

Curriculum Plan (Odd Semester 2024-25)

Teacher Name: **Dr. Aprajita Gaur**

Course: **B.Sc. (H) Chemistry, NEP-UGCF, Semester III/ II year**

Paper Name: **Chemistry of d- and fElements & quantitative Inorganic Analysis (DSC-7) (2 periods per week)**

UPC: **2172012301**

| S. No. | Contents | Allocation of Lectures | Monthwise schedule to be followed | Assignments/ Presentations etc |
|--------|--|------------------------|---|---|
| 1. | Transition Elements General group trends with special reference to electronic configuration, colour, variable valency, magnetic properties, catalytic properties, and ability to form complexes. Stability of various oxidation states and e.m.f. (Latimer diagrams), Frost diagrams of Mn and Cr. A brief discussion of differences between the first, second and third transition series | 12 | First week August – Second week September | Syllabus overview Reference books suggestions Doubt Session Class Test |
| 2. | Lanthanoids and Actinoids A brief discussion of electronic configuration, oxidation states, colour, spectral and magnetic properties. Lanthanoid contraction (causes and effects) separation of lanthanoids by ion exchange method. | 8 | Third week September – Second week October | Doubt Session University Papers Discussion |
| 3. | Inorganic Polymer Comparison with organic polymers, classification, structure and applications of following inorganic polymers: • Borates • Silicates, silicones • Phosphates • Phosphazenes (for cyclic polymers, only trimer is to be discussed). | 8 | Third week October – Second week November | Doubt Session University Papers Discussion Assignment Distribution |
| 4. | Principles of gravimetric analysis Particle size, Precipitation, Coagulation, Peptization, Co-precipitation, Digestion, Filtration and washing the precipitate, Drying and ignition the precipitate | 2 | Third week November | Doubt Session University Papers Discussion |

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