

CHEMISTRY DEPARTMENT, MAHARANA PRATAP MAHAVIDYALAYA, JUNGLE DHUSAN, GORAKHPUR

Class: B. Sc. V Semester LESSON PLAN (Theory) : 2025-26 Subject : Chemistry Course (CHE-301) : Organic Synthesis- A & Course (CHE- 302) : Rearrangement and Chemistry of Group Elements				
DATE	LECTURE	TEACHER'S NAME	CHAPTER	TOPIC
16/07/2025	1	Dr. S. K. Vernwal	CHE-301, Unit-I, Chemistry of Alkanes	Physical and chemical properties of alkanes: Wurtz Reaction, Wurtz-Fittig Reactions
17/07/2025	2	Mrs. Priyanka Mishra	CHE-301 Unit-I B, Chemistry of Alkanes	Cycloalkanes: Nomenclature, methods of formation, chemical reactions, Baeyer's strain theory and its limitations.
18/07/2025	3	Mrs. Namrata Mishra	CHE-301, Unit-VII, Chemistry of Ethers and Epoxide	Nomenclature of ethers and methods of their formation
19/07/2025	4	Dr. R. Sahay	CHE-302 Unit-II, Catalysis	General principles and properties of catalysts, homogenous catalysis (catalytic steps and examples) and heterogenous catalysis
21/07/2025	5	Mrs. Divya Dubey	CHE-302, Unit-III, Chemistry of Main Group Elements	Chemistry of Noble Gasses: Chemical properties of the noble gases, chemistry of xenon, structure and bonding in xenon compounds.
21/07/2025	6	Mrs. Priyanka Mishra	CHE-301, Unit-I B, Chemistry of Alkanes	Chair, Boat and Twist boat forms of cyclohexane with energy diagrams ring strain in small rings
22/07/2025	Minor – CT	Mrs. Divya Dubey		
22/07/2025	7	Dr. R. Sahay	CHE-302 Unit-II, Catalysis	Industrial applications, Deactivation, or regeneration of catalysts. Phase transfer catalysts, application of zeolites as catalysts
23/07/2025	8	Dr. S. K. Vernwal	CHE-301, Unit-I, Chemistry of Alkanes	Free radical substitutions: Halogenation -relative reactivity and selectivity
24/07/2025	9	Dr. S. K. Vernwal	CHE-301, Unit-III, Chemistry of Alkynes	Methods of formation of alkynes, Addition of C triple bond C,
25/07/2025	10	Mrs. Namrata Mishra	CHE-301, Unit-VII, Chemistry of Ethers and Epoxide	Physical properties, chemical reactions
26/07/2025	11	Dr. R. Sahay	CHE-302 Unit-II, Catalysis	Industrial applications, Deactivation, or regeneration of catalysts. Phase transfer catalysts, application of zeolites as catalysts
28/07/2025	12	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Chemistry of Noble Gasses: Chemical properties of the noble gases, chemistry of xenon, structure and bonding in xenon compounds.
28/07/2025	13	Mrs. Priyanka Mishra	CHE-301, Unit-I, Chemistry of Cycloalkanes	Theory of strain less rings. The case of cyclopropane ring, banana bonds.
29/07/2025	ME	Mrs. Divya Dubey		
29/07/2025	14	Dr. R. Sahay	CHE-302 Unit-II, Catalysis	Enzyme catalysis: Michaelis-Menten equation
30/07/2025	15	Dr. S. K. Vernwal	CHE-301, Unit-III, Chemistry of Alkynes	Mechanism, reactivity, regioselectivity and stereoselectivity; reactions:
31/07/2025	16	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkene	Methods of formation of alkenes, Addition to C=C: mechanism (with evidence wherever applicable), reactivity, regioselectivity (Markownikoff and anti Markownikoff additions) and stereoselectivity;
01/08/2025	17	Mrs. Namrata Mishra	CHE-301, Unit-VII, Chemistry of Ethers and Epoxide	Cleavage and autoxidation, Synthesis of epoxides,
02/08/2025	18	Dr. R. Sahay	CHE-302, Unit-II, Catalysis	Lineweaver-Burkplot, turn-over number.
04/08/2025	19	Mrs. Divya Dubey	CHE-302, Unit-III, Chemistry of Main Group	Chemistry of Noble Gasses: Chemical properties of the noble gases, chemistry of xenon, structure

