

Curriculum Plan
(Odd Semester 2024-25)

Teacher Name: **Dr. Rajesh Kumar Meena**

Course: B.Sc. (H) Chemistry, Sem V

Paper Name: DSC 13 -Basics of Organometallic Chemistry -Inorganic Chemistry-V (UPC: 32171601)

S.No.	Contents	Allocation of Lectures	Monthwise schedule to be followed	Assignments/ Presentations etc
1	Organometallic Compounds Definition and classification of organometallic compounds on the basis of bond type. Common notation used in organometallic chemistry, concept of hapticity of organic ligands, importance of organometallic chemistry, Organometallic compounds as reagents, additives, and catalysts, General principles of catalysis, Properties of catalysts, homogeneous and heterogeneous catalysis.	10 Lectures	3 rd week of Aug – 1 st week of September	-Syllabus Overview -Reference Books -Problem solving
2	Metal carbonyls: 18 electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series.(Catalytic steps, examples and industrial applications), deactivation and regeneration of catalysts, (catalytic poisons and promoter).	9 Lectures	2 nd week of Sept – 4 th week of September	- Related Problems - Assignment - Home Register Overview - Student's difficulties
3	Organometallic catalysis of the following reactions of commercial importance and their mechanism: Alkene hydrogenation (using Wilkinson's Catalyst) Organometallic catalysis of the following reactions of commercial importance and their mechanism: Synthetic gasoline preparation (Fischer Tropsch reaction)	9 Lectures	1 st week of Oct - 3 rd week of Oct.	- Related Problems -Home Register checking - Class test - Previous Year Question Papers discussion
4	Organometallic catalysis of the following reactions of commercial importance and their mechanism: Polymerisation of ethene using Ziegler-Natta catalyst, Organometallic catalysis of the following reactions of commercial importance and their mechanism: Hydroformylation reaction (Oxo-process)	8 Lectures	4 th week of October - 1 st week of Nov	- Related Problems - Home Register Overview - Revision session prior to home - Previous Year Question Papers discussion
5	Organometallic catalysis of the following reactions of commercial importance and their mechanism: Monsanto Acetic Acid process, Organometallic catalysis of the following reactions of commercial importance and their mechanism: Wacker oxidation process (Smidth process)	8 Lectures	2 nd week of Nov - 4 th week of November	- Related Problems - Home Register Overview - Home examination tentatively in October/November