

CH-437 Physical Chemistry of Solutions

Credit Hours: (3-0)

Pre-requisite: Nil

Course Objectives

1. This course aims to cover topics of Physical Chemistry related to solutions. Students will get to know in details about Solutions

Course Contents

a. Solutions:

- i. Introduction to solutions and their types.
- ii. Concentration units & their relation with each other.
- iii. Partial molar quantities & their determinations.

b. Ideal / Dilute Solutions

- i. Introduction to Raoult's law and Henry's law.
- ii. Thermodynamics of ideal solutions.
- iii. Colligative Properties (Boiling point elevation. Freezing point depression & osmotic pressure).

c. Real Solutions

- i. Introduction
- ii. Concepts of fugacity, activity & activity coefficient & their determination.
- iii. Phase equilibria.

d. Solutions of Electrolytes

- i Deviation from ideality.
- ii. Colligative properties
- iii. Ionic strength.
- iv. Debye-Huckel limiting law & its application.
- v. Conductance, specific conductance & its applications.

Recommended Books

1. Physical Chemistry by Ira N Levine

2. Physical Chemistry by Atkins
3. Physical Chemistry by Joseph H. Noggle
4. Fundamentals of physical chemistry by S.H. Maron & J.B. Lando.