



Faculty of Pharmacy

Department of Pharmacognosy

Course Specifications

Production of Medicinal Plants (3296)

1-Basic Information:	
Program on which the course is given:	Bachelor of Pharmaceutical Sciences and Drug Technology
Mandatory or elective element of program:	Elective
Department offering the course:	Pharmacognosy
Academic year and level: 2019/ 2020- level 5	Course prerequisite(s): Pharmacognosy 2 (3221)
Date of specification approval:	5/9 /2019
Title: Production of Medicinal Plants Code: 3296 Credit hours: 3	Theoretical: 2 hours (2 credit hours) Practical: 2 hours (1 credit hours)
Professional Information:	
2-Overall Aim of Course: The course introduces the students to the technologies of the processing, scaling up and industrial production of medicinal plants. It also describes all aspects of related to the manufacturing of products from medicinal herbs including good manufacturing practice.	
3-Course Learning Outcomes:	
1.1.1 1. List the basic steps of processing medicinal plants to products. (1-1-1-1)	
1.1.3 2. Explain the basic terms related to good manufacturing practice for herbal medicines. (1.1.3.1)	
1-1-5 3. Compare method of collections of medicinal plants. (1-1-5-1)	
1-1-7 4. Select the appropriate method for drying of medicinal plants. (3-1-4-2). 5. Identify new technology for production of medicinal plants in the industry. (1-1-7-1)	
2.2.2	

6. Apply the basic requirements of good manufacturing practices for herbal medicines. (2-2-2-1)

2.2.3

7. Select the proper method for authentication of medicinal plants. (2-2-3-1)

2.5.1

8. Apply the requirement of the regulatory authority in manufacturing of medicinal plants. (2.5.1.1)

4-1.1

10. Justify time management skills. (4-1-1-2)

4.1.2

11. Select appropriate sources for information. (4-1-2-1)

4.2.2

12. Apply effective presentation skills. (4-2-2-1)

4-Course Contents:

Week	Topic	No. of Teaching Hours	Lecture (credit hours)	Labs (credit hours)	Course Learning Outcomes
One	Importance of medicinal plants in the pharmaceutical field	2	1		1
	Lab rules and explanation for the course assignments			1	1,10
Two	Basic steps in production of medicinal plants and introduction to good manufacturing practice for herbal medicines	2	1		2,4
	Collection and segregation of medicinal plants			1	6,8,9
Three	Method of collection of medicinal plants for industrial production	2	2		2,4,5
	Chemical authentication of medicinal plants			1	6,8,9
Four	Authentication of medicinal plants material	2	2		2,4
	Botanical vs. chemical authentication of medicinal plants			1	6,8,9
Five	Drying and sterilization methods of medicinal plants for industrial production	2	2		2,4,5
	Methods of drying for medicinal plants			1	6,8,9
Six	Medicinal plants extract preparation in the industry	2	2		2,4
	Extraction methods - Demo on extraction facilities			1	6,8,9
Seven	Midterm				
Eight	Formulation of plant extracts into dosage forms	2	2		2,4,5
	Plant extract formulation examples			1	6,8,9
Nine	Good Manufacturing Practice for Herbal Medicines-1	2	2		2,4
	Field visit			1	6,8,9
Ten	Good Manufacturing Practice for Herbal Medicines-2	2	2		
	Field visit			1	6,8,9
Eleven	Good Manufacturing Practice for Herbal Medicines-3	2	2		2,4
	Students presentations			1	3,11
Twelve	Medicinal plant product file	2	2		2,4,5
	Practical Exam			1	12
Thirteen	Regulatory aspects of medicinal product production	2	2		2,4,5
Fourteen	Revision	2	2		7,8

5-Teaching and Learning Methods:

- Lectures
- Practical sessions
- Field visit
- Presentation
- Office hours

6- Teaching and Learning Methods for Probation Students:

- Lectures
- Practical sessions
- Field visit
- Presentation
- Office hours
- Extra office hours

7-Student Assessment:

Written quizzes, presentation and mid-term exam: To assess the ability of students to follow-up the course.

Practical exam: To assess the gained experience in practicing laboratory methods and techniques.

Final written exam: To assess the overall outcomes.

a- Assessment methods:

- a. Class work:
1. Quizzes
 2. Midterm theoretical
 3. Participation and assignments
 4. Practical exam
- b. Final exam
Written theoretical

b- Assessment schedule:

- a. Class work:
1. Quizzes:
Quiz I (4th week)
Quiz II (11th week)
 2. Midterm theoretical (7th week)
 3. Participation and assignments (throughout the semester)
 4. Practical exam (12th week)
- b. Final exam
Written theoretical (15th week)

c- Weight of assessments:

- a. Class work 50 marks (50%) distributed as:
1. Quizzes (10%)
 2. Midterm theoretical (10%)
 3. Participation and assignments (5%)
 4. Practical exam (25%)
- b. Final exam
Written exam (50%)
Total percentage 100 marks (100%)

8- List of References:

a- Course notes: Uploaded on the learning management system (Moodle)

- i. Lecture notes: Production of Medicinal Plants
- ii. Practical note: Production of Medicinal Plants Lab Manual

b- References books:

b.1. Essential text books:

- b.1.1. The Medicinal Plant Industry. 1st edition. R.OB. Wijsekera. CRC Press, 1991.
- b.1.2. Textbook of Industrial Pharmacognosy. 1st edition. A.N. Kalia. CBS Publishers, 2011.
- b.1.3. Drugs from discovery to approval. 2nd edition, Rich N.G. Wiley-Blackwell, 2009.
- b.1.4. Good Pharmaceutical Manufacturing Practice. 1st edition, John Sharp. CRC Press, 2005.

b.2. Recommended books:

- b.2.1. Medicinal Plants: From Farm to Pharmacy 1st ed. 2019, by Nirmal Joshee, Sadanand A. Dhekney, Prahlad Parajuli (Editors), Springer.
- b.2.2. Medicinal Plants: Production, Cultivation and Uses. Aubert Matthias, Nicolas Laisné (Editors). NOVA

science publishers, New York, 2017.

b.2.3. From medicinal plant raw material to herbal remedies. Aromatic and Medicinal Plants: Back to Nature Djordjevic, S.M., InTech Open, Croatia, 2017.

c- Periodicals, web sites, ,,,,,,

i. Planta Medica, Journal of Ethnopharmacology., Phytotherapy Research.....etc.

ii. Web sites: www. Botanical.com, Pubmed.com, Scirus.cometc.

9- Facilities required for teaching and learning:

1. Data Show
2. White board

Course Instructor: Prof. Dr. Sameh AbouZid

Head of Department: Prof. Dr. Sameh AbouZid

Date: 5/9/2019

Approved by QAC 2019/2020

Concerning NAQAAE Form No 12

