Even Semester Lecture Plan

Name of the college: Government College of Arts, Science and Commerce, Sanquelim – Goa**.**

Name of Faculty: Ms. Rosalina Desilva	**Subject:** Chemistry

Paper code: CHC- 100 Fundamentals of Chemistry	**Program/Course: F**.Y. B.Sc.	**Division:** A

Academic year: 2025 - 2026	**Semester: II**	**Total Lectures: 30**

Course Objectives: Practical

● 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.

Course Learning Outcome:

1. To acquire the knowledge and skill of basic volumetric and gravimetric estimations.
2. The students will be able to get hands on experience on the purification techniques for organic compounds.
3. The students will be able to get hands on experience on the identification of chemical nature of organic compounds

Month	**Lectures From: To:**	**No. of lectures allotted**	**Topic, Subtopic to be covered**	**Learning outcome**	**ICT Tools**	**Reference books**
December 2025	01/12/25-06/12/25	02	Pre-Lab session (Laboratory safety, concept of normality and molarity and stoichiometric calculations)	The student will be able to: acquire the knowledge and skill of basic preparations	Chalk and Talk Laboratory demonstration	1. S. W. Rajbhoj and T. K. Chondhekar, Systematic Experimental Physical Chemistry, Anjali Publication, Second Edition 2000. 2. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).

	08/12/25-13/12/25	02	Preparation 100 mL of standard 0.1 M K2Cr2O7 solution and carry out dilution	The student will acquire knowledge and skill of basic preparations		3. O. P. Pandey, D. N. Bajpai, S. Giri, Practical Chemistry, S. Chand Publication 2013. 4. Shikha Gulati, J. L. Sharma & Shagun Manocha, Practical Inorganic Chemistry, CBS Publishers, 2017. 5. G. H. Jeffery J. Bassett J. Mendham R C. Denney, Vogel's Textbook of Quantitative Chemical Analysis, 5th Edn., John Wiley, New York. 1989. 6. J. Mendham, R.C. Denney, J.D. Barnes, M. Thomas, Vogel's Textbook of Quantitative Inorganic Analysis, 6th Edn., Pearson Education Asia, 2000. 7. Svehla, G. Vogel's Qualitative Inorganic Analysis, Pearson Education, 2012. 8. A.I. Vogel, A., R. Tatchell, B. S. Furniss, A.J. Hannaford, Vogel's Textbook of Practical Organic Chemistry, 5thEd., Prentice Hall; 2011. 9. D. Pasto, C. Johnson and M. Miller, Experiments and Techniques in Organic Chemistry, 1st Ed., Prentice Hall, 1991. 10. L.F. Fieser, K.L. Williamson, Organic Experiments, 7th edition D. C. Heath, 1992. 11. R.K. Bansal, Laboratory Manual in Organic Chemistry, New Age International, 5thEdition, 2016.
	15/12/25-20/12/25	02	TARANG			
	22/12/25-23/12/25	02	NIL			
January 2026	O2/01/26-03/01/26	02	Volumetry: Prepare 0.1 N KHP solution and standardize the given 0.1 N NaOH solution.	acquire knowledge and skill of volumetry		
	O5/01/26-10/01/26	02	Gravimetric analysis: percentage composition of the given mixture ZnO + ZnCO3	acquire knowledge and skill of gravimetry		
	12/01/26-17/01/26	02	Determination of solubility and chemical nature of both solids and liquids-organic compounds	Hands on experience on the identification of chemical nature of organic compounds		
	19/01/26-24/01/26	02	Determination of solubility and chemical nature of both solids and liquids.			
	27/01/26-31/01/26	02	Determination of solubility and chemical nature of both solids and liquids.			
February 2026	O2/02/26-07/02/26	02	Determination of solubility and chemical nature of both solids and liquids.			

	O9/02/26-14/02/26	02	1. Determination of surface tension of two unknown liquids or dilute solutions by stalagmometer method.	To acquire the knowledge and skill of basic instruments		
	16/02/26-21/02/26	Nil	ID Holiday			
	23/02/26-28/02/26	02	2. Determination of viscosity of two unknown liquids or dilute solutions by using Ostwald's viscometer.	To acquire the knowledge and skill of basic instruments		
March 2026	O2/03/26-07/03/26	02	3. Study of the variation of viscosity of an aqueous solution with concentration of solute.	To acquire the knowledge and skill of basic instruments		
	O9/03/26-14/03/26	02	Purification of organic compounds: i)Recrystallization. ii) Distillation. iii) Sublimation	Hands on experience on the purification techniques		
	16/03/26-21/03/26	02	Calibration of Burette and Pipettes.	Acquire the knowledge and skill of basic calibration methods.		
	23/03/26-28/03/26			Repetition		
	30/03/26-31/03/26			Repetition		