



Course Weekly Outline

Course Instructor	Lecturer assistant Samer Ali Hasan				
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Title	Pharmacognosy				
Course Coordinator	Pharmacognosy /				
Course Objective	This course is intended to study chemistry of other natural products namely alkaloids and antibiotics. Also this course includes studying phytotherapy & tissue culture techniques utilized for production of natural products.				
Course Description	Study the techniques of extraction, separation, and identification of constituents isolated from natural sources, using microscopes and chromatographic methods				
Textbook	<ul style="list-style-type: none"> Robbers JE, Speedie MK, Tyler VE (Eds.); Pharmacognosy and Pharmacobiotechnology; the latest edition. Michael Heinrich, Joanne Barnes; Fundamentals of Pharmacognosy & Phytotherapy. 				
References	William Charles Evans, Daphne Evans ; Trease and Evans' Pharmacognosy (16th Edition).				
Course Assessment	Term Tests	Laboratory	Quizzes	Project	Final Exam
	As (35%)	As (15%)	As (10%)	----	As (40%)
General Notes					



Course weekly Outline

week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	23-9-1014	Introduction: General biosynthesis pathways of secondary metabolites	Carbohydrates	
2	30-9-2014	Carbohydrates	Carbohydrates	
3	7-10-2014	Glycosides: Biosynthesis, physical and chemical properties	Cardio-active glycosides	
4	14-10-2014	Cardiac glycosides	Cardio-active glycosides	
5	21-10-2014	saponin glycosides	Anthraquinone glycosides	
6	28-10-2014	anthraquinone glycosides; flavonoid glycosides	Anthraquinone glycosides.	
7	4-11-2014	Cyanophore glycosides	Saponin glycosides	
8	11-11-2014	Isothiocyanate glycosides; aldehyde glycosides	Saponin glycosides	
9	18-11-2014	Alcoholic glycosides; phenolic glycosides; lactone glycosid; coumarins and chromones	Tannins	
10	25-11-2014	Resins and resin combination; tannins	Volatile oils	
11	2-12-2014	Lipids: fixed oils and waxes	Isolation of piperine from black pepper	
12	9-12-2014	Volatile oils: Introduction; chemistry of volatile oils; biosynthesis of volatile oils.	Isolation of piperine from black pepper	
13	16-12-2014	Hydrocarbons as volatile oils; alcohols as volatile oils; aldehydes as volatile oils	Isolation of belladonna alkaloids and their identification	
14	23-12-2014	Ketones as volatile oils; Phenols as volatile oils; Oxides as volatile oils; Ester as volatile oils; Phenolic ethers as volatile oils	Isolation of belladonna alkaloids and their identification	

15	30-12-2014	Non- medicinal toxic plants	Isolation of caffeine from tea	
16	6-1-2014	Vitamins and Amino acids	Isolation of caffeine from tea	
Half-year Break				
17	17-2-2015	Alkaloids: Introduction; Physical and chemical properties	Isolation of <i>Peganum harmala</i> alkaloids	
18	24-2-2015	Pyridine, piperidine alkaloids	Isolation of <i>Peganum harmala</i> alkaloids	
19	3-3-2015	Tropane alkaloids	Preparation of Khellin	
20	10-3-2015	Quinoline alkaloids	Preparation of Khellin	
21	17-3-2015	Isoquinoline alkaloids	Flavonoids of <i>Ruta graveolens</i>	
22	24-3-2015	Imidazole alkaloids; indole alkaloids	Flavonoids of <i>Ruta graveolens</i>	
23	31-3-2015	Steroidal alkaloids; lupinane alkaloids	Extraction of hesperidin	
24	7-4-2015	Alkaloidal amines; purine alkaloids.	Extraction of hesperidin	
25	14-4-2015	Antibiotics: Natural sources	Isolation of pectin	
26	21-4-2015	biosynthetic pathways	Isolation of pectin	
27	28-4-2015	Isolation and purification.	Isolation of citric acid from lemon juice	
28	5-5-2015	Phytotherapy :Introduction & principles	Isolation of citric acid from lemon juice	
29	12-5-2015	Medicinal plants in selected health care systems.	Isolation of Podophyllotoxin from <i>Podophyllum emodi</i> ; Isolation of Rotenone from <i>Lonchocarpus</i> Spp.	
30	19-5-2015	Medicinal plants in selected health care systems	Isolation of Podophyllotoxin from <i>Podophyllum emodi</i> ; Isolation of Rotenone from <i>Lonchocarpus</i> Spp.	
31	26-5-2015	Important natural products & phytomecines used in pharmacy & medicine	Isolation of <i>Peganum harmala</i> alkaloids	
32	2-6-2015	Important natural products & phytomecines used in pharmacy & medicine	Isolation of <i>Peganum harmala</i> alkaloids	

Instructor Signature:

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