Program	Bachelor of Pharmacy (BPharm)	**Semester - 3**
Type of Course	-	
Prerequisite		
Course Objective	-	
Effective From A.Y.	2023-24	

Teaching Scheme (Contact Hours)				Examination Scheme				
				Theory Marks		Practical Marks		
Lecture	Tutorial	Lab	Credit	External Marks (T)	Internal Marks (T)	External Marks (P)	Internal Marks (P)	Total Marks
3	1	4	6	75	25	35	15	150

SEE *- Semester End Examination,* ***CIA*** *- Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)*

Course Content

T - Teaching Hours | **W** - Weightage

Sr.	Topics	T	W
1	**UNIT 1** 1. Benzene and its derivatives a. Analytical, synthetic and other evidences in the derivation of structure of benzene, Orbital picture, resonance in benzene, aromatic characters, Huckel's rule b. Reactions of benzene - nitration, sulphonation, halogenationreactivity, Friedelcrafts alkylationreactivity, limitations, Friedelcrafts acylation. c. Substituents, effect of substituents on reactivity and orientation of mono substituted benzene compounds towards electrophilic substitution reaction d. Structure and uses of DDT, Saccharin, BHC and Chloramine	**10**	**22**
2	**UNIT II** 2. Phenols* - Acidity of phenols, effect of substituents on acidity, qualitative tests, Structure and uses of phenol, cresols, resorcinol, naphthols 3. Aromatic Amines* - Basicity of amines, effect of substituents on basicity, and synthetic uses of aryl diazonium salts 4. Aromatic Acids* –Acidity, effect of substituents on acidity and important reactions of benzoic acid	**10**	**22**
3	**UNIT III** 5. Fats and Oils a. Fatty acids – reactions. b. Hydrolysis, Hydrogenation, Saponification and Rancidity of oils, Drying oils. c. Analytical constants – Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meissl (RM) value – significance and principle involved in their determination.	**10**	**22**
4	**UNIT IV** 6. Polynuclear hydrocarbons a. Synthesis, reactions b. Structure and medicinal uses of Naphthalene, Phenanthrene, Anthracene, Diphenylmethane, Triphenylmethane and their derivatives	**8**	**18**
5	**UNIT V**	**7**	**16**

Course Content

T - Teaching Hours | **W** - Weightage

Sr.	Topics	T	W
	7. Cyclo alkanes* 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		
		Total	**45**	**100**

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy

Level	Remembrance	Understanding	Application	Analyze	Evaluate
Weightage	30	40	10	10	10

NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcomes

At the end of this course, students will be able to:	
CO1	Knowledge and ability to write structure, name and the type of isomerism of organic compounds.
CO2	Knowledge and applications of general reactions, orientation of reactions, reactivity/ stability of organic compounds and analytical constant
CO3	Knowledge and basic understanding of basic methods of preparation, reactions, synthesis, physical & chemical properties, tests, uses of organic compounds
CO4	To know chemistry of fats and oils
CO5	Ability to determine oil values and perform synthesis of specified compounds.

Reference Books

1.	**A Textbook of Organic Chemistry (TextBook)** By Bahl Arun (Author), Bahl B.S. (Author) | S. CHAND AND COMPANY | 22nd Edition, Pub. Year 2016
2.	**ORGANIC CHEMISTRY (TextBook)** By Morrison Boyd & Bhattacharjee | 7TH, Pub. Year 2010
3.	**FUNDAMENTAL organic chemistry (TextBook)** By P.L.SONI | Sultan Chand & Sons
4.	**Organic Chemistry (TextBook)** By I.L.Finar | Pearson | SIXTH
5.	**Practical Organic Chemistry** By F G Mann , B C Saunder | Pearson | 4th

List of Practical

1.	Experiments involving laboratory techniques (recrystallization)
2.	Demonstration of laboratory techniques (steam distillation)
3.	To determine the acid value of given sample oil
4.	To determine the Iodine value of given sample oil
5.	To determine the saponification value of a given sample oil
6.	To perform the synthesis of benzanilide from aniline
7.	To perform the synthesis of P-iodo benzoic acid from P- amino benzoic acid
8.	To perform the synthesis of P- bromo acetanilide from acetanilide
9.	To perform the synthesis of benzil from benzoin
10.	To perform the synthesis of 2,4,6- tribromoaniline from aniline
11.	To perform the synthesis of dibenzalacetone from benzaldehyde
12.	To perform the synthesis of 1- phenyl azo ß naphthol from aniline
13.	To perform the synthesis of benzoic acid from ethyl benzoate
14.	To perform the synthesis of P- nitro acetanilide from acetanilide
15.	To perform the synthesis of Hippuric acid from glycine

List of Tutorial

1.	Comment explanation and discussion from UNIT I
2.	COMMENTS EXPLANATION AND ITS DISCUSSION FROM UNIT 1
3.	COMMENTS EXPLANATION AND ITS DISCUSSION FROM UNIT 2
4.	COMMENTS EXPLANATION AND DISCUSSION FROM UNIT 2
5.	COMMENTS EXPLANATION AND ITS DISCUSSION FROM UNIT 4
6.	COMMENTS EXPLANATION AND ITS DISCUSSION FROM UNIT 5
7.	Structure AND USES OF THE MENTIONED ORGANIC SUBSTANCE
8.	Structure AND USES OF THE MENTIONED ORGANIC SUBSTANCE IN UNIT II
9.	STUDENT'S PROBLEM SOLVING FROM UNIT 1,2
10.	STUDENT'S PROBLEM SOLVING FROM UNIT 3,4,5
11.	REVISION OF UNIT 1
12.	REVISION OF UNIT 2
13.	REVISION OF UNIT 3
14.	REVISION OF UNIT 4
15.	REVISION OF UNIT 5