Semester Lecture Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim-Goa		
Name of Faculty: Dr. Dattaprasad D Narulkar	**Subject:** Chemistry	
Paper code: CHC-111 (Basic concept in Chemistry)	**Program/Course: F.Y. B.Sc. (minor)**	**Division: -**
Academic year: 2024 - 2025	**Semester: I**	**Total Lectures: 30 (Theory)**

Course Objectives:

1. **To discuss different theories of periodic table and classification of elements and trends in periodic table.**
2. **To explain different acid-bases theories**
3. **To define the terms and state laws involved in thermodynamics**

Course Learning Outcome:

1. **Student will be able to explain theories and trends in periodic table and the classification of elements.**
2. **Student will be able to compare, distinguish and apply different acid-base theories.**
3. **Student will be able to define the terms and state laws involved in thermodynamics**

Month	Lectures From	Lectures To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/Assignment	ICT Tools	Reference books
July	1/07/2024	6/07/2024	02	**Introduction to the Periodic Table** Development of the periodic table- Dobereiner's Triads, Newland's Law of Octaves		Smart board	Ref 1 and 2
July	8/07/2024	13/07/2024	02	Newland's Law of Octaves, Modern periodic table		Smart board	Ref 1 and 2
July	15/07/2024	20/07/2024	02	Modern periodic table, (Theories and limitations of Mendeleev's periodic table and Modern periodic table).		Smart board	Ref 1 and 2
July	22/07/2024	27/07/2024	02	(Theories and limitations of Mendeleev's periodic table and Modern periodic table), Classification of the elements into s,p,d and f -block elements on the basis of electronic configuration (Continued)		Smart board	Ref 1 and 2
July-August	29/07/2024	03/08/2024	02	Classification of the elements into s,p,d and f -block elements on the basis of electronic configuration (Continued)		Smart boar	Ref 1 and 2
August	05/08/2024	10/08/2024	02	Trends in the periodic table (atomic and ionic size)	Assignment on periodic table	Smart board	Ref 1 and 2
August	12/08/2024	17/08/2024	02	**Acid- Base Theories** Arrhenius Concept, Bronsted Theory		Smart board	Ref 1 and 2

August	19/08/2024	24/08/2024	02	Bronsted Theory (continued), The Lux – Flood Solvent Systems		Smart board	Ref 1 and 2
August	26/08/2024	31/09/2024	02	Solvent System theory		Smart board	Ref 1 and 2
September	02/09/2024	05/09/2024	02	Lewis Concept of Acids and Bases. (Theories and limitations)	Examples of acids and bases and categorization based on various theory	Smart board	Ref 1 and 2
September	06/09/2024	12/09/2024		Ganesh Chaturthi break		Smart board	Ref 1 and 2
September	13/09/2024	21/09/2024	02	**Thermodynamics I**: Definition of thermodynamic terms, system, surroundings etc. Types of thermodynamic systems and thermodynamic processes.			
September	23/09/2024	28/09/2024	02	Intensive and extensive properties. Concept of heat and work, first law of thermodynamics,		Smart board	Ref 1 and 2
October	30/10/2024	05/10/2024	02	definition of internal energy and enthalpy. Heat capacity –heat capacities at constant volume and at constant pressure and their relationship,		Smart board	Ref 1 and 2

October	07/10/2024	12/10/2024	02	calculation of w, q, dU & dH for the expansion of ideal gases under isothermal and reversible conditions (Numerical problems)		Smart board	Ref 1 and 2
October	14/10/2024	19/10/2024	02	Solutions of liquids in liquids, Raoult's law and deviation from Raoult's Law		Smart board	Ref 1 and 2
October	21/10/2024	22/20/2024	01	Revision			

Reference Books:

1. J. D. Lee, *Concise Inorganic* Chemistry, 5th Edn. Wiley India. 2003.

2. P. W. Atkins, T. L. Overton, J. P. Rourke, M. T. Weller & F. A. Armstrong, *Shriver & Atkins' Inorganic Chemistry*, 5th Edn.; Oxford University Press. 2010..

3. F. A. Cottton, G. Wilkinson and P. L. Gaus, *Basic Inorganic Chemistry.* 3rd Edn. Wiley India. 2007.

4.. B. R. Puri, L. R. Sharma and K. C. Kalia, *Principles of Inorganic Chemistry,* 33rd Edn, Vishal Publishing Co. 2020.

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*** Assessment Rubrics**

Component	Max Marks
ISA 1	10
ISA 2	10
ISA 3	10
Semester End Exam	80
Total	100

*Best two ISA will be considered