Philadelphia University
Faculty of pharmacy
Department of pharmaceutical science
First semester, 2016/2017

Course syllabus

Course title: pharmacognosy and phytochemistry Practical	**Course code:** 510218
Course level: 2 years level	**Course prerequisite (s) and/or co-requisite (s):** **Co-requisite with** 510217 **Prerequisite** 510211
Lecture time: **Sunday** 8.10-10.00 / 1.10-3.00 **Monday** 8.15-10.15 / 11.15-1.15 **Tuesday** 1.10-3.10 **Wednesday** 11.15-1.15 / 2.15-4.15 **Thursday** 8.10-10.00	**Credit hours:** 1 hr **Contact hours:** during the office hours (Dr. Yousef Abusamra).
Location: 406	

Academic Staff Specifics

Name	Rank	Office number and location	Office hours	E-mail address
Dr.Yousef Abusamra	Assistant professor	408(Faculty of nursing)	**Sun/Tues/Thurs:** 11:00 – 12:00 1:10 – 2:00 **Mon/Wed:** 10:0 0--11:15 12:45 – 1:45	yabusamra@philadelphia.edu.jo
Eman Al-shahrorri	Lab supervisor	517	**All days** 12:00 - 1:00	eshahrorri@philadelphia.edu.jo
Dua'a Muhedat	Lab supervisor	413	**Sun/Tues/Thurs:** 12:00 – 1:00 **Mon/Wed:** 1:00 -- 2:00	dmuhaidat@philadelphia.edu.jo

Course description (According to the University Catalogue):

The course is designed to provide the student with basic information about practical pharmacognosy and phytochemistry: microscopical examination for the different plant parts, extraction and identification for: anthraquinone, saponin, anthocyanins and cardiac glycosides from pharmaceutical product, detection for alkaloid. Application of thin layer chromatography for volatile oil or Rutin and detection of the isolated spots by appropriate spraying reagent.

Course objectives:

The course is designed to provide the student basic information about Practical pharmacognosy and phytochemistry, including quality control using microscopy to identify different medicinal plants part including: root, leaves, barks, fruit and seeds in comparison with monographic data provided by pharmacopeias. on the other hand the student well practice different extraction method according to the chemical nature of phytochemical groups existed in medicinal plant or pharmaceutical product , identification of the extract is also done by chemical method provided by pharmacopeia or literature data, by the end of the lab the student should:

1. Acquire basic skills in using the microscope to identify plant powder using different mounting agent.
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. Detection of the extracted phytochemical groups by different chemical methods and TLC profiles supported by pharmacopeia.

Course/ resources

Text book/ books (title , author (s), publisher, year of publication)

Books (title , author (s), publisher, year of publication)

Text book:

1. Trease and Evans' Pharmacognosy
By W C Evans, 15th Edition (2002). Saunders; ISBN: 0702026182

2. By Jean Bruneton (1995), English edition. Levoisier Publishing, Paris; ISBN: 1898298130

The above textbooks cover the course material in detail. However, additional practical tips, examples and conclusions are discussed in details by the lecturer and the student will be responsible for the additional material.

Support material (s) (vcs, acs, etc).

Study guide(s).

Study guide (s) (when applicable)

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Laboratory Handbook/ books (when applicable)

The approved laboratory manual.

Teaching methods (Lectures, discussion groups, tutorials, problem solving, debates)

Practical experimental work, lab sessions .

Learning outcomes:

- **Knowledge and understanding:**
  Student learn microscopical examination for the different plant parts,.
  and extraction and identification for different phytochemical compounds

- **Cognitive skills (thinking and analysis):**
  Students develop the ability to make observations, record data and analyze results

- **Communication skills (personal and academic):**
  students will develop the ability for group discussions and critical thinking

- **Transferable Skills:**
  Doing homework and simple reports.

- **Psychomotor Skills (When applicable):**
  The familiarity to carry out the various experiments, especially those dealing with extraction and identification of certain natural products. The ability to solve problems depending on a good basic theoretical achievement.

Assessment instruments

- Exams (First, Second and Final Exams)
- Quizzes.
- Short reports and/ or presentations, and/ or Short research projects
- Homework assignments

Allocation of Marks	
Assessment Instruments	**Mark**
Reports and evaluation	**30**
Quizzes	**20**
Practical exam	**10**
Final examination	**40**
Total	**100**

Documentation and academic honesty

- Documentation style (with illustrative examples)

Taking headlines/notes from the lab manual with further elaborated/detailed discussion during the lab hours.

- Protection by copyright
- Avoiding plagiarism.

Course/ academic calendar

week	Basic and support material to be covered
16-20/10	Saftey rules
23-27/10	Introduction to the microscopy
30/10-3/11	Microscopical identification for starch +Calcium oxalate
6-10/11	Microscopical identification for Ginger root + cinnamon barks
13-17/11	Microscopical identification for Senna leaves + chamomile flower
First exam	
27/11-1/12	Microscopical identification for Anise fruit +linseed
4-15/12	Extraction and identification for Anthraquinone glycosides
18-22/12	Extraction and identification for cardiac glycosides
25-29/12	Identification for alkaloid by general test and specific test (first part).
Second exam	
8-12/1	Identification for alkaloid by microcrystalline test (second part)+ TLC for rutin
Final exam	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Other Education Resources:

Books:

Students will be expected to give the same attention to these references as given to the Module textbook(s)

1. The Complete German Commission E Monographs, Therapeutic Guide to Herbal Medicines
By Mark Blumenthal, Warner R. Busse, Licia Goldberg, Joerg Gruenwald, Tara Hall, Chance E. Riggins and Robert S. Riste, English Edition (1999). American Botanical Council; ISBN: 096555550X

Journals:

1. Phytochemsitry.
2. Natural Products Research.
3. Journal of Phytochemsitry.
4. Phytoterapia.
5. Pharmaceutical Biology.

Websites:

http://www.philadelphia.edu.jo/pharmacy/resources.html