Course Specifications

General Information

Course name	Phytochemistry (3)
Course number	PHCG4211
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	2
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - 1- Current updated information of the biosynthetic pathways of nitrogen compounds

2 - 2-Origin and isolation / identification methods of bioactive substances belonging to these pathways

3 - 3-Therapeutic and toxicological activities of these substances

4 - 4- Therapeutic application in pharmacy

5 - 5-The effect and impact of narcotics on addict and society

Intended Learning Outcomes

Knowledge and Understanding	* A1) To know the potentially useful medicinal plants of this pathway
	* A2) To know the importance, value and dangerous of narcotic drugs
	* A3) To study the biosynthesis of secondary metabolites and major biosynthetic pathways
	* A4) To know the Latin and bilingual (English/Arabic) common names of potentially used medicinal plants
	* A5) To know examples of commonly misused natural drugs and their semisynthetic/synthetic derivatives /analogues
	* A6) To use different references to collect the necessary information
Intellectual Skills	* B1) To know and to correlate the mechanisms, concepts and principles of biosynthetic pathways in plants
	* B2) To expand the horizon of the organic chemistry
	* B3) To apply the fundamental principles of organic chemistry and biochemistry for construction of alkaloids
	* B4) To predict the physico-chemical properties of alkaloids
	* B5) To evaluate the plant/plant, plant/drug and plant/nutrient interactions based on the secondary plant constituents
Professional Skills	* C1) Ethnobotanical and ethnopharmacological aspects of plant drugs belong to alkaloids
	* C2) To acquire updated information on old known medicinal plants
	* C3) To be familiar with the supposed actions and uses of herbal ingredients whether or not these have been substantiated by animal, marines, minerals and human studies
	* C4) Chemical, biological and therapeutic activities of plant constituents biosynthesized in the mentioned pathways
General Skill	* D1) Establishment of advice on the use of medicinal plants as natural remedies
	* D2) Establishment of advice on the limitations and precautions of commonly used herbal medicines especially by pregnant and lactating mothers
	* D3) Establishment of advice on the activities and toxicities of important addictive drugs of plant origin

Course Contents

1 - Alkaloids General Propoerteis
2 - Alkaloids from Ornithine
3 - Alkaloids from Lysine
4 - Alkaloids from Phenylalanine
5 - Opioid Chemistry
6 - Alkaloids fromTryptophan
7 - Alkaloids from terpeniods

Teaching and Learning Methods

1 - 1) Lectures: 2 credit hours/week
2 - 2) Tutorials
3 - 3) Case study
4 - 4) Assignments, reports: they were assigned to prepare and present a report discussing different aspects of medicinal plants using published papers – not Textbook information.

Teaching and Learning Methods for the Disabled Students

1 - Depend on the kind of disability the teacher respectively method of teaching will determine.

Students Assessment

Assessment Method	TIME	MARKS
Midterm	after 8 weeks	30%
Oral / Discussion	After 6 weeks	8%
Assignments	After 4 weeks	5%
Research/Report	At the end of semester	7%
Final Exam	After 16 weeks	50%

Books and References

Course note	Dr. Mazen Awni El-Sakka
Essential books	Pharmacognosy, Phytochemistry & Medicinal Plants (by Jean Bruneton) 3rd ed 2008
Recommended books	1. Pharmacognosy (V.E. Tyler)
	2. Medicinal Natural Products (P.M. Dewick)
	3. Trease and Evans Pharmacognosy (W.C. Evans)