

Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy **QF02/0408-2.1E**

Department	Pharmacy
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<b>Course Name</b>	<b>Phytochemistry</b>	<b>Course No.</b>	<b>0201317</b>
Prerequisite	Pharmacognosy	Credit Hours	3
Number & date of course plan approval	2016-2017	Brief Description	See form QF02/0409

<b>Course Objectives</b>	Phytochemistry course discusses the major pharmaceutically important secondary metabolites from natural sources of pharmaceutical interest. It provides the basic phytochemical knowledge about the natural source, classification, extraction, detection, isolation, pharmacological and toxicological effects.
<b>Intended Learning Outcomes</b>	UPON COMPLETION OF THE COURSE, THE STUDENT IS EXPECTED TO BE: <ol style="list-style-type: none"> <li>1. Familiar with medicinally active constituents (essential oils, Hydrocarbons, Carbohydrate, Phenols, Glycosides, Alkaloids)</li> <li>2. Familiar with the main used extraction, detection and identification methods of medicinally active constituents (essential oils, Hydrocarbons, Carbohydrate, Phenols, Glycosides, Alkaloids)</li> <li>3. Familiar with the main biosynthetic methods of medicinally active constituents (essential oils, Hydrocarbons, Carbohydrate, Phenols, Glycosides, Alkaloids)</li> </ol>
<b>Course Topics</b>	Provide the students with accurate information about: <ol style="list-style-type: none"> <li>1. The properties of natural products (Chemical and physical) which have physiological activities.</li> <li>2. Biosynthetic pathways of the main active compounds.</li> <li>3. Extraction methods and the identification and determination of the active compounds.</li> </ol>
<b>Text Books</b>	1. Trease and Evans Pharmacognosy. 16 <sup>th</sup> edition, saunders Elsevier.2009
<b>References</b>	1. Pharmacognosy and Phytochemistry. 2end edition Bruneton Jean, Springer verlag, 2008, ISBN: 1898298637 2. Drugs of natural Origin, 6 <sup>th</sup> edition 2010 Gunnar Samuelsson: Swedish Pharmaceutical Press, ISBN 9186274813 3. HBP – Pharmacopoeia 4. PDR
<b>Grade Determination</b>	1 <sup>st</sup> Exam = 25% 2 <sup>nd</sup> Exam = 25% Final Exam = 50%

Week	Hours	Subjects	Chapters in Textbook	Notes
1	1	- Introduction	1	
	1	-General isolation, extraction, identification and	18	
	1	determination methods of the active compounds	19	
2	1	- Hydrocarbons; Chemical structure, and biosynthesis	20	
	1	- Hydrocarbons; Chemical and physical properties	20	
	1	- Fixed oils	20	
3	1	- Phenols; Chemical structure	22-1	
	1	- Phenols; Biosynthesis	22-1	
	1	- Phenols; Chemical and physical properties	22-1	
4	1	- Tannins; Chemical structure	22-2	
	1	- Tannins; Biosynthesis	22-2	
	1	- Tannins; Chemical and physical properties	22-2	
5	1	- Lignans and lignins; Chemical structure	22-10	
	1	- Lignans and lignins; Biosynthesis	22-10	
	1	- Lignans and lignins; Chemical and physical properties	22-10	
6	1	- Coumarins; Chemical structure, and biosynthesis	22-3	
	1	- Coumarins; Chemical and physical properties	22-5	
	1	- Flavonoids; Chemical structure	22-6	
7	1	- Flavonoids; Chemical structure	22-6	
	1	- Flavonoids; Biosynthesis	22-6	
	1	- Flavonoids; Biosynthesis	22-6	
8	1	- Flavonoids; Chemical and physical properties	22-7	
	1	- Terpenoids; Chemical structure, and biosynthesis. Chemical and physical properties	25	
	1	- Monoterpenes and Sesquiterpenes	25-(1-2)	
9	1	- Volatile oils; Chemical structure, and biosynthesis. Chemical and physical properties	23(1-2)	
	1	- Diterpenes and Triterpenes	25-(3-5)	
	1	- Cardiac glycosides; Chemical structure, and biosynthesis. Chemical and physical properties	24-3	
10	1	- Saponins; Chemical structure, and biosynthesis. Chemical and physical properties	24(1-2)	
	1	- Tetraterpenes and Caretonoids	25-6	
	1	- Anthraquinone glycosides; Chemical structure, and biosynthesis		
11	1	- Anthraquinone glycosides; Chemical and physical properties		
	1	- Alkaloids of Tropan, Purin and Amino; Chemical structure, biosynthesis. Chemical and physical properties	27-3	
	1		27-16	
12	1	- Quinoline Alkaloids; Chemical structure, biosynthesis. Chemical and physical properties	27-5	
	1			
	1	- Benzylisoquinoline Alkaloids	27-8	
13	1	- Phenanthrene Alkaloids; Chemical structure,	27-10	



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	1 1	biosynthesis. Chemical and physical properties - Protoalkaloids	27-10 27-10	
14	1 1 1	- Indole Alkaloids; Chemical structure, biosynthesis. Chemical and physical properties - Steroidal Alkaloids - Opioid Alkaloids	27-11 27-19 27-8	
15	1 1 1	- Cannabinoids, hallucinogenic; Chemical structure, and biosynthesis, - Cannabinoids, hallucinogenic; Chemical and physical properties - Marine Drugs.	40-5 40-5 16(1-14)	

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

<b>Course Instructor</b>	Dr. Ala Abdulkareem Alhusban
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