



ARSD College, University of Delhi

Model Course Handout/Lesson Plan

Course Name : B.Sc. (H) Chemistry, Section-A						
Semester	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
I	217201110 1	Inorganic Chemistry I: Atomic Structure & Chemical Bonding	0	0	2	1
Teacher/Instructor(s)		Dr. Naorem Premjit Singh, Dr. Suman Dudeja				
Session		2022-23				

Course Description:

The course reviews the structure of the atom, which is a necessary pre-requisite in understanding the nature of chemical bonding in compounds. It also provides basic knowledge about ionic, covalent and metallic bonding and explains that chemical bonding is best regarded as a continuum between the three cases. It also discusses the periodicity in properties with reference to the *s* and *p* block, which is necessary in understanding their group chemistry.

Course Learning Outcomes:

- Calibrate the apparatus used in titrimetric analysis and prepare standard solutions for titration.
- Understand the theory and application of various acid-base and redox titrations.
- Comprehend the theory of acid-base indicators

List of Experiments:

1. Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.
2. Estimation of oxalic acid using standardized NaOH solution.
3. Estimation of sodium carbonate using standardized HCl.
4. Estimation of carbonate and hydroxide present together in a mixture.
5. Estimation of carbonate and bicarbonate present together in a mixture.
6. Estimation of oxalic acid using standardized KMnO_4 solution
7. Estimation of water of crystallization in Mohr's salt by titrating with KMnO_4
8. Estimation of oxalic acid and sodium oxalate in a given mixture.

Details of the Lab Course		
Session	Name of Experiment	Contact Hours
1	Titrimetric Analysis: (i) Calibration and use of apparatus (ii) Preparation of solutions of titrants of different Molarity/Normality.	4
2	Estimation of oxalic acid using standardized NaOH solution	2
3	Estimation of sodium carbonate using standardized HCl.	4
4	Estimation of carbonate and hydroxide present together in a mixture.	4
5	Estimation of carbonate and bicarbonate present together in a mixture.	4
6	Estimation of oxalic acid using standardized KMnO ₄ solution	4
7	Estimation of water of crystallization of Mohr's salt using standardized KMnO ₄ solution	4
8	Estimation of oxalic acid and sodium oxalate in a given mixture.	4
Total		30
Suggested Books:		
Sl. No.	Name of Authors/Books/Publishers	Year of Publication/Reprint
1.	Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), Vogel's Textbook of Quantitative Chemical Analysis, John Wiley and Sons.	1989
2.	Harris, D.C.; Lucy, C. A. (2016), Quantitative Chemical Analysis, 9 th Edition, Freeman and Company	2016

Evaluation Scheme:

No.	Component	Duration	Marks
1.	Internal Assessment		25
	• Quiz/Viva		
	• Observation & Record		
	• Attendance		
2.	• Model Exam	5 hrs	25
	End Semester Examination		