

LESSON PLAN

FacultyName: Ms. Vipasha

Subject Name: Organic Chemistry III

Class: B. Pharmacy- 4<sup>th</sup> semester

SubjectCode: BP401T

**Scope of the Subject:** This subject imparts knowledge on stereo-chemical aspects of organic compounds and organic reactions, important named reactions, chemistry of important hetero cyclic compounds. It also emphasizes on medicinal and other uses of organic compounds.

**Course outcome:** Upon completion of this course the student should be able to:

- Understand the methods of preparation and properties of organic compounds
- Explain the stereo chemical aspects of organic compounds and stereo chemical reactions
- Know the medicinal uses and other applications of organic compounds

Number of Lectures: 45 + 5

Each lecture: 01 hour

Lecture No.	Particular	Remark/Date
<b>Unit I</b>		
<b>Module 1: Stereo Isomerism</b>		
1.	Optical isomerism – Introduction	
2.	Optical activity, enantiomerism, diastereoisomerism, meso compounds	
3.	Elements of symmetry, chiral and achiral molecules	
4.	DL system of nomenclature of optical isomers	
5.	Sequence rules and conversion of different structures into Fischer projections	
6.	RS system of nomenclature of optical isomers	
7.	Reactions of chiral molecules	
8.	SN1 and SN2 Mechanism	
9.	Racemic modification and resolution of racemic mixture.	
10.	Asymmetric synthesis: partial and absolute	
<b>UNIT -II</b>		
<b>Module 2: Geometrical Isomerism</b>		
11.	Introduction of Geometrical Isomerism	
12.	Nomenclature of geometrical isomers (Cis Trans, EZ systems)	
13.	Nomenclature of geometrical isomers ( Syn Anti systems)	
14.	Methods of determination of configuration of geometrical isomers. (I)	
15.	Methods of determination of configuration of geometrical isomers.II	
16.	Conformational isomerism in Ethane.	
17.	Conformational isomerism in n-Butane.	

18.	Conformational isomerism in Cyclohexane	
19.	Stereo isomerism in biphenyl compounds (Atropisomerism) and conditions for optical activity.	
20.	Stereospecific and stereoselective reactions	
<b>UNIT-III</b>		
<b>Module 3: Heterocyclic Compounds</b>		
21.	Nomenclature of Heterocyclic Compounds	
22.	Classification of Heterocyclic Compounds	
23.	Synthesis and medicinal uses of Pyrrole.	
24.	Chemical reactions of Pyrrole.	
25.	Synthesis and medicinal uses of Furan.	
26.	Chemical reactions of Furan.	
27.	Synthesis and medicinal uses of Thiophene.	
28.	Chemical reactions of Thiophene.	
29.	Relative aromaticity and reactivity of pyrrole, Furan and Thiophene	
30.	Relative Basicity of pyrrole, Furan and Thiophene.	
<b>UNIT IV</b>		
<b>Module 4: Synthesis, reactions and medicinal uses of following compounds/derivatives</b>		
31.	Synthesis and Reactions of Pyrazole and Imidazole	
32.	Synthesis and Reactions of Oxazole and Thiazole.	
33.	Medicinal uses of Pyrazole, Imidazole, Oxazole and Thiazole.	
34.	Synthesis and Reactions of Pyridine, Quinoline, Isoquinoline	
35.	Synthesis and Reactions of Acridine and Indole	
36.	Medicinal uses of Pyridine, Quinoline, Isoquinoline, Acridine and Indole	
37.	Basicity of pyridine	
38.	Synthesis and medicinal uses of Pyrimidine, Purine, azepines and their derivatives	
<b>UNIT V</b>		
<b>Module 5: Reactions of synthetic importance</b>		
39.	Metal hydride reduction ( $\text{NaBH}_4$ and $\text{LiAlH}_4$ ),	
40.	Clemmensen reduction, Birch reduction.	
41.	Wolff Kishner reduction.	
42.	Oppenauer-oxidation and Dakin reaction	
43.	Beckmanns rearrangement	
44.	Schmidt rearrangement.	
45.	Claisen-Schmidt condensation	
<b>Revision</b>		
46.	Revision of Unit I with previous question paper	
47.	Revision of Unit II with previous question papers	
48.	Revision of Unit III with previous question papers	
49.	Revision of Unit IV with previous question papers	
50.	Revision of Unit V with previous question papers	

Teacher Incharge

Academic Incharge

Principal