

Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NCYC515	Inorganic Chemistry Lab	0	0	3	1.5

#### Course Objective

- The course is intended to impart:
- Fundamental understanding about the principles involved in quantitative analysis
- Develop idea about inorganic preparations
- Develop understanding of electronic and magnetic properties of complex compounds
- Develop understanding about the kinetics of formation and redox properties of compounds

#### Learning Outcomes

- At the end of the course the students will be able to:
- Plan and conduct an experiment for quantitative analysis using various methods
- Understand the role of accuracy and precision in various methods adopted
- Learn methods for preparation, separation and purification of inorganic compounds

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Synthesis and characterization of metal-salen complexes i) [Ni(salen)] Complex ii) Jacobson Type Catalyst	9	These experiments provide the knowledge of synthesis and characterization of salen ligand and it's complexes.
2	Synthesis and characterization of Ni(II) complexes i) Ni(PPh <sub>3</sub> ) <sub>2</sub> Cl <sub>2</sub> ii) Ni(NCS) <sub>2</sub> (PPh <sub>3</sub> ) <sub>2</sub>	9	These experiments provide the knowledge of synthesis and characterization of phosphine based complexes.
3	Synthesis and characterization of Cu(II) complexes i) <i>trans</i> - bis glycinato copper (II) ii) Cu(II)-N,N-Diethylethylenediamine complex	9	These experiments help to acquire the knowledge in solid phase synthesis and thermochromic effect of complexes.
4	Synthesis and characterization of Potassium trioxalatochromate(III) (K <sub>3</sub> [Cr(C <sub>2</sub> O <sub>4</sub> ) <sub>3</sub> ] · 3H <sub>2</sub> O)	6	This experiment provides knowledge on the synthesis of complexes based on redox reaction.
5	Estimation of: i) Alkali content in Antacid Tablet ii) Calcium in milk powder by complexometry. iii) Zinc Oxide in talc powder by EDTA Titration	9	Presents detailed theoretical and practical knowledge of the estimation of various compounds from a commercial sources.
	<b>Total</b>	<b>42L</b>	

#### Text Books:

1. Vogels Textbook Of Quantitative Chemical Analysis, J. Mendham, R. C. Denney, J. D. Barnes, M. J. K. Thomas, 6<sup>th</sup> edition, Pearson, 2006.

#### Reference Books:

1. Collection of Interesting General Chemistry Experiments, Anil J Elias, Universities Press, 2008.
2. Integrated Approach to Coordination Chemistry: An Inorganic Laboratory Guide, R. A. Marusak, Kate Doan, S. D. Cummins, 2007, Wiley, NY.