

## Course specification of PHARMACOGNOSY

**University:** Benghazi University

**Faculty:** Faculty of Pharmacy

### Course specifications

**Program on which the course is given:** Bachelor Degree in Pharmaceutical Sciences

**Department offering the course:** Pharmacognosy

**Academic year / Level:** First year

### A- Basic Information

**Title:** Pharmacognosy

**Credit Hours:** 3hr/week

**Lecture:** 3hr/week

**Tutorial:** -----

**Practical:** 3hr/week

**Total:** 6hr/week

### B- Professional Information

#### 1 – Overall aim of course

- Upon successful completion of this course, the students should be able to illustrate the morphological and histological structures of different organs of medicinal plants such as leaves, Flowers, Herbs, Barks and woods, seeds, fruits, roots and rhizomes.
- The students should be also able to discuss role of these medicinal plants in the treatment of different disease conditions.
- The student in the end of this course will be able to identify many medicinal plants microscopically in both their entire and powdered forms.

#### 2 – Intended learning outcomes of course (ILOs)

##### a- Knowledge and understanding:

The student should be able to

- a 1. Describe the histological structure of the different medicinal plant parts, leaves, flowers, barks & woods, seeds, fruits, roots and rhizomes.
- a 2. Give an account on the biologically active principles in each plant part (leaves, flowers, barks & woods, seeds, fruits, roots and rhizomes) as well as their biological activity.
- a 3. Define Complementary therapies, including herbal therapies.
- a 4. Explain the concepts of medicinal drugs from plant kingdom; their identification as well as, their proper collection, storage and marketing according to compendial books.

##### b- Intellectual skills

The student should be capable of:

- b 1. Determine unknown drugs leaves, flowers, barks & woods, seeds, fruits, roots and rhizomes (morphologically and microscopically)
- b 2. Judge whatever the powdered drug is related to leaves, flowers, barks & woods, seeds, fruits, roots and rhizomes.

##### c- Professional and practical skills

The student should be capable of:

- c 1. Use the microscope to decide a given unknown plant powder is related to leaves, flowers, barks & woods, seeds, fruits, roots and rhizomes.
- c 2. Design and perform experiments for detection of adulteration
- c 3. Analyze herbal drugs for the purpose of using such skill in determining adulteration of herbal drugs, controlling the quality of produced medicinal agents, and discovering new drug entities.

#### d- General and transferable skills

The student should be able to:

- d 1. Work effectively in team.
- d 2. Demonstrate written and oral communication skills.
- d 3. Performing online computer search to develop information technology skills and knowing how to retrieve information from a variety of sources.
- d 4. Keeping up with the pharmaceutical literature and with new developments of the pharmacy profession and pharmaceutical industry and appreciating the need for independent life-long continuing education, starting the day after the student graduates.

#### 3- Theoretical Contents

	Topic	No. hours
1-	- General Introduction to Pharmacognosy - Selection & breeding of medicinal plants.- Cultivation of medicinal plants. - Factors affecting plant growth	3
2-	- Pharmacognosical study of crude drugs - Preparation of drugs from plants to pharmaceuticals. - Adulteration.- Secondary plant metabolites. - Dusting powder.	3
<b>3-</b>	<b>- Drugs composed of Leaves</b> <b>Introduction to Leaves.</b> Senna Digitalis Buchu, Uva ursi, Belladonna Stramonium, Egyptian henbane, Coca, Boldo Jaborandi, Eucalyptus, Gambier, Henna and Tea leaf.	8
4-	<b>- Introduction to flower.</b> - Roman & German chamomile. Clove, Pyrethrum, Santonica, Saffron, Safflower, Karkadeh, Lavander.	8
5-	<b>- Introduction to barks</b> - Cinchona, Cinnamon, Cassia Cascara, Frangula Quillaia, pomegranate bark, and Galls. <b>- Introduction to wood.</b> - Quassia wood. Sandal and Guaiacum woods	8
<b>6-</b>	<b>-Introduction to seeds.</b> - Cardamom, Strophanthus, Nux vomica, Stramonium, Colchicum, Nutmeg, Black mustard White mustard, Linseed, Fenugreek, Castor seed.	8
7-	<b>-Introduction to fruits</b> - Umbelliferous fruit Fennel, Anise, Coriander, Ammi visnaga., Ammi majus, Caraway, Dill. Cumin, Hemlock, Black pepper, Colocynth. Bitter orange peels, Hops. Vanilla. Capsicum, Poppy	8
<b>8-</b>	<b>Introduction to subterranean organs</b> Rhizomes: Ginger, Rhubarb, Filix mass, Valerian. Podophyllum, Hydrastis, Turmeric, Colchicum. Roots: Liquorice, Ipecacuanha, Rauwolfia. -Senega, Marshmallow, Gentian, Jalap, Aconite. Sasaparilla.	8

<b>9-</b>	<b>Introduction to herbs</b> Hyoscyamus, Lobelia, Vinca, Mentha, Thyme, Ephedra Ergot & Cannabis	8
<b>10-</b>	<b>Introduction to unorganized drugs</b> Opium, Agar, Gelatin, Aloes Colophony Mastic Myrrh Asafetida Olibanum Benzoin Balsam Peru Balsam Tolu Storax Gum acacia Gum tragacanth	5
<b>11-</b>	<b>Introduction to animal drugs</b> Cochineal, Cod liver oil, Canthrides, Insulin, Collagen Heparin	3
	<b>Total</b>	<b>70</b>

#### **4- Teaching and learning methods**

4.1- Lectures (Tools: board, data show). The lectures were added on the internet site of the faculty to be available to the students all the time as an *e-learning*.

4.2- Practical Session (Tools: labs., boards, instruments, chemicals, glassware, equipment).

4.3- Assignments, seminars, researches and posters.

#### **5- Student assessment methods**

5.1- Written exam(s) **to assess** knowledge and understanding and intellectual skills.

5.2- Practical exam(s) **to assess** practical skills.

5.3- Periodic exam(s) **to assess** understanding and intellectual skills.

#### **Evaluation of assessments**

Periodic Examinations 20%

Final-Term Written Examination 60%

Practical Examination 20 %

Total 100%

#### **6- List of references**

6.1- Course notes

Lecture and practical notes prepared by instructors

6.2- Essential & Recommended books

Trease, G.E.& Evans, W.C.; "Pharmacognosy", W.B. Saunders Publishers, Ltd, 16th ed., 2012.

6.4- Periodicals, Web sites, ... etc

<http://www.pubmed.com>

<http://www.botanical.com>

<http://www.herbmed.com>

#### **7- Facilities required for teaching and learning**

Study halls, Laboratories, equipment, chemicals, glassware, books, audiovisual tools.

**Course coordinator:** Dr. ASMA K. BELKHEIR, Ph.D., Assistant Prof of Pharmacognosy

**Head of Department:** Associate Prof. Salmin K. Alshalmani, Ph.D.

**Date:** 09/2018