CHEM 116 Fundamentals of Chemistry 2

Credit Hours: 4

Scheduled hours per week

Lecture: 3
Lab: 2
Field : Experien ce : N/A

Catalog Course Description: Continuation of CHEM 115. Chemical equilibrium, Ionic equilibrium, electrochemistry, and organic chemistry. (3 lecture hours; 2 lab hours per week) (Pre-requisite: CHEM 115)

Pre-requisites: CHEM 115 / CHEM 115 L

Co-requisites: CHEM 116L

Course Learning Outcomes (CLO):

- Adhere and implement safety rules with proper operation of instruments and equipment in executing scientific experiments accurately in the laboratory environment.
- Record experimental observation for quantitative and qualitative data analysis with conclusions to write lab reports following standard scientific guidelines.
- Build up independent decisions and collaborative working skills.
- Understand and apply the concepts of CHEM 116 course in practical applications for quantitative and qualitative measurements.
- Apply mathematical and algebraic skills in problem solving.
- Explain the mechanism and progress of chemical reactions based on the concepts of chemical kinetics and thermodynamics.
- Understand the concepts and solve problems of chemical and acid-base equilibrium phenomena in different chemical reactions.
- Understand and explain the properties of solutions and their effects in chemical reactions.
- Explain the mechanism of electrochemical reactions through problem solving.
- Understand the concepts and solve problems in nuclear chemistry
- Explain the trends in chemical and physical properties of non-metal chemistry.
- Understand the structures, physical and chemical properties of solids and molten materials.

Topics to be studied:

- Liquids and intermolecular forces
- Solids and modern materials
- Properties of solutions
- Chemical kinetics
- Chemical equilibrium
- Acid-base equilibria
- Additional aspects of aqueous equilibria
- Chemistry of the environment

- Chemical thermodynamics
- Electrochemistry
- Nuclear chemistry
- Chemistry of nonmetals

Relationship of Course to Program Learning Outcomes (PLO) or Discipline Learning Outcomes:
Check if approved as: X Foundational Learning Course □ Reinforcement Learning Course

Special requirements of the course: N o n e

sAdditional information: None

Prepared by: Nelum Karunathilake

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