

Course-3 Title: Chemistry**Course Code: CHE 111****Credit: 3.00****Contact Hour: 3 per week****Total marks: 100**

11.1 Rationale: A computer scientist or engineer may choose to be expert in cheminformatics or computational chemistry. Therefore, he or she should have a sound knowledge and deep understanding of chemistry.

11.2 Objectives:

1. Know the periodic table.
2. Understand the characteristics of the noble gases and their behaviors.
3. Identify and compare among different chemical bonds.
4. Understand chemical kinetics.

11.3 <i>Learning Outcomes</i>	11.4 <i>Course Content</i>	11.5 <i>Teaching / Learning Strategy</i>	11.6 <i>Assessment Strategy</i>
- explain Atomic structure, quantum numbers, electronic configuration	Atomic structure, quantum numbers, electronic configuration	Lecture, Assignment	Short answer, Essay, Assignment
- identify elements in periodic table	periodic table	Lecture, Assignment	Short answer, Essay
- explain the properties and uses of noble gases	Properties and uses of noble gases	Lecture, Assignment	Short answer, Essay
- identify and explain chemical bonds - compare chemical bonds	Different types of chemical bonds and their properties	Lecture, Assignment	Short answer, Essay
- identify and explain molecular structures	Molecular structures of compounds	Lecture, Assignment	Short answer, Essay
- explain organic reactions - identify and explain different types of solutions and their compositions - compare different types of solutions - explain the properties of dilute solutions.	Selective organic reactions, Different types of solutions and their compositions. Properties of dilute solutions	Lecture, Assignment	Short answer, Essay
- define phase rule - explain phase rule and phase diagram	Phase rule, phase diagram of mono component system.	Lecture, Assignment	Short answer, Essay
- explain thermo chemistry and chemical equilibrium - apply chemical kinetics - explain ionizations of water and pH	Thermo chemistry, chemical kinetics, chemical equilibrium, Ionizations of water. and pH concept	Lecture, Assignment	Short answer, Essay
- explain electrical properties of solutions	Electrical properties of solutions	Lecture, Assignment	Short answer, Essay

RECOMMENDED BOOKS AND PERIODICALS**References:**

As per course teacher's recommendation