Practical Plan

Name of the college: Government college of Arts Science and commerce Sanquelim Goa.

Name of Faculty: Ms. Varsha Sail	**Subject:** Chemistry	
Paper code: CHC-322 (practical)	**Program: T.Y.B.Sc**	**Division: A**
Academic year: 2025- 2026	**Semester: VI**	**Total Practical hours: 30 hours**
Credits: 1		

Course Objectives:-.

Identify the principles of chromatographic techniques, X-ray diffraction, mass spectrometry, spectroscopic (AAS, flame photometry, fluorimetry), thermal methods (TGA, DTA, DSC) and Turbidimetry and Nephelometry.

Explain the working principles of separation techniques (HETP), ionization methods (EI, ESI), thermal methods and spectroscopic and optical scattering methods for chemical analysis.

Apply analytical principles to select appropriate techniques for separation or quantification and to solve numerical problems associated with analysis.

Interpret analytical data from the above techniques to deduce molecular and structural information about a sample
Expected Course Outcome: **Students are introduced to qualitative and quantitative estimation by different Chromatographic, Spectroscopic, Turbidometry and flame photometric techniques** **They will learn the technique of the analysis methods,** **Students will know the theory of the analysis and chemistry involved in calculation**
Student Learning Outcome: **Students learn estimation by different Chromatographic, Spectroscopic, Turbidometry and flame photometric techniques** **They will learn the technique of the analysis methods, know the theory of the analysis and chemistry involved in calculation**

Month	**Lecture from**	**Lecture to**	**No. of Practical's/Labs planned**	**List of Experiments**	**Reference books**
December 2025	1st	6th		Presession	1. G. H. Jeffery, J. Bassett, J. Mendham, R C. Denney, Vogel's Text Book of Quantitative Chemical Analysis, 5th Ed., John Wiley, New York, 1989. 2. 3. J. Mendham, R.C. Denney, J.D. Barnes, M. Thomas, Vogel's Textbook of Quantitative Inorganic Analysis, 6th Ed.,
	8th	13th	1	Estimation of Na+ in NaCl by cation exchange resin using standard NaOH.	

	15th	20th	1	Fun week and mela	Pearson Education Asia, England 2000
Jan 26	5th	10th	1	Zn2+ /Mg2+ separation by an anion exchanger & volumetric estimation of Magnesium with standard EDTA.	
	12th	17th	1	Determination of ion exchange capacity of the given cation/anion exchange resin.	
	19th	24th	1	Separation and detection of any two metal ions (Cu 2+, Cd 2+, Pb2+) using paper chromatography. Separation and detection of any two metal ions (Cu 2+, Cd 2+, Pb2+) using paper chromatography.	
	27th	31st	1	Separation of chlorophyll and xanthophyll from plant extract by paper Chromatography /Thin Layer Chromatography.	
Feb 26	2nd	7th	1	Determination of nitrite in water by colorimetry.	

	9th	14th		Determination of composition of Bi and Cu in a given mixture with EDTA by spectrophotometry.	
	16th	21st		Estimation of Na and K in given common salt solution using flame photometer.	
	23rd	28th		Interpretation and indexing of X–ray powder diffraction pattern of NiO or MgAl2O4 (d value, (h, k, l) and unit cell parameters) by graphical/mathematical method.	
March 26	2nd	7th		Interpret the given TG/ DTA thermogram for decomposition of CaC2O4.H2O and CuSO4.5H2O.	
	9th	14th		Estimation of sulphate in the given solution using turbidimeter.	
	16th	21st		Holiday	

	23rd	28th		Repeat	

October 13/10/2025-18/10/2025 1 Exam

Assessment Rubrics

Component	Max Marks
ISA 1	20
ISA 2	20
Practical	
Project	-
Semester End Exam	60