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			Elements	and bonding in xenon compounds.
04/08/2025	20	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkene	Methods of formation of alkenes, Addition to C=C: mechanism (with evidence wherever applicable), reactivity, regioselectivity (Markownikoff and anti Markownikoff additions) and stereoselectivity;
05/08/2025	21	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Chemistry of Elements of First Transition Series -Characteristic properties of d-block elements
05/08/2025	Minor—CT	Dr. R. Sahay		
06/08/2025	22	Dr. S. K. Vernwal	CHE-301, Unit-III, Chemistry of Alkynes	Mechanism, reactivity, regioselectivity and stereoselectivity; reactions:
07/08/2025	23	Dr. S. K. Vernwal	CHE-301, Unit-IV, Aromaticity and Chemistry of Arenes	Nitration, sulphonation and Friedel-Craft's Alkylation with their mechanism
08/08/2025	24	Dr. R. Sahay	CHE-302 Unit-III, Chemistry of Main Group Elements	S-Block Elements: Comparative study, diagonal relationship,
11/08/2025	25	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Binary compounds (hydrides, carbides and oxides) of the elements of the first transition series and complexes with respect to relative stability of their oxidation states
11/08/2025	26	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	Methods of formation of alkenes, Addition to C=C: mechanism (with evidence wherever applicable), reactivity, regioselectivity (Markownikoff and antiMarkownikoff additions) and stereoselectivity;
12/08/2025	27	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Binary compounds (hydrides, carbides and oxides) of the elements of the first transition series and complexes with respect to relative stability of their oxidation states
12/08/2025	28	Dr. R. Sahay	CHE-302 Unit-III, Chemistry of Main Group Elements	Salient features of hydrides, solvation and complexation tendencies including their function in biosystems, an introduction to alkyls and aryls.
13/08/2025	Minor--CT	Dr. S. K. Vernwal		
14/08/2025	29	Dr. R. Sahay	CHE-302 Unit-III, Chemistry of Main Group Elements	Salient features of hydrides, solvation and complexation tendencies including their function in biosystems, an introduction to alkyls and aryls.
18/08/2025	30	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Binary compounds (hydrides, carbides and oxides) of the elements of the first transition series and complexes with respect to relative stability of their oxidation states
18/08/2025	31	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	Reactions: hydrogenation, halogenation, hydrohalogenation, hydration, oxymercuration demercuration, hydroboration-oxidation,
19/08/2025	32	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Binary compounds (hydrides, carbides and oxides) of the elements of the first transition series and complexes with respect to relative stability of their coordination number and geometry.
19/08/2025	33	Dr. R. Sahay	CHE-302 Unit-III, Chemistry of Main Group Elements	Salient features of hydrides, solvation and complexation tendencies including their function in biosystems, an introduction to alkyls and aryls.
20/08/2025	34	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Nomenclature of benzene derivatives, MO picture of benzene, Character of arenes, cyclic carbocations/carbanions.
21/08/2025	35	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Nomenclature of benzene derivatives, MO picture of benzene, Character of arenes, cyclic carbocations/carbanions.

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22/08/2025	Minor—CT	Mrs. Namrata Mishra		
23/08/2025	36	Dr. R. Sahay	CHE-302, Unit-III, Chemistry of Main Group elements	Salient features of hydrides, solvation and complexation tendencies including their function in biosystems, an introduction to alkyls and aryls.
25/08/2025	37	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Chemistry of Elements of Second and Third Transition Series- General characteristics, comparative treatment of Zr/Hf, Nb/Ta, Mo/W in respect of ionic
25/08/2025	38	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	Epoxidation, syn and anti-hydroxylation, ozonolysis, radical addition:
26/08/2025	39	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Chemistry of Elements of Second and Third Transition Series- General characteristics, comparative treatment of Zr/Hf, Nb/Ta, Mo/W in respect of ionic
26/08/2025	40	Dr. R. Sahay	CHE-302, Unit-III, Chemistry of Main Group Elements	p-Block Elements: Comparative study (including diagonal relationship) of groups 13-17 elements,
27/08/2025	41	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Electrophilic aromatic substitution - halogenation, nitration, sulphonation and Friedel-Craft's Alkylation with their mechanism
28/08/2025	42	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	Epoxidation, syn and anti-hydroxylation, ozonolysis, radical addition:
29/08/2025	ME	Mrs. Namrata Mishra		
30/08/2025	43	Dr. R. Sahay	CHE-302, Unit-III, Chemistry of Main Group Elements	p-Block Elements: Comparative study (including diagonal relationship) of groups 13-17 elements,
01/09/2025	44	Mrs. Divya Dubey	CHE-302, Unit-IV, Chemistry of Transition Elements	Oxidation states, magnetic behavior, spectral properties and stereochemistry.
01/09/2025	45	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	Epoxidation, syn and anti-hydroxylation, ozonolysis, radical addition:
02/09/2025	46	Mrs. Divya Dubey	CHE-302, Unit-V, Chemistry of Lanthanides	Electronic structure, oxidation states and ionic radii and lanthanide contraction
02/09/2025	47	Dr. R. Sahay	CHE-302, Unit-III, Chemistry of Main Group Elements	Compounds like hydrides, oxides, oxyacids and halides of group 13-16, hydrides of boron-diborane and higher boranes,
03/09/2025	48	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Electrophilic aromatic substitution - halogenation, nitration, sulphonation and Friedel-Craft's Alkylation with their mechanism
04/09/2025	49	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Directing effects of the groups. Birch reduction
06/09/2025	Minor—CT	Dr. R. Sahay		
08/09/2025	50	Mrs. Divya Dubey	CHE-302, Unit-V, Chemistry of Lanthanides	Electronic structure, oxidation states and ionic radii and lanthanide contraction
08/09/2025	51	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	HBr addition; mechanism of allylic and benzylic bromination in competition with brominations across C=C; E- and Z- alkenes;
09/09/2025	52	Mrs. Divya Dubey	CHE-302, Unit-V, Chemistry of Lanthanides	Occurrence and isolation, ceric ammonium sulphate and its analytical uses.
09/09/2025	53	Dr. R. Sahay	CHE-302, Unit-III, Chemistry of Main Group Elements	Borazine, borohydrides, fullerenes, carbides, fluorocarbons, silicates (structural principle)
10/09/2025	54	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Methods of formation and chemical reactions of alkylbenzenes,
11/09/2025	55	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	HBr addition; mechanism of allylic and benzylic bromination in competition with brominations across C=C; E- and Z- alkenes;
12/09/2025	56	Mrs. Namrata Mishra	CHE-301, -VII, Chemistry of Ethers and Epoxides	Cleavage and autoxidation, Synthesis of epoxides,

