



# ARSD College, University of Delhi

## Model Course Handout/Lesson Plan

Course Name : B.Sc. (Hons) chemistry						
Semester	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
IV	32171401 INORGANIC CHEMISTRY - III	Coordination Chemistry			4	2
Teacher/Instructor(s)		Mr. Bachan Meena				
Session		2020-2021				

**Course Objective:** The course introduces the students to coordination compounds which find manifold applications in diverse areas like qualitative and quantitative analysis, metallurgy, as catalysts in industrial processes as medicines, paints and pigments as well as in life. The student is also familiarized with the d and f block elements and get an idea about horizontal similarity in a period in addition to vertical similarity in a group.

### Gravimetry

Gravimetric analysis is a **method in analytical chemistry to determine the quantity of an analyte based on the mass of a solid**. Example: Measuring the solids suspended in the water sample – Once a known volume of water is filtered, the collected solids are weighed.

- Preparation of a solution containing a known weight of the sample.
- Separation of the desired constituent.
- Weighing the isolated constituent.
- Computation of the amount of the particular constituent in the sample from the observed weight of the isolated substance.

### Preparation

Learning Inorganic Chemistry is going to help you to increase your overall score, so don't ignore this subject. It takes less time to understand it too. So give it your best shot.

### Lesson Plan:

Details of the Lab Course		
Session	Name of Experiment	Contact Hours
1	Issue of apparatus	4
2	Estimation of Ni(II) using dimethylglyoxime (DMG).	8

3	Estimation of copper as CuSCN.	8
4	Estimation of iron as Fe <sub>2</sub> O <sub>3</sub> by precipitating iron as Fe(OH) <sub>3</sub> .	8
5	Estimation of Al(III) by precipitating with oxine and weighing as Al(oxine) <sub>3</sub> (aluminium oxinate).	8
6	Tetraamminecopper (II) sulphate, [Cu(NH <sub>3</sub> ) <sub>4</sub> ]SO <sub>4</sub> .H <sub>2</sub> O	4
7	Acetylacetonate complexes of Cu <sup>2+</sup> /Fe <sup>3+</sup>	4
8	Potassium tri(oxalato)ferrate(III)	4
9	Measurement of 10Dq/ Δ <sub>o</sub> by spectrophotometric method	4
10	Verification of spectrochemical series.	4
11	Synthesis of ammine complexes of Ni(II) and its ligand exchange reactions (e.g. bidentate ligands like acetylacetonone, DMG, glycine) by substitution method.	4
12	Mock Test	4
13	Total	60

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	Marr, G.; Rockett, B.W. (1972), Practical Inorganic Chemistry, Van Nostrand Reinhold.	1972

Evaluation Scheme:

No.	Component	Duration	Marks
1	Internal Assessment		25
	• Quiz/Viva		
	Observation & Record		
	• Attendance		
	• Model Exam		
2	End Semester Examination	6 hrs	25