Course Description Form

1. Course Name:
Drug plants
2. Course Code:
MEPL458
3. Semester / Year:
First Semester (Autumn) / 2024-2025
4. Description Preparation Date:
1/9/2024
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
(2 theoretical + 3 practical = 5 hours) ×15 weeks = 75 hours / 3.5 units
7. Course administrator's name (mention all, if more than one name)
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8. Course Objectives

Theoretical:	Practical:
- Enable the student to understand how to grow drug plants. - Enable the student to understand how to extract medicinal materials from plants. - Enable the student to understand how to store drug plants safely. - Enable the student to understand how to prepare drug plants for marketing. - Introducing the student to the medically active substances produced by plants and the correct scientific methods for extracting them. - The student can judge the reasons for the low extraction of active substances in drug plants and their low consternation in their tissues.	- Enable the student to know the method of extracting active substances, and choose the best methods. - Knowledge and diagnosis of medicinal plants. - Determine the best time to harvest. - Conducting cultivation experiments for a drug plant and applying agricultural operations to it.

9. Teaching and Learning Strategies

Theoretical:	**Practical:**
- Interactive Lecture - Brainstorming - Dialogue and discussion - Assignment and report - Presentations of models of drug plant cultivation systems in a number of countries around the world. - Tasks the preparation of a report on one of the topics of the production of drug plants and discusses it. - Scientific visits.	- Commissioning teamwork to reveal leadership skills. - Assigning tasks and a report for each experiment.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3Practical	**Theoretical(a1,c1):** The student learns about medicinal plants, their definition, concept, terminology, classification, and the species and genera to which they belong, and how to employ hydroponics concepts in the production of medicinal plants. **Practical(b1):** examines and distinguishes varieties and genera of drug plants	**Theoretical:** Introduction to medicinal and aromatic plants. **Practical:** genera and plant hosts that include medicinal plants.	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
2	2Theoretical 3Practical	**Theoretical(a2,c2):** The student learns about the geographical distribution of medicinal and aromatic plants, Explains methods of storing medicinal plants. **Practical(c6):** The concentration and type of medically active substances are determined depending on the Chromatography method	**Theoretical:** geographical distribution of medicinal and aromatic plants. **Practical:** methods of storing medicinal plants	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
3	2Theoretical 3Practical	**Theoretical(a3):** Acquainted with the extraction of medically active substances **Practical(b2):** reveals the type and concentration of	**Theoretical:** division of medicinal and aromatic plants. **Practical:** methods for extracting medically active substances	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style	Quizzes, assignments, discussions

		medically active substances		**Practical:** assignment and report	
4	2Theoretical 3Practical	**Theoretical(a4):** The student learns about the classification of medicinal plants according to the chemical division of medicinal plants. **Practical(b3):** measures the amount of active substances	**Theoretical:** Chemical division of medicinal plants, **Practical:** plant parts containing medically active substances	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style, scientific visit **Practical:** assignment and report,	Quizzes, assignments, discussions
5	2Theoretical 3Practical	**Theoretical(a5):** The student understands how to adulterate medicinal plants. **Practical(b4):** reveals the phase of growth in plants	**Theoretical:** methods of cheating in medicinal plants, **Practical:** Extraction of medicinal and essential oils	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
6	2Theoretical 3Practical	**Theoretical(a6,c3):** Identify the correct methods in marketing medicinal plants, identify the problems of low medically active substances in plant tissues, identify and treat the causes of high respirometry in medicinal plant parts **Practical(b5):** Distinguish primary and secondary metabolic compounds	**Theoretical:** Storing Medicinal Plants **Practical:** Extraction with organic solvents	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
7	2Theoretical 3Practical	**Theoretical(a7,c4):** The student learns how to produce arak, determine the appropriate production cycle for the arak crop, predict the date of flowering, maturity and water consumption based on construction and demolition indicators and growth rates **Practical(b6):** Detects the types and amount of active substances in tissues at different stages and their impact on environmental conditions	**Theoretical:** Corruption of medicinal plants, inducement of the formation of medically active substances in plants, arak. **Practical:** Preparation of medicinal preparations from medicinal plants, botanical description of arak plant and cultivation method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
8	2Theoretical 3Practical	**Theoretical(a8,c5):** The student learns how to produce arak, determine the appropriate production cycle for the jojoba crop, predict the	**Theoretical:** Jojoba **Practical:** botanical description of jojoba and planting method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style, scientific visit	Quizzes, assignments, discussions

