical and chemical properties of the elements.

Student Outcomes Addressed:
A. an ability to apply knowledge of mathematics, science, and engineering

Course Topics:

- Units
- Properties of Matter
- Density
- Dimensional Analysis
- Significant Figures
- History of Atomic Theory
- Subatomic Particles
- Molecular Formulas
- Nomenclature
- Avogadro's Number
- Mass-Mole Conversions
- Stoichiometry
- Limiting Reactants
- Electrolytes
- Concentration
- Precipitation/Redox/Acid-Base Reactions
- Titrations
- Heat and Work
- Enthalpy
- Specific Heat and Calorimetry
- Hess's Law
- Waves
- Photons and Photoelectric Effect
- Bohr Model
- Quantum Mechanical Model
- Effective Nuclear Charge
- Atomic/Ionic Radius
- Ionization Energy
- Electron Affinity
- Electronegativity and Bonding
- Lattice Energy
- Lewis Structures
- VESPR Model
- Molecular Polarity
- Hybrid Orbital Model
- Sigma and Pi Bonding