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13/09/2025	Minor--CT	Dr. R. Sahay		
15/09/2025	57	Mrs. Divya Dubey	CHE-302, Unit-V, Chemistry of Lanthanides	Ocurrence and isolation, ceric ammonium sulphate and its analytical uses.
15/09/2025	58	Mrs. Priyanka Mishra	CHE-301, Unit-II, Chemistry of Alkenes	HBr addition; mechanism of allylic and benzylic bromination in competition with brominations across C=C; E- and Z- alkenes;
16/09/2025	59	Mrs. Divya Dubey	CHE-302, Unit-VI Chemistry of Actinides	Electronic configuration, oxidation states and magnetic properties
16/09/2025	60	Dr. R. Sahay	CHE-302, Unit-III, Chemistry of Main Group Elements	Tetrasulphur tetra nitride, basic properties of halogens, interhalogens and polyhalides.
17/09/2025	61	Dr. S. K. Vernwal	CHE-301, Aromaticity and Chemistry of Arenes	Alkynylbenzenes and biphenyl, naphthalene and anthracene.
18/09/2025	62	Dr. S. K. Vernwal	CHE-301, Unit-VI, Chemistry of Phenols	Nomenclature, structure and bonding, preparation of phenols, physical properties and acidic character,
19/09/2025	63	Mrs. Namrata Mishra	CHE-301, -VII, Chemistry of Ethers and Epoxides	Cleavage and autoxidation, Synthesis of epoxides,
20/09/2025	Minor—CT	Dr. R. Sahay		
22/09/2025	64	Mrs. Divya Dubey	CHE-302, Unit-VI Chemistry of Actinides	Chemistry of separation of Np, Pu and Am from U.
22/09/2025	65	Mrs. Priyanka Mishra	CHE-301, Unit-V, Chemistry of Alcohols	Classification and nomenclature, Monohydric alcohols nomenclature
23/09/2025	66	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
23/09/2025	67	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Essential and trace elements in biological processes
24/09/2025	68	Dr. S. K. Vernwal	CHE-301, Unit-VI, Chemistry of Phenols	Nomenclature, structure and bonding, preparation of phenols, physical properties and acidic character,
25/09/2025	69	Mrs. Priyanka Mishra	CHE-301, Unit-V, Chemistry of Alcohols	Classification and nomenclature, Monohydric alcohols nomenclature
26/09/2025	70	Mrs. Namrata Mishra	CHE-301, -VII, Chemistry of Ethers and Epoxides	Acid and base-catalyzed ring opening of epoxides,
27/09/2025	ME	Dr. R. Sahay		
29/09/2025	71	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
29/09/2025	72	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Metalloporphyrins with special reference to haemoglobin and myoglobin.
30/09/2025	73	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
30/09/2025	74	Mrs. Priyanka Mishra	CHE-301, Unit-V, Chemistry of Alcohols	Classification and nomenclature, Monohydric alcohols nomenclature
03/10/2025	75	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Nomenclature and classes of alkyl halides, methods of formation
04/10/2025	76	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Biological role of alkali and alkaline earth metal ions with special reference to Ca ²⁺ and Mg ²⁺ .
06/10/2025	77	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.

