

Name of the college: Government college of Arts Science and commerce Sanquelim Goa.				
Name of Faculty: Dr. Sagar Narayan Patil		Subject: Chemistry		
Paper code: CHC-100; Fundamentals of Chemistry		Program: F.Y.B.Sc		Division: -Batch 2
Academic year: Dec 2024- 2025		Semester: II		Total Practical's/Labs: 15
Credits: 01				
Course Objectives:- <ul style="list-style-type: none"> To translate certain theoretical concepts learnt earlier into experimental knowledge by providing hands on experience of basic laboratory techniques required for chemistry. To introduce the fundamentals and basic techniques of volumetric and gravimetric estimations. 				
Student Learning Outcome: <ol style="list-style-type: none"> To acquire the knowledge and skill of basic volumetric and gravimetric estimations. The students will be able to get hands on experience on the purification techniques for organic compounds. The students will be able to get hands on experience on the identification of chemical nature of organic compounds 				
Month	Practicals/Labs Scheduled Date	No. of Practical's/Labs planned	List of Experiments	Reference books
December	0/12/2024 -21/12/2024	2	10. Determination of solubility and chemical nature of both solids and liquids. Water insoluble (Acid//phenol/ Base/Neutral) and water soluble (Acid/Neutral) of given compound. (8 compounds to be analysed)	R.K. Bansal, Laboratory Manual in Organic Chemistry, New Age International, 5th Edition, 2016.
January	03/01/2025- 31/01/2025	4	1. Determination of surface tension of two unknown liquids or dilute solutions by stalagmometer method. 2. Determination of viscosity of two unknown liquids or dilute solutions by using Ostwald's viscometer.	A.I. Vogel, A.R. Tatchell, B. S. Furniss, Hannaford, Vogel's Textbook of Practical Chemistry

			3. Study of the variation of viscosity of an aqueous solution with concentration of solute.	Organic Chemistry, 5th Ed., Prentice Hall, 2011.
February	01/02/2025- 28/02/2025	4	chemical nature of both solids and liquids; 4. Pre-Lab session (Laboratory safety, concept of normality and molarity and stoichiometric calculations) 5. Calibration of Burette and Pipettes. 6. To prepare 100 mL of standard 0.1 M K ₂ Cr ₂ O ₇ solution and carry out dilution to 0.05, 0.01, 0.005, and 0.001 M in 100 mL standard flasks 7. Volumetry: To prepare 100 ml of 0.1 N KHP solution and standardize the given approximate 0.1 N NaOH solution.	A.I. Vogel, A.R. Tatchell, B. S. Furniss, Hannaford, Vogel's Textbook of Practical Organic Chemistry, 5th Ed., Prentice Hall, 2011.
March	01/03/2025- 30/03/2025	5	8. Gravimetric analysis: Determination of percentage composition of the given mixture ZnO + ZnCO ₃ 9. Purification of organic compounds: i) Recrystallization of Benzoic acid by using water as solvent and determination of melting point. ii) Distillation of Acetone and determination of boiling point. iii) Sublimation of Naphthalene and Determination of Melting point.	As above
April	01/04/2025- 11/04/2025	1	Revision/repetition/ Journal certification	

