Practical Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa		
Name of Faculty: Mr. Sujay S. Sawant	**Subject: Physical Chemistry**	
Paper code: CHC-108	**Program: T.Y.BSc**	**Division:**
Academic year: 2024 - 2025	**Semester: VI**	**Total Practical/Labs: 10 (60 Hours)**
Credits: 2		

Course Objectives:

- To apply theoretical concepts to experiments.
- To acquire hands on training in potentiometry, pH metry, Chemical kinetics, conductometry etc

Expected Course Outcome:

At the end of the course students will be able to:

CO1: Understand the concepts of adsorption isotherms and activation energy, solubility product.

CO2: Develops skills of working and set up of electrochemical cells (potentiometry, pH metry and conductometry)

CO3: Solve numerical on standard electrode potential and verify the graph of adsorption isotherms.

Student Learning Outcome:

At the end of the course students will be able to:

1. Understand the concepts of adsorption isotherms and activation energy, solubility product.
2. Develops skills of working and set up of electrochemical cells (potentiometry, pH metry and conductometry)
3. Solve numerical on standard electrode potential and verify the graph of adsorption isotherms.

Month	Practical/Labs Scheduled Date	No. of Practical /Labs planned	List of Experiments	Reference books
December	11-12-2024	2 (Batch II)	To study the Kinetics of ethyl acetate by NaOH at two different temperatures and hence determine the energy of activation.	[1,2]
January	08-01-2025	2 (Batch II)	To determine the dissociation constant of a weak dibasic acid using pH metry.	[1,2]
	15-01-2025	2 (Batch II)	Conductometric titration of Lead Nitrate against Sodium Sulphate and to determine the solubility of Lead Sulphate.	[1,2]
	22-01-2025	2 (Batch II)	Preparation of aniline hydrochloride and to determine hydrolysis and hydrolysis constantof aniline hydrochloride.	[1,2]
	29-01-2025	2 (Batch II)	To determine the percentage concentration and strength of sulphuric acid, acetic acid and copper sulphate against 0.1 M NaOH by conductometric titration.	[1,2]
February	05-02-2025	2 (Batch II)	Verification of Debye-Huckel-Onsager equation to dilute solutions of KCl by conductometric method.	[1,2]
	12-02-2025	2 (Batch II)	Adsorption of Oxalic acid by charcoal and verifying Freundlich adsorption isotherm.	[1,2]
	19-02-2025	2 (Batch II)	Adsorption of Oxalic acid by charcoal and verifying Freundlich adsorption isotherm.	[1,2]
	26-02-2025	2 (Batch II)	To investigate the influence of Ionic strength on the rate constants between Potassium Persulphate and Potassium Iodide.	[1,2]

March	05-03-2025	2 (Batch II)	To investigate the influence of Ionic strength on the rate constants between Potassium Persulphate and Potassium Iodide.	[1,2]
	12-03-2025	2 (Batch II)	Using vibrational-rotational spectra of NO molecule: a. Assign the rotational lines to various transitions. b. Calculate i) the value of B0 and B1, for R and P branches of spectra. ii) Vibrational frequency and iii) Inter nuclear distance	[1,2]
	19-03-2025	2 (Batch II)	Using vibrational-rotational spectra of CO molecule. a. Assign the rotational lines to various transitions. b. Calculate i. The value of B0 and B1, for R and P branches of spectra. ii. Vibrational frequency and iii. Inter nuclear distance	[1,2]
	26-03-2025	2 (Batch II)	Revision	[1,2]
April	02-04-2025	2 (Batch II)	Revision	[1,2]
	09-04-2025	2 (Batch II)	Journal Correction and Certification	

References:

1. Systematic experimental Physical Chemistry by W. Rajbhoj, T.K. Chondhekar, Anjali publication.
2. Senior Practical Physical chemistry by B.D. Khosla, V.C. Garg, Adarsh Gulati, published by R. Chand and Co

* Assessment Rubrics	
Component	
ISA	20
Semester End Exam	80
Practical	50
Total	150