

Lesson Plan (Even sem 2025-26)

<b>Name of Teacher:</b> Dr. Meena Rani <b>Subject:</b> CHEMISTRY		<b>Class:</b> B. Sc. VI Sem <b>Paper Code:</b> CCL-603(i)		<b>Session:</b> 2025-26	
<b>Jan 2026</b>	<b>Topic- Unit-I</b>				
	<b>Chemistry of 3d metals:</b> Oxidation states displayed by Cr, Fe, Co, Ni and Co. A study of the following compounds (including preparation and important properties); Peroxo compounds of Cr, $K_2Cr_2O_7$ A study of the following compounds (including preparation and important properties of $KMnO_4$ , A study of the following compounds (including preparation and important properties of $K_4[Fe(CN)_6]$ , A study of the following compounds (including preparation and important properties of sodium nitroprusside, $[Co(NH_3)_6]Cl_3$ , $Na_3[Co(NO_2)_6]$ .				
<b>Feb 2026</b>	<b>Topic- Unit-II</b>				
	<b>Organometallic Compounds :</b> Definition and Classification Classification with appropriate examples based on nature of metalcarbon bond (ionic, s, p and multicentre bonds). Structures of methyl lithium , Zeiss salt and ferrocene EAN rule as applied to carbonyls				
<b>March 2026</b>	<b>Topic- Unit-III</b>				
	Preparation, structure, bonding and properties of mononuclear and polynuclear carbonyls of 3d metals. p-acceptor behaviour of carbon monoxide. Synergic effects (VB approach) (MO diagram of CO can be referred to for synergic effect to IR frequencies).				
<b>April 2026</b>	<b>Topic- UNIT-IV</b>				
	<b>Bio-Inorganic Chemistry</b> A brief introduction to bio-inorganic chemistry. Role of metal ions present in biological systems with special reference to $Na^+$ , $K^+$ and $Mg^{2+}$ ions Na/K pump; Role of $Mg^{2+}$ ions in energy production and chlorophyll. . Role of $Ca^{2+}$ in blood clotting, stabilization of protein structures and structural role bones Revision of all topics				

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<b>Jan 2026</b>	<b>Topic- Unit-I</b>				
	<b>Polynuclear and heteronuclear aromatic compounds , an introduction</b> Properties of Naphthalene with reference to electrophilic and nucleophilic substitution Properties of Anthracene with reference to electrophilic & nucleophilic substitution Properties of Furan with reference to electrophilic and nucleophilic substitution Properties of Pyrrole with reference to electrophilic & nucleophilic substitution				
<b>Feb 2026</b>	<b>Topic- Unit-II</b>				
	Properties of Thiophene with reference to electrophilic & nucleophilic substitution Properties of Pyridine with reference to electrophilic & nucleophilic substitution <b>Active methylene compounds</b> <i>Preparation:</i> Claisen ester condensation. Keto-enol tautomerism. <b>Active methylene compounds</b> <i>Reactions:</i> Synthetic uses of ethyl acetoacetate (preparation of non-hetero molecules having up to 6 carbon).				
<b>March 2026</b>	<b>Topic- Unit-III</b>				
	<b>Application of Spectroscopy to Simple Organic Molecules</b> Application of visible, ultraviolet and infrared spectroscopy in organic molecules. Electromagnetic radiations, electronic transitions, $\lambda_{max}$ & $\epsilon_{max}$ , chromophore, auxochrome, bathochromic and hypsochromic shifts Application of electronic spectroscopy and Woodward rules for calculating $\lambda_{max}$ of conjugated dienes and $\alpha,\beta$ -unsaturated compounds.				
<b>April 2026</b>	<b>Topic- UNIT-IV</b>				
	Infrared radiation and types of molecular vibrations, functional group and fingerprint region. IR spectra of alkanes, alkenes and simple alcohols (inter and intramolecular hydrogen bonding) IR spectra of aldehydes, ketones, carboxylic acids and their derivatives (effect of substitution on $>C=O$ stretching absorptions). Revision of all topics				

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<b>Name of Teacher:</b> Dr. Meena Rani <b>Subject:</b> CHEMISTRY Minor Course (MIC)		<b>Class:</b> B. Sc. IV Sem <b>Paper Code:</b> C24VOC431T		<b>Session:</b> 2025-26
<b>Jan 2026</b>		<b>Topic- Unit-I</b>		
<b>Feb 2026</b>		<b>UNIT-I</b> Cosmetics- Definition, Classification, Ingredients, Constituents of Cosmetics, general study including preparation and uses of the following: Soaps, Hair dye, Hair lighteners or bleaches, Hair remover, Shampoo.		
<b>March 2026</b>		<b>Topic- Unit-II</b>		
<b>April 2026</b>		<b>UNIT-II</b> Preparation and uses of Face powder, Talcum powder, Creams (cold, vanishing, and shaving creams), Antiperspirants and Artificial flavours.		

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<b>Name of Teacher:</b> Dr. Meena Rani		<b>Class:</b> B. Sc. Sem IIInd ( as per NEP)		<b>Session:</b> 2025-26	
<b>Subject:</b> CHEMISTRY Minor Course (MIC) <b>Paper Code:</b> C24MIC231T					
<b>Jan 2026</b>	<b>Topic- Unit-I</b>				
	<b>Chemical Kinetics:</b> Concept of reaction rates Rate equation, Rate law ,Law of mass action Factors influencing the rate of reaction Order and molecularity of a reaction				
<b>Feb 2026</b>	<b>Topic- Unit-I</b>				
	Integrated rate expression for zero, first order reaction Integrated rate expression for second order reaction Half-life period of a reaction Arrhenius equation, Determination of Activation Energy				
<b>March 2026</b>	<b>Topic- Unit-II</b>				
	<b>Ionic Solids</b> General characteristics of ionic bonding lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds. Statement of Born-Landé equation for calculation of lattice energy (Derivation excluded),				
<b>April 2026</b>	<b>Topic- UNIT-II</b>				
	Born- Haber cycle and its applications polarizing power and polarizability Fajan's rules, Ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character, Crystal Defects. Revision of all topics				

