

3rd SEMESTER

Course Code	Course Title	Teaching Load			Marks		Exam (hrs)		Credits
		L	T	P	Int.	Ext.	Int.	Ext.	
BP301T	Pharmaceutical Organic Chemistry –II	3	1	-	25	75	1	3	4

Scope: This subject deals with general methods of preparation and reactions of some organic compounds. Also studied here is reactivity of organic compounds. The syllabus emphasizes on mechanisms and orientation of reactions. Chemistry of fats and oils are also included in the syllabus.

Objectives: Upon completion of the course, the student shall be able to

1. Write the structure, name and the type of isomerism of the organic compound.
 2. Write the reaction, name the reaction and orientation of reactions.
 3. Account for reactivity/stability of compounds.
 4. Prepare organic compounds.
- General methods of preparation and reactions of compounds superscripted with asterisk (*) to be explained.
 - To emphasize on definition, types, classification, principles/mechanisms, applications, examples and differences.

Module 01

10 Hours

Benzene and Its Derivatives

- Analytical, synthetic and other evidences in the derivation of structure of benzene, Orbital picture, resonance in benzene, aromatic characters, Huckel's rule.
- Reactions of benzene - nitration, sulphonation, halogenation- reactivity, Friedelcrafts alkylation- reactivity, limitations, Friedelcrafts acylation.
- Substituents, effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction.
- Structure and uses of DDT, Saccharin, BHC and Chloramine.

Module 02

10 Hours

Phenols*

- Acidity of phenols, effect of substituents on acidity, qualitative tests, Structure and uses of phenol, cresols, resorcinol, naphthols.

Aromatic Amines*

- Basicity of amines, effect of substituents on basicity, and synthetic uses of aryl diazonium salts

Aromatic Acids*

- Acidity, effect of substituents on acidity and important reactions of benzoic acid.

Module 03

10 Hours

Fats and Oils

- Fatty acids – reactions.
- Hydrolysis, Hydrogenation, Saponification and Rancidity of oils, Drying oils.
- Analytical constants – Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meissl (RM) value – significance and principle involved in their determination.

Module 04

08 Hours

Polynuclear Hydrocarbons

- Synthesis, reactions.
- Structure and medicinal uses of Naphthalene, Phenanthrene, Anthracene, Diphenylmethane, Triphenylmethane and their derivatives.

Module 05

07 Hours

Cycloalkanes*

- Stabilities – Baeyer's strain theory, limitation of Baeyer's strain theory, Coulson and Moffitt's modification, Sachse Mohr's theory (Theory of strainless rings), reactions of cyclopropane and cyclobutane only.

Recommended Books (Latest Editions)

1. Organic Chemistry by Morrison and Boyd.
2. Organic Chemistry by I.L. Finar, Volume-I.
3. Textbook of Organic Chemistry by B.S. Bahl and Arun Bahl.
4. Organic Chemistry by P. L. Soni.