

Lesson Plan (Jan–Apr, 2026)

Dr Priti Rani

Assistant Professor Chemistry

Course: DSC Chemistry Semester: IV

Course code: 25CHEM404DS01

Month	Week	Topic / Content	Activities / Assessment
January	Week 4	Introduction to Coordination Compounds: ligands, coordination number, oxidation states, coordination entity	Lecture + Q&A
		IUPAC nomenclature of coordination compounds	Practice worksheets
February	Week 1	Isomerism in coordination compounds (CN = 4 & 6) Group activity + quiz	Worked examples + short test
	Week 2	Chelates & chelate effect; Intro to Valence Bond Theory (VBT) Problem solving + discussion	
	Week 3	VBT for complexes with CN = 4 & 6 Inner & outer orbital complexes; Limitations of VBT	Comparative chart + quiz
	Week 4	Basic idea of Crystal Field Theory (CFT)	Lecture + class activity
March	Week 1	Magnetic properties: types of magnetic behavior	Demo + quiz
	Week 2	Magnetic susceptibility methods & spin-only formula	Numerical exercises
	Week 3	L-S coupling & orbital contribution to magnetic moments	Problem solving
	Week 4	Applications of magnetic moment data for 3d complexes	Case studies + short assessment
April	Week 1	Thermodynamic stability of metal complexes; influencing factors	Lecture + MCQs
	Week 2	Substitution reactions of square planar Pt(II) complexes	Mechanism worksheets
	Week 3	Kinetics: Integrated rate expressions (1st, 2nd, 3rd order) & half-life	Numerical practice
	Week 4	Effect of temperature on rate; Arrhenius, collision & transition state theories	Problem sets + discussion
	Week 1	Chemical equilibrium concepts: equilibrium constant, free energy & Le-Chatelier's principle	Example problems + quiz

Course: Minor Chemistry Semester: IV

Course code: 25CHE403MV01

Month	Week	Topic / Content	Activities / Assessment
January	Week 4	Chemical Bonding: Valence electrons, ionic & covalent bonds, bond parameters, Lewis structure Polar character of covalent bond, valence bond theory (VBT) & its limitations	Lecture + worksheet Short quiz + discussion Practice problems + group work Model building + assessment
	February Week 1	Resonance; Geometry of covalent molecules; VSEPR theory Hybridization (s, p, d orbitals) & shapes of simple molecules	Concept summary + examples
	Week 2	Molecular orbital theory (homonuclear diatomic molecules – qualitative)Hydrogen bonding (types) & Van der Waals forces	Class discussion + examples
	Week 3	Thermodynamics: Concepts – system, surroundings, state functions	Lecture + Q&A
	Week 4	Laws of thermodynamics: internal energy, enthalpy, heat capacity	Numerical exercises + quiz
March	Week 1	Entropy, Gibbs & Helmholtz free energies; measurement of ΔU & ΔH	MCQs + problems
	Week 2	Hess's law; enthalpy of bond dissociation, combustion, formation	Problem solving + worksheet
	Week 3	Chemical Equilibrium: Dynamic nature, law of mass action, equilibrium constant	Practice questions + group activity
	Week 4	Le Chatelier's principle & applications	Concept maps + quiz
April	Week 1	Ionic equilibrium: Theories of acids & bases, ionization of acids/bases	Lecture + examples
	Week 2	Strong/weak electrolytes, degree of ionization, pH, buffer solutions	Numerical practice
	Week 3	Hydrolysis of salts (elementary idea), solubility product, common ion effect	Worksheet + class assessment
	Week 4	Alkyl Halides: Structure & classification (1° , 2° , 3°), general methods of preparation	Reaction mapping + quiz