Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	PHARMACOGNOSY
Course number	PHCG3204
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	2
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - it aims to give valuable knowledge about natural drug sources

2 - it aims to give information about biosynthesis of natural products and their chemical structures

3 - it aims to give information about qualitative and quantitative analysis of natural products

4 - it aims to give information about natural drug identification and authentication

5 - it study quality control procedures of natural drugs

6 - it study cultivation, collection and processing of herbal drugs

7 - it study the biological effects of the crude drug

Intended Learning Outcomes

Knowledge and Understanding	* it give information about natural drug sources either biological or mineral sources
	* it give information about the correct species and medicinal part used
	* it give information about biological and pharmacological effects of natural drugs
	* it give information about side effects, toxicity and contraindication of the natural drugs
	* it give information about chemical composition of the natural drugs: their structures and biosynthesis
	* it give information about cultivation, varieties and storage conditions of the herbal drugs
	* it give information about adulterants of the herbal drugs and their quality control
	* it support the role of instrumental analysis in the production of valuable natural medicine
	* it aims to give information about traditional medicine and their importance in drug discovery
Intellectual Skills	* the student will be able to make qualitative identification of the herbal drug by macro- and microscopical characters
	* the student will be able to make phytochemical investigation of the herbal drugs
	* the student will be able to predict pharmacological and toxic effects of the drug based on its chemical composition
Professional Skills	* the student will be able to make quality control of the herbal drug for the aim of drug authentication
	* the student will understand the relationship between chemical composition of the herbal drug and their effects
	* the student will be able to predict the best method of active ingredient extraction based on chemical composition
	* it give information about methods of extraction, separation and isolation of active ingredients
General Skill	* it support the importance of agricultural practice in the production of valuable herbal medicine
	* it support the multidisciplinary team in studying natural products obtained from natural sources

Course Contents

1 - chapter 1: introduction
2 - chapter 2: natural drug sources
3 - chapter 3: production and quality control of the herbal drug
4 - chapter 4: traditional herbal medicine
5 - chapter 5 : crude herbal drug and their classification
6 - chapter 6: introduction to phytochemistry
7 - chapter 7:carbohydrates and their chemistry
8 - chapter 8: herbal drugs containing carbohydrates

Teaching and Learning Methods

1 - lectures prepared as power point by the lecturer

Students Assessment

Assessment Method	TIME	MARKS
quiz 1	third week first semester	10
quiz 2	sixth week first semester	10
quiz 3	thirteenth week first semester	10
midterm exam	eighth week first semester	30
final exam	sixteenth week first semester	40

Books and References

Course note	lectures prepared as power point by the lecturer
Essential books	Evans, W.C. (2002) Pharmacognosy. 15th Edition, W.B. Saunders, Philadelphia
Recommended books	Heinrich, M., Barnes, J., Gibbons, S. and Williamson, E. M. (2012). Fundamentals of pharmacognosy and phytotherapy. 2nd edition. Elsevier, Edinburgh.

Knowledge and Skills Matrix

Main Course Contents	Study Week	Knowledge and Understanding	Intellectual Skills	Professional Skills	General Skill
chapter 1: introduction	1st week	it give knowledge about definition of pharmacognosy and its scope	it review the taxonomy of plant and its nomenclature	to be familiar with natural drug nomenclature	
chapter 2: natural drug sources	second week	it show biological and geographical sources of natural drugs, their pharmacological activities and synergic effects	it show the relationship between phytochemical and pharmacological effects of natural drugs	it help to make prediction about biological effects of natural drugs based on chemical composition	
chapter 3: production and quality control of the herbal drug	3rd-4th week	it give information about commercial production of herbal drugs, growth regulators, cultivation, tissue culture, chemicals variation, and quality control	it helps to understand the difference between low and high quality natural drug and factors that control the quality	it supports production the best quality herbal drug	
chapter 4: traditional herbal medicine	4th-5th week	it give thorough information about traditional herbal medicine of different ethnic groups, and show its importance in the development of modern medicine	it support the development of ethnopharmacology as a science relates the past with the present time	it encourages further investigation of traditional medicine for discovery of new novel drugs	
chapter 5 : crude herbal drug and their classification	7th-8th	it give information about the concept of crude drug and the different criteria in crude drug identification	it helps to study different aspects of the crude drug as their morphology, chemistry, biological effects...etc.	it help to deal with the different references and their different classification of the crude drugs	

chapter 6: introduction to phytochemistry	9th week	it give the basics of metabolic pathways of the plants, primary and secondary metabolites, and basic phytochemical groups	it helps to understand the relationship between primary and secondary metabolites and the basic structural units in phytochemical groups	it helps to understand phytochemical classification of the crude herbal drug	
chapter 7:carbohydrates and their chemistry	10th-12th	it give details about carbohydrates as the primary metabolites of the plants, their physical properties, their chemical structures and biosynthesis	it help to understand chemistry of carbohydrates and biosynthesis so this enable to develop the best methods of extraction, isolation, purification and identification of carbohydrates	it allow to choose the best time of collection of the crude drug and the best methods of cultivation and processing	
chapter 8: herbal drugs containing carbohydrates	13th-16th	it give details about the herbal drugs containing carbohydrates as main phytochemical and show the species used, the medicinal part, biological effects, side effects and contraindications	it helps to understand different biological effects of the plants and how their phytochemicals work as a medicine	it encourage the students to use natural sources from their surrounding in their primary health care	