

Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy	QF02/0408–2.1E
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Department	Pharmacy
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Course Name	Phytochemistry lab	Course No.	201316
Prerequisite	Phytochemistry Pharmacognosy	Credit Hours	1
Number & date of course plan approval		Brief Description	See form QF02/0409

Course Objective	This practical course aims to teach the students the different parts of used medicinal plants and their macroscopical and microscopical features. Furthermore, several phytochemical classes are discussed from different aspects including extraction, separation and identification.
Intended Learning Outcomes	<ol style="list-style-type: none"> 1. Macroscopical and microscopical study of different parts of medicinal plants (leaves, flowers, seeds, fruits, roots and barks). 2. Experimental methods of separation and chemical identification of different classes of biologically active compounds from natural products including: Carbohydrates, glycosides, alkaloids, tannins, volatile and fixed oils. 3. Different methods of extraction of the active constituents. 4. Different chromatographic separation and visual detection of the above compounds.
Course Topics	<ol style="list-style-type: none"> 1. Macroscopical and microscopical study of leaves. 2. Macroscopical and microscopical study of flowers. 3. Macroscopical and microscopical study of seeds and fruits. 4. Macroscopical and microscopical study of roots. 5. Macroscopical and microscopical study of bark. 6. Extraction Techniques. Cold extraction; maceration, percolation, expression, enflourage. Hot extraction: digestion, infusion, decoction, clavenger, and soxhlet. 7. Detection of anthraquinone glycosides. 8. Extraction, chemical tests. TLC of anthraquinone. 9. Detection of cardiac glycoside. 10. Extraction and chemical tests for identification of cardiac glycosides.

	11. Detection of tannins. 12. Extraction and chemical tests for identification of tannins. 13. Detection of saponin glycosides.. 14. Extraction and chemical identification of saponins. 15. Detection of alkaloids. 16. Extraction and chemical tests for alkaloids.			
Text Books	Lab Manual			
References	Trease and Evans Pharmacognosy. 16th Text Books edition, saunders Elsevier.2009			
Grade Determination	1 st Exam = 25% 2 nd Exam = 25% Final Exam = 50%	Practical Course Grade Determination	Course Work = 50% (Reports, Term Papers, Quizes) Final Exam = 50%	
Course Outline				
Week	Hours	Subjects	Chapters in Textbook	Notes
1	1 1 1	Introduction to microscopy and microsopical techniques.		
2	1 1 1	Macroscopical and microscopical study of leaves		
3	1 1 1	Macroscopical and microscopical study of flowers		
4	1 1 1	Macroscopical and microscopical study of seeds and fruits		
5	1 1 1	Macroscopical and microscopical study of roots		
6	1 1 1	Macroscopical and microscopical study of bark		
7	1 1 1	Extraction Techniques Cold extraction; maceration, percolation, expression, enfluerage. Hot extraction: digestion, infusion, decoction, clavenger, and soxhlet.		



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8	1 1 1	Anthraquinone glycosides Extraction, chemical tests. TLC of anthraquinone		
9	1 1 1	Detection of cardiac glycoside Extraction and chemical tests for identification of cardiac glycosides.		
10	1 1 1	Detection of tannins Extraction and chemical tests for identification of tannins.		
Week	Hours		Chapters in Textbook	Notes
11	1 1 1	Detection of alkaloids Extraction and chemical tests for alkaloids		
12	1 1 1	Detection of saponin glycosides Extraction and chemical identification of saponins		
13	1 1 1	Final Exam		

Approved by Dept. Chair		Date of Approval	
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Extra Information: (Updated every semester and filled by course instructor)

Course Instructor	Iyad Ahmad Yamin, Aman Aref Ishaqat
Office No.	
Extension Email	
Office hours	