

Practical Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa		
Name of Faculty: Dr. Dattaprasad D. Narulkar	Subject: Inorganic Chemistry III (Major)	
Paper code: CHC-308	Program: T.Y.BSc.	Division:
Academic year: 2026 - 2027	Semester: V	Total Practical/Labs: 08 (30 hours)
Credits:1		
Course Objectives: 1. To use various titrimetric techniques to estimate the analytes. 2. To perform gravimetric methods to estimate metal ions. 3. To prepare coordination compounds.		
Expected Course Outcome: At the end of the course, students will be able: CO1: Synthesise and characterise coordination compounds using appropriate preparative techniques and reagents. CO2: Apply gravimetric principles to quantitatively estimate metal ions from a mixture by selective precipitation and isolation. CO3: Employ various titrimetric methods, including complexometric and redox titrations, for the quantitative analysis of chemical species.		
Student Learning Outcome: At the end of the course, students will be able: LO1: Demonstrate hands-on proficiency in the laboratory by successfully preparing coordination complexes. LO2: Analyse and separate metal ions from a complex mixture using pH control and selective precipitation techniques, as required in the gravimetric estimation. LO3: Calculate the concentration of an unknown analyte by performing and interpreting data from titrations.		

Month	Practical/Labs Scheduled Date	No. of Practical/Labs planned	List of Experiments	Reference books
June	22/06/2026	1	Preparation of diaquabis-(acetylacetonato)nickel (II)	Ref 1 and 2
	29/06/2026	1	Preparation of tris-(ethylenediamine)nickel (II) thiosulphate	Ref 1 and 2
July	06/07/2026	1	Estimation of iron as Fe_2O_3 from the given solution of ferric chloride, barium chloride and free HCl	Ref 1 and 2
	13/07/2026	1	Estimation of iron as Fe_2O_3 from the given solution of ferric chloride, barium chloride and free HCl	Ref 1 and 2
	20/07/2026	1	Estimation of barium as BaCrO_4 and Fe as Fe_2O_3 from the given solution of barium chloride, ferric chloride and free HCl	Ref 1 and 2
	27/07/2026	1	Estimation of barium as BaCrO_4 and Fe as Fe_2O_3 from the given solution of barium chloride, ferric chloride and free HCl	Ref 1 and 2
August	03/08/2026	1	Estimation of Zn as zinc pyrophosphate in the solution of zinc chloride containing free HCl	Ref 1 and 2
	10/08/2026	1	Estimation of Manganese as manganese pyrophosphate from the given solution of $\text{MnSO}_4 \cdot \text{H}_2\text{O}$ / $\text{MnSO}_4 \cdot 4\text{H}_2\text{O}$ / $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$	Ref 1 and 2
	17/08/2026	1	Estimation of Ni as Ni-DMG in the solution of nickel chloride containing copper chloride and free HCl.	Ref 1 and 2
	24/08/2026	1	Estimation of Ni as Ni-DMG in the solution of nickel chloride containing copper chloride and free HCl.	Ref 1 and 2
	31/08/2026	1	Determination of the strength of the given H_2O_2 solution using N/20 KMnO_4 solution	Ref 1 and 2
September	07/09/2026	1	Determination of the strength of the given H_2O_2 solution using N/20 KMnO_4 solution	Ref 1 and 2
	14/09/2026		Ganesh Chaturthi break (14/09/2026 - 19/09/2026)	Ref 1 and 2
	21/09/2026	1	Estimation of the amount of aluminium in the given aluminium sulphate solution by EDTA method (Back titration)	Ref 1 and 2
	28/09/2026	1	Estimation of the amount of aluminium in the given aluminium sulphate solution by EDTA method (Back titration)	Ref 1 and 2

Month	Practical/Labs Scheduled Date	No. of Practical/Labs planned	List of Experiments	Reference books
October	05/10/2026	1	Repeat Practical	Ref 1 and 2
	12/10/2026	1	Journal certification	Ref 1 and 2

1. Vogel's Textbook of Inorganic Qualitative Analysis
2. Vogel's Textbook of Inorganic Quantitative Analysis

* Assessment Rubrics	
Component	Max Marks
ISA	15
Practical SEE	25
Semester End Exam	60
Total	100