Course Specifications

General Information

Course name	Phytochemistry II Lab
Course number	PHCG4108
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	0
Credit hours (practical)	1
Course Prerequisites	

Course Objectives

1 - 1. Acquire basic skills to identify the main active ingredients in plant part used, extract or dosage form.

2 - 2. Practice the knowledge gained in organic chemistry in the extraction of different phytochemical plant material according to solubility in suitable solvent relying on the fact that like dissolve like.

3 - 3. Detection of the extracted phytochemical groups by different chemical methods and TLC profiles supported by pharmacopeia.

Intended Learning Outcomes

Knowledge and Understanding

* A1) To know the potentially useful medicinal plants constituents.
* A2) To know the importance and value of Pharmacognosy
* A3) To study the quantitative analysis of primary & secondary metabolites and major biosynthetic pathways

Intellectual Skills

* B1) To know and to correlate the mechanisms, concepts and principles of quantitative analysis 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 primary & secondary metabolites
* B4) To study the physico-chemical properties of primary & secondary metabolites
* B5) To evaluate the plant-constituent-effect, based on the plant constituents

Professional Skills

* C1) Phytochemical aspects of plant drugs belong to primary & secondary metabolites
* C2) To acquire updated information on analysis of medicinal plants
* C3) Chemical, biological and therapeutic relationship of plant constituents in the mentioned metabolites

General Skill

* D1) Establishment of advice on the identification of medicinal plants as natural remedies
* D2) Establishment of advice on the limitations and precautions of chemical methods of analysis for herbal medicines .

Course Contents

1 - Introduction to instrument used & safety rules
2 - Medicinal Plant Research Methodology Phytochemical Screening for Quantitative methods
3 - Extraction of Caffeine from Coffee and Tea Colorimetric assay of Caffeine
4 - Thin Layer & Paper Chromatography Characterization of Flavonoids from citrus groups
5 - Estimation of Tannin in Tea
6 - Isolation of Piperine
7 - Determination of tropan alkaloids from Hyocyamus aurous
8 - Determination of cardiotonic glycosides from Digoxin
9 - Determination of sterols from Withania somnifera
10 - Determination of Anthraquinon – Senna folium-
11 - Determination of Nicotine from cigarettes
12 - Determination of lecithin from Egg yolk

Teaching and Learning Methods

1 - 1) Laboratory: 1 credit hour/week
2 - 2) Personal working or in groups ofc3 -5
3 - 3) Assignments, reports: they were assigned to prepare and present a report discussing the results obtained.

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
Lab work & Skills	Each lab.	30%
Oral / Discussion	Each Lab.	8%
Assignments/ Reports	Each lab.	5%
Quiz	Each lab.	7%
Final Exam	After 15 weeks	50%

Books and References

Course note	Lab Manual
Recommended books	1. Medicinal Plant Research Methodology (Mazen El-Sakka, Em. Grigorescu, 1998)