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06/10/2025	78	Mrs. Priyanka Mishra	CHE-301, Unit-V, Chemistry of Alcohols	Methods of formation by reduction of Aldehydes, Ketones, Carboxylic acids and Esters, Hydrogen bonding, Acidic nature
07/10/2025	79	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
07/10/2025	Minor—CT	Dr. R. Sahay		
08/10/2025	80	Dr. S. K. Vernwal	CHE-301, Unit-VI, Chemistry of Phenols	Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion.
09/10/2025	81	Dr. S. K. Vernwal	CHE-301, Unit-VI, Chemistry of Phenols	Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion.
10/10/2025	82	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Chemical reactions, Mechanisms of nucleophilic substitution reactions of alkyl halides, SN2 and SN1 reactions with energy profile diagrams
11/10/2025	83	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Cu in plastocyanin and hemocyanin, Zn in carboxypeptidase and carbonic anhydrase.
24/10/2025	84	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Polyhalogen compounds : Chloroform, carbon tetrachloride
25/10/2025	ME	Dr. R. Sahay		
27/10/2025	85	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
27/10/2025	86	Mrs. Priyanka Mishra	CHE-301, Unit-VII, Chemistry of Alcohols	Reactions of alcohols, Dihydric alcohols, Trihydric alcohols- nomenclature, methods of formation, Chemical reactions of glycerol.
29/10/2025	87	Dr. S. K. Vernwal	CHE-301, Unit-VI, Chemistry of Phenols	Comparative acidic strengths of alcohols and phenols, resonance stabilization of phenoxide ion.
30/10/2025	88	Mrs. Priyanka Mishra	CHE-301, Unit-V, Chemistry of Alcohols	Reactions of alcohols, Dihydric alcohols, Trihydric alcohols- nomenclature, methods of formation, Chemical reactions of glycerol.
31/10/2025	89	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Polyhalogen compounds : Chloroform, carbon tetrachloride
1/11/2025	90	Mrs. Priyanka Mishra	CHE-301, Unit-VII, Chemistry of Alcohols	Reactions of alcohols, Dihydric alcohols, Trihydric alcohols- nomenclature, methods of formation, Chemical reactions of glycerol.
03/11/2025	91	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
03/11/2025	CT	Mrs. Priyanka Mishra		
04/11/2025	92	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
04/11/2025	93	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Cu in plastocyanin and hemocyanin, Zn in carboxypeptidase and carbonic anhydrase.
06/11/2025	94	Mrs. Priyanka Mishra	CHE-301, Unit-VII, Chemistry of Alcohols	Reactions of alcohols, Dihydric alcohols, Trihydric alcohols- nomenclature, methods of formation, Chemical reactions of glycerol.
07/11/2025	95	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Polyhalogen compounds : Chloroform, carbon tetrachloride

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08/11/2025	96	Mrs. Priyanka Mishra	CHE-302, Unit-I, Rearrangement	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
10/11/2025	97	Mrs. Divya Dubey	CHE-301, Unit-VII, Metal Carbonyls and Nitrosyls	Metal Carbonyls and Nitrosyls 18-electron rule, preparation, structure and nature of bonding in the mononuclear and dinuclear carbonyls and nitrosyls.
10/11/2025	98	Mrs. Priyanka Mishra	CHE-302, Unit-I, Rearrangement	A detailed study of the following rearrangements: Pinacol-pinacolone, BenzilBenzilic acid, and Fries rearrangement
11/11/2025	ME	Mrs. Divya Dubey		
11/11/2025	99	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Cu in plastocyanin and hemocyanin, Zn in carboxypeptidase and carbonic anhydrase.
12/11/2025	100	Dr. S. K. Vernwal	CHE-301, Unit-VI, Chemistry of Phenols	Reactions of phenols electrophilic aromatic substitution, acylation and carboxylation.
13/11/2025	101	Mrs. Priyanka Mishra	CHE-302, Unit-I, Rearrangement	A detailed study of the following rearrangements: Pinacol-pinacolone, BenzilBenzilic acid, and Fries rearrangement
14/11/2025	102	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Methods of formation of aryl halides, nuclear and side chain reactions
15/11/2025	103	Dr. R. Sahay	CHE-302, Unit-VIII, Bioinorganic Chemistry	Cu in plastocyanin and hemocyanin, Zn in carboxypeptidase and carbonic anhydrase.
Extra*				
17/11/2025	Extra	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	Methods of formation of aryl halides, nuclear and side chain reactions
18/11/2025	Extra	Mrs. Namrata Mishra	CHE-301, Unit-VIII, Chemistry of Organic Halides	The addition-elimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides,