

Branch Name:	Bachelor of Pharmacy
Program Code:	PH101
Course Name:	Pharmaceutical Organic Chemistry (Practical)
Course Code:	1BP209P

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)		
Lecture	Tutorial	Practical	Credit	Theory (T)		Total Marks
				Continuous Assessment	University Assessment	
NA	-	3	1	20	30	50

Course Objectives:

The objectives of this course are to:

1. Understand and follow essential laboratory safety protocols for handling chemicals, glassware, and equipment.
2. Identify and analyze organic compounds through their physical properties and functional group reactivity.
3. Apply ball-and-stick molecular models to visualize and interpret the structure of organic compounds.
4. Perform purification techniques such as crystallization to isolate and refine organic substances.
5. Synthesize simple organic compounds and their derivatives using standard laboratory methods.

Course Outcomes (CO):

CO No.	Upon successful completion of this course, the students will be able to:
1	Recall and outline the preliminary qualitative tests used for identifying water- insoluble and immiscible organic compounds.
2	Understand the synthesis methods for preparing simple organic compounds and their derivatives.
3	Apply crystallization techniques to purify organic compounds effectively.
4	Analyze experimentally to detect elements and functional groups to identify unknown organic compounds.
5	Interpret and analyze organic compounds through systematic qualitative analysis to confirm their chemical nature.

Detailed Syllabus:

List of Practical	
<i>(Minimum 12 experiments to be performed)</i>	
1. Systematic qualitative analysis of minimum of five water-insoluble or water-immiscible unknown organic compounds from different chemical classes:	
a. Preliminary tests: Color, odour, Solubility tests, test for aromaticity, test for saturation/unsaturation etc.	

- b. Detection of elements such as nitrogen, sulphur and halogens by Lassaigne's test
- c. Determination of Functional group tests such as phenols, amides, amines, carboxylic acids, aldehydes and ketones, alcohols, esters, aromatic and halogenated hydrocarbons and nitro compounds.
- d. Preparation of the derivatives and confirmation of the unknown organic compound by melting point / boiling point.
2. **Building Molecular Models:** Students will use ball-and-stick models create structures of molecules and understand their shapes and bonding.
3. **Crystallization Method** Students will learn how to purify three organic compounds using the crystallization technique

References:

1. Furniss, B. S., Hannaford, A. J., Smith, P. W. G. and Tatchell, A. R. *Vogel's Textbook of Practical Organic Chemistry*. Longman Scientific & Technical, London.
2. Mann, F. G. and Saunders, B. C. *Practical Organic Chemistry*. Pearson Education.
3. Shriner, R. L., Hermann, C. K. F., Morrill, T. C., Curtin, D. Y. and Fuson, R. C. *The Systematic Identification of Organic Compounds*. John Wiley & Sons.
4. Vogel, A. I. *Elementary Practical Organic Chemistry*. Longman Group Ltd.
5. Pavia, D. L., Lampman, G. M., Kriz, G. S. and Engel, R. *Introduction to Organic Laboratory Techniques*. Cengage Learning.

List of Open-Source Software/learning website: Nil