

Course Syllabi

1. CCFF-00032 GENERAL CHEMISTRY

2. 144 credits hours.

3. Bibliography

- Fundamentos de Química , Raymond Chang, 2013
- Química la Ciencia Central, Brown Theodore L., cols., 2009

4. Specific Course Information

- a. This subject presents fundamental knowledge of chemistry, working material and learning methodology is process-oriented and emphasizing the student's discovery of the most important concepts. It is important to foster knowledge by learning chemistry and instruct it on the role it plays in nature and in today's society with its growing interest in environmental and industrial issues. It identifies chemical elements in periodic table, different types of inorganic nomenclature, properties. RA1 Plants correctly the name and formula of the different inorganic compounds and solves the stoichiometric problems i.e. with chemical reactions applying different alternatives according to the existing techniques. RA1 Identifies the gaseous elements, the laws of the ideal gases, raises and solves correctly exercises where the laws of gases are applied. RA1. Performs laboratory practices in where he manipulates both equipment, materials, reagents, makes decisions, executes different experiments giving the corresponding conclusions with criteria complementing his theoretical study. RA6

5. Learning Objectives of the Course

- a. The aim of this subject is to bring the student of Industrial Engineering closer to the concepts of the different chemical phenomena, through basic knowledge related to chemical processes that have numerous applications in industry, the environment and in everyday life. In addition, to have fundamental notions of work in the laboratory as preparation for other subjects and practices that require these skills.
- To identify the chemical elements in the periodic table, its properties, symbols
 - Identify the gaseous elements to be able to solve exercises corresponding to the laws of gases
 - Solve problems with stoichiometry in chemical reactions by applying different techniques
 - Identify different types of chemical reactions
 - Explain, define and apply different chemical concepts such as (enthalpy, heat, chemical balances, concentrations, solute, solvent, among others).
- b. Learning Outcomes
- It identifies the gaseous elements, the laws of ideal gases, raises and correctly solves exercises where the laws of gases are applied. ra1.
 - It correctly raises the name and formula of the different inorganic compounds and solves the stoichiometric problems, i.e. chemical reactions applying different alternatives according to the existing techniques. ra1
 - Identify chemical elements in periodic table, different types of inorganic nomenclature, properties. ra1
 - Performs laboratory practices where he manipulates both equipment, materials, reagents, makes decisions, executes different experiments giving the corresponding conclusions with criteria complementing his theoretical study. ra6

6. Course Topics

- Unity 1: inorganic chemical definitions formulation of inorganic compounds
- Unity 2: concept stoichiometry applications different relationships.
- Unity 3: overreactive reagent restraint. application performances
- Unit 4: concept solutions identification physical and chemical concentration units
- Unit 5 gas
- Unit 6 acids and ph scale concept base
- Unit 7 velocity and equilibrium in chemical reactions
- Unity 8 solid and liquid state