

Branch Name:	Bachelor of Pharmacy
Program Code:	PH101
Course Name:	Pharmacognosy and Phytochemistry (Practical)
Course Code:	1BP210P

Teaching and Examination Scheme:

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

Course Objectives:

The objectives of this course are to:

1. Perform chemical tests for the identification of gums, resins, oils, fats, waxes, and unorganized drugs.
2. Examine crude drugs using transverse section and powder microscopy for correct identification.
3. Apply suitable extraction techniques and study their effect on yield of crude extracts.
4. Isolate and identify important phytoconstituents and volatile oils using standard procedures.
5. Evaluate herbal raw materials collected from field/market sources as per Pharmacopoeial standards.

Course Outcomes (CO):

CO No.	Upon successful completion of this course, the students will be able to:
1	Identify unorganized crude drugs using specific chemical tests.
2	Analyze organized crude drugs through microscopy and powder analysis.
3	Select and perform appropriate extraction methods for herbal drugs.
4	Isolate and characterize phytoconstituents using laboratory techniques and TLC.
5	Assess and compare the quality and purity of herbal raw materials with official standards.

Detailed Syllabus:

List of Practical
<i>(Minimum 12 experiments must be performed)</i> 1. Chemical tests for identification of Agar, Acacia, Tragacanth, Honey. 2. Chemical tests for identification of Castor oil, Olive oil, Wool fat, Beeswax. 3. Chemical tests for identification of Asafoetida, Catechu, Aloe. 4. Transverse section and powder microscopy of a vinca leaf. 5. Transverse section and powder microscopy of a cinnamon bark. 6. Transverse section and powder microscopy of a fennel fruit. 7. Transverse section and powder microscopy of a clove flower bud.

8. Transverse section and powder microscopy of a Tulsi stem.
9. Transverse section and powder microscopy of a Liquorice roots.
10. Study of effect on different extraction techniques on yield of crude extract (maceration, decoction, soxhlation).
11. Isolation of volatile oil and it's TLC.
12. Isolation of caffeine from tea.
13. Isolation of Hesperidin from lemon peel.
14. Isolation of Glycyrrhizin from liquorice roots.
15. Isolation of Pectin from orange peel.
16. Experiential learning based experiment involving evaluation and comparison of field/market collected herbal raw materials with Pharmacopoeial standards.

References:

1. Trease, G. E. and Evans, W. C. *Pharmacognosy*. Elsevier.
2. Harborne, J. B. *Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis*. Springer.
3. Wallis, T. E. *Textbook of Pharmacognosy*. CBS Publishers & Distributors, New Delhi.
4. Tyler, V. E., Brady, L. R. and Robbers, J. E. *Pharmacognosy*. Lea & Febiger.

List of Open-Source Software/learning website: Nil