

Practical Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa		
Name of Faculty: Dr. Sudesh M. Morajkar	Subject: Concepts in Organic and Analytical Chemistry (Major)	
Paper code: CHC 201	Program: S.Y.BSc.	Division:
Academic year: 2026 - 2027	Semester: III	Total Practical/Labs: 15 (60 hours)
Credits: 1+2		
Course Objectives: - To apply theoretical concepts to experiments. - To evaluate data for central tendency and dispersion.		
Expected Course Outcome: At the end of the course students will be able: CO1: State and explain fundamental concepts, definitions, and reactions related to key organic compounds and analytical techniques including gravimetric and titrimetric analysis, solvent extraction, and UV-Visible spectroscopy. CO2: Describe the basic principles, preparation methods, and reactions of key organic compounds, and describe the fundamental concepts of analytical techniques such as gravimetric and titrimetric analysis, solvent extraction, and UV-Visible spectroscopy. CO3: Apply the concepts of organic chemistry to synthesize and solve problems related to the preparation and reactions of key organic compounds, to apply analytical procedures, statistical tools, spectroscopic methods to perform qualitative and quantitative analysis of chemical substances and analytical techniques. CO4: Analyze the chemical behavior of major organic functional groups and apply analytical techniques to interpret data, evaluate accuracy and precision, and differentiate instrumental and classical approaches in chemical analysis.		
Student Learning Outcome: At the end of the course students will be able: LO1: Understand the Scope and importance of analytical chemistry and principles involved in Classical methods of analysis, UV-Visible spectrophotometric and Solvent extraction. LO2: Understand and Solve numericals based on statistical data obtained from experimental results. LO3: Perform extraction and separation of chemical mixtures using separation funnel.		

Month	Practical/Labs Scheduled Date	No. of Practical /Labs planned	List of Experiments	Reference books
June	30-06-26	1 (Batch IV)	Titration of supplied calcium chloride solution with 0.01M EDTA solution.	[1-2]
July	07-07-26	1 (Batch IV)	Titration of given 0.1N NaOH solution using primary standard 0.1N Succinic acid solution.	[1-2]
	14-07-26	1 (Batch IV)	Determine $\lambda_{\max}$ for 0.1M $K_2Cr_2O_7$ by spectrophotometry.	[1-2]
	21-07-26	1 (Batch IV)	Verify Beer's law using $KMnO_4$ by colorimetric method and determine molar extinction coefficient.	[1-2]
	28-07-26	1 (Batch IV)	Estimation of Cu^{2+} as $[Cu(NH_3)_4]^{2+}$ complex in the given unknown solution using Calibration curve method.	[1-2]
	04-08-26	1 (Batch IV)	Separation of mixture of benzoic acid and β -naphthol using ethyl acetate by solvent extraction method.	[1-2]
August	11-08-26	1 (Batch IV)	Determination of partition coefficient of acetic acid in water and n-butyl alcohol.	[1-2]
	18-08-26	1 (Batch IV)	Extraction of Caffeine from tea leaves decoction using dichloromethane as organic solvent.	[1-2]
	25-08-26	1 (Batch IV)	Organic preparations List of organic preparations to be performed. Purification by recrystallization, calculation of % yield and determination of melting point. Oxime of Cyclohexanone.	[1-2]

	01-09-26	1 (Batch IV)	Organic preparations List of organic preparations to be performed. Purification by recrystallization, calculation of % yield and determination of melting point. Oxidation of Toluene to benzoic acid using KMnO_4 .	[1-2]
September	08-09-26	1 (Batch IV)	Organic qualitative analysis	[1-2]
	15-09-26	1 (Batch IV)	Organic qualitative analysis	[1-2]
	22-09-26	1 (Batch IV)	Organic qualitative analysis	[1-2]
	29-09-26	1 (Batch IV)	Organic qualitative analysis	[1-2]

References:

[1] A.I. Vogel, A., R. Tatchell, B. S. Furniss, A.J. Hannaford, Vogel's Textbook of Practical Organic Chemistry, 5th Ed., Prentice Hall; 2011.

[2] J. Basset, Vogels textbook of quantitative inorganic analysis.

* Assessment Rubrics	
Component	Max Marks
ISA	15
Practical	25
Semester End Exam	60