

Practical Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa		
Name of Faculty: Dr. Dattaprasad D. Narulkar	Subject: Inorganic Chemistry II (Major)	
Paper code: CHC-301	Program: T.Y.BSc.	Division:
Academic year: 2025 - 2026	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	23/06/2025	1	Preparation of diaquabis-(acetylacetonato)nickel (II)	Ref 1 and 2
	30/06/2025	1	Preparation of tris-(ethylenediamine)nickel (II) thiosulphate	Ref 1 and 2
July	07/07/2025	1	Estimation of iron as Fe_2O_3 and Ba as BaSO_4 from the given solution of ferric chloride, barium chloride and free HCl	Ref 1 and 2
	14/07/2025	1	Estimation of iron as Fe_2O_3 and Ba as BaSO_4 from the given solution of ferric chloride, barium chloride and free HCl	Ref 1 and 2
	21/07/2025	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
	28/07/2025	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	04/08/2025	1	Estimation of Zn as zinc pyrophosphate in the solution of zinc chloride containing free HCl	Ref 1 and 2
	11/08/2025	1	Estimation of Zn as zinc pyrophosphate in the solution of zinc chloride containing free HCl	Ref 1 and 2
	18/08/2025	1	Estimation of Ni as Ni-DMG in the solution of nickel chloride containing copper chloride and free HCl.	Ref 1 and 2
	25/08/2025	1	Estimation of Ni as Ni-DMG in the solution of nickel chloride containing copper chloride and free HCl.	Ref 1 and 2
August-September	-	-	Ganesh Chaturthi break (26/08/2025 - 01/09/2025)	-
September	08/09/2025	1	Determination of the strength of the given H_2O_2 solution using N/20 KMnO_4 solution	Ref 1 and 2
	15/09/2025	1	Determination of the strength of the given H_2O_2 solution using N/20 KMnO_4 solution	Ref 1 and 2
	22/09/2025	1	Estimation of the amount of aluminium in the given aluminium sulphate solution by EDTA method (Back titration)	Ref 1 and 2
	29/09/2025	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	06/10/2025	1	Repeat Practical	Ref 1 and 2
	13/10/2025	1	Journal certification	Ref 1 and 2
	18/10/2025	1	Difficulty solving	Ref 1 and 2

References

1. Vogel's Text book 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