

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Phytochemistry I Lab
Course number	PHCG4110
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 plant powder /extracts using different solvents.
- 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	<ul style="list-style-type: none"> * A1) To know the potentially useful medicinal plants constituents. * A2) To know the importance and value of Pharmacognosy * A3) To study the qualitative analysis of primary & secondary metabolites and major biosynthetic pathways * C3) Chemical, biological and therapeutic relationship of plant constituents in the mentioned metabolites
Intellectual Skills	<ul style="list-style-type: none"> * B1) To know and to correlate the mechanisms, concepts and principles of qualitative 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	<ul style="list-style-type: none"> * C1) Phytochemical aspects of plant drugs belong to primary & secondary metabolites * C2) To acquire updated information on analysis of medicinal plants
General Skill	<ul style="list-style-type: none"> * 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
- 3 - Identification of Starch & Sugars
- 4 - Identification of fatty acids
- 5 - Lipophilic extraction- Phenolic compounds
- 6 - Identification of main Constituents
- 7 - Thin Layer Chromatography –qualitative-
- 8 - Alcoholic extraction- Phenolic compounds
- 9 - Identification of main Constituents
- 10 - Thin Layer Chromatography –qualitative-
- 11 - Aqueous extraction- Phenolic compounds
- 12 - Identification of main Constituents
- 13 - Thin Layer Chromatography –qualitative-
- 14 - Thin Layer Chromatography for volatile oils

Teaching and Learning Methods

- 1 - 1) Laboratory: 1 credit hour/week
- 2 - 2) personal working or groups in 3 -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

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Lab work & Skills	Each lab	30%
Oral / Discussion	Each lab	8%
Assignments/ Reports	Each lab	5%
Quiz	Each lab	7%

Books and References

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