		date of flowering, maturity and water consumption based on construction and demolition indicators and growth rates **Practical(b7):** Tests the amount of daily growth and net photosynthesis		**Practical:** assignment and report	
9	2Theoretical 3Practical	**Theoretical(a9):** The student learns how to produce arak, determine the appropriate production cycle for the evening primrose crop, predict the date of flowering, ripening and water consumption based on construction and demolition indicators and growth rates **Practical(b8):** Applies stimulating agents to plants to increase the compounds of active substances	**Theoretical:** Evening primrose, arak **Practical:** botanical description of evening primrose and arak and planting method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
10	2Theoretical 3Practical	**Theoretical(a10):** Recognizes the disadvantages of belladonna production using greenhouses **Practical(b9):** examines and identifies plant root twisting	**Theoretical:** Belladonna **Practical:** botanical description of the belladonna plant and cultivation method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
11	2Theoretical 3Practical	**Theoretical(a11):** It gives examples of fields suitable for producing galingale. **Practical(e1):** Decides the preference for growing plants using greenhouses, hydroponics or traditional agriculture	**Theoretical:** galingale **Practical:** botanical description of galingale and planting method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
12	2Theoretical 3Practical	**Theoretical(a12):** It determines the period of renewal of the planting, the density of planting, and the conditions for selecting Colchicum for cultivation. **Practical(b10):** Measures decomposition in stored plant tissues	**Theoretical:** Colchicum **Practical:** botanical description of a plant for Colchicum and planting method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
13	2Theoretical 3Practical	**Theoretical(a13):** Manages and judges a scientific debate about the reasons for the spread of saffron fraud	**Theoretical:** Saffron **Practical:** botanical description of the Saffron plant and planting method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style	Quizzes, assignments, discussions

		Practical(e2): Determines the number of years for the renewal of saffron fields		**Practical:** assignment and report	
14	2Theoretical 3Practical	**Theoretical(a14):** Identifying the Positive and Negative Role of Ultrasonic Use in Extraction Processes **Practical(c7):** Selects the time and location for mowing Stevia plants	**Theoretical:** Stevia **Practical:** botanical description of the stevia plant and planting method	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignment and report	Quizzes, assignments, discussions
15	2Theoretical 3Practical	**Theoretical(a15):** It mentions the types of aquatic medicinal plants that can be grown in the Iraqi aquatic environment **Practical(b11):** Distinguish the effects of various enzymes on the extraction of active substances in aquatic medicinal plants	**Theoretical:** The Use of aquatic Plants as Medicinal Plants **Practical:** extraction of active substances from aquatic plants	**Theoretical:** auditory styles, blackboard writing style, direct dialogue style **Practical:** assignn and report	Quizzes, assignments, discussions

11. Course Evaluation

No.	Evaluation methods	Calendar date (week)	Grade	Relative weight %
1	Report 1	Fourth week	2.5	2.5
2	Report 2	Fifth week	2.5	2.5
3	Quiz (1)	Sixth week	2	2
4	Quiz (2)	Fourteenth week	2	2
5	Quiz (3)	Fifteenth week	1	1
6	Semester Exam (1)	Sixth week	7.5	7.5
7	Semester Exam (2)	The first week is difficult	7.5	7.5
8	Final theoretical test	Final Semester Exams	40	40
9	Practical field project	Fifteenth week	5	5
10	Field Assessment	Third and fifth week	2	2
11	Practical Quiz (1)	First week	1	1
12	Practical Quiz (2) Quiz	Fourth week	0.5	0.5
13	Practical Quiz (3) Quiz	Fourteenth week	1	1
14	Homework and discussions	All weeks	5.5	5.5
15	Final Practical Test	Final Semester Exams	20	20
	Total	100	100%	100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Lectures prepared by the subject teacher
Main references (sources)	**Farooqi, A.A. and B.S. Sreeramu (2004).** Cultivation of Medicinal and Aromatic Crops. Pub: Orient Blackswan. PP:344. **Neffati, M., Najjaa, H., & Máthé, Á. (Eds.).** (2017). Medicinal and Aromatic Plants of the World-Africa Volume 3 (Vol. 3). Springer. pp:402. **Yaniv, Z., & Dudai, N. (Eds.). (2014).** Medicinal and aromatic plants of the middle-east . Dordrecht Heidelberg New York London: Springer. PP:302.

Recommended books and references (scientific journals, reports...)	Encyclopedia of Medicinal Plants Atlas of Medicinal Plants Iraqi and Arab flora Scientific Journals
Electronic References, Websites	Journal of Applied Research on Medicinal and Aromatic Plants https://www.sciencedirect.com/journal/journal-of-applied-research-on-medicinal-and-aromatic-plants Arabian Journal of Medicinal and Aromatic Plants Hatps://reviews.i.m.m/index.php/ajmap/ Journal of Medicinal and Aromatic Plant Studies https://dergipark.org.tr/en/pub/jmaps

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