



Course Syllabus

1	Course title	Wild Medicinal Herbs
2	Course number	0606958
3	Credit hours	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	Medicinal & Aromatic Plants (0641331)
5	Program title	Ph.D. In Plant protection
6	Program code	
7	Awarding institution	
8	School	School of Agriculture
9	Department	Department of Plant Protection
10	Level of course	Ph.D.
11	Year of study and semester (s)	2024/2025 1 st semester
12	Other department (s) involved in teaching the course	
13	Main teaching language	English
14	Delivery method	X Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
15	Online platforms(s)	<input type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....
16	Issuing/Revision Date	Dec. 10 th 2024



17. Course Coordinator

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18. Other instructors:

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19 Course Description:

This course is designed to provide thorough information on Jordan biogeographical regions, their characteristics, prevailing environmental conditions and their relation with the vegetation type of medicinal wild species in each area. Identification of plant species, their richness and adaptation to local conditions. Dominant medicinal species and requirements for growth, their characteristics and role in vegetation communities are also emphasized. In addition, it provides information on chemical constituents of species and their importance in medicine and industry. It emphasizes the physiological effects of medicinal species or their chemicals and their healing properties on humans or animals. Any possible side or toxic effects resulted is also discussed. The course includes information on species taxonomic position, adaptation, richness, habitat, vegetation destructive factors and their conservation.



20 Course aims and outcomes:

A- Aims:

At the end of this course, students are expected to:

- Be acquainted with Jordan geography and characteristics
- Have an idea on the ecological and economical importance of medicinal plants in Jordan
- Able to categorize medicinal wild plant species in Jordan according to their biogeographical regions and their growth habit and habitat.
- Know the role of different ecological factors on growth, richness and productivity of different medicinal wild species and communities and their response to modification in these factors.
- Know factors lead to loss of vegetation and methods of conservation

B- Student Learning Outcomes (SLOs): Upon successful completion of this course student will be able to:

A. Knowledge and Understanding:

Students are expected to gain knowledge in the following aspects:

A1- Be acquainted with the ecological and economical importance of the studied species.

A2- Be familiar with all species studied through slide projection and field trips

B. Intellectual Analytical and Cognitive Skills: Student is expected to:

B1- Students are expected to keep up to date with any changes in Jordan vegetation, development or production of plant species in different biogeographical regions.

B2- They are required to consult recent published work or references on flora conservation and vegetation management.

B3- Students are encouraged to interact with the lecturer and to discuss any important relevant issues they think it provides new knowledge or satisfies their ambition on the topic.

B4- They expected to come familiar with important medicinal wild plant species in Jordan, and their ecological, medicinal and economical values.

C. Subject-Specific Skills: Students are expected to:

C1- Know the medicinal, industrial and ecological importance of wild medicinal herbs, and their conservation strategies and their production.

C2- Well trained and experienced in collecting literature and information on certain topic and know how to prepare a scientific manuscript

D. Transferable Key Skills: Students are expected to:

D1- Wild medicinal plant species in Jordan geographical regions and their importance

D2- Effect of ecological factors on distribution, spread, growth and population and productivity of wild medicinal herbs

D3- Possible conservation and protection of these species in their natural habitats

D4- Factors responsible on degradation of these species in local habitats and their gene reserves.

D5- Importance of wild herbs in medicine, drug industry and folk medicine



PLOs	1	2	3	4	5	6	7	8	9	10	11
SLOs of the course											
A1- Be acquainted with the ecological and economical importance of the studied species.	√				√						
A2- Be familiar with all species studied through slide projection and field trips		√	√								√
B1- Students are expected to keep up to date with any changes in Jordan vegetation, development or production of plant species in different biogeographical regions.				√	√	√	√				
B2- They are required to consult recently published work or references on flora conservation and vegetation management.		√	√		√	√	√	√	√		
B3- Students are encouraged to interact with the lecturer and to discuss any important relevant issues they think provides new knowledge or satisfy their ambition on the topic.		√		√	√	√	√	√	√		√
B4- They expected to come familiar with important medicinal wild plant species in Jordan, their ecological, medicinal and economical values.	√		√			√	√	√			√
C1- Know the medicinal, industrial and ecological importance of wild medicinal herbs, their conservation strategies and their production.			√	√	√	√	√	√	√	√	√
C2- Well trained and experienced in collecting literature and information on certain topic and know how to prepare a scientific manuscript.											



Upon the successful completion of this program (PLOs) students should be able to:

1. Demonstrate a broad depth knowledge of core concepts in plant protection.
2. Exhibit teaching competence through teaching, seminars and speaking experiences.
3. Interpret scientific literature related to Plant pathology, Entomology, or Weed science.
4. Formulate hypotheses, and develop experimental designs to test these hypotheses.
5. Establish and maintain experiments in the field of Plant Pathology, Entomology, or Weed science.
6. Perform appropriate statistical analyses for data collected in Plant Pathology, Entomology, and Weed science.
7. Think critically, solve research problems, and draw conclusions in the field of Plant Pathology, Entomology, or Weed science
8. Interpret and present research results in both oral and written formats.
9. Publish research in the field of Plant Protection in peer-reviewed scientific journals.
10. Maintain a leadership role in Plant Protection at the national and international levels.
11. Commit to ethics and compliance responsibilities for being an agricultural engineer, especially with regard to agricultural sector, environment, and society.

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods Face to Face (FF) Blended (B) Fully Online (FO)	Platform MS teams (MS) Moodle (M)	Lecturing Synchronous (S) Asynchronous (AS)	Evaluation Methods Assignment (A) Exam (E) Presentation (P) Quiz (Q) Report (R)	Resources
1	1.1	Introduction		FF	MS	S	E	1, 2, 3, 4, 5, 6, 7
	1.2	Plant main categories.		FF	MS	S	E	
2	2.1	Plant /Environment interaction		FF	MS	S	E	1, 11, 12, 13, 14
	2.2	Climatic factors (temperature, light/day length, topography, rain, RH, wind, snow) Edaphic factors (pH, fertility, water table, salinity... etc.). Biotic factors affect medicinal plants spread and distribution		FF	MS	S	E	

		(competition, allelopathy, pests, grazing, cutting and herbivores)						
3	3.1	Jordan geography & physical characteristics • Topography Rift valley, Mountain regions, Eastern desert (Plateau) • Rainfall • Temperature • Soil		FF	MS	S	E	10
	3.2			FF	MS	S	E	
4	4.1			FF	MS	S	E	
	4.2			FF	MS	S	E	
5	5.1	Biogeographical regions of Jordan Mediterranean region, Irano-Turanian Region, Sahara Arabian Region, Tropical or Sudanian region Influence of		FF	MS	S	E	10
	5.2			FF	MS	S	E	

		polyploidy, weeds/crops relations						
6	6.1	Geographical distribution		FF	MS	S	E	8,14,16, 22
	6.2	of plants in Jordan and		FF	MS	S	E	8,14,16, 22
7	7.1	their adaptation to		FF	MS	S	E	9, 11, 12, 22
	7.1	ecological factors and growth habit and requirements		FF	MS	S	E	9, 11, 12, 22
8	8.1	Midterm Exam						
	8.2	Vegetation types of Jordan		FF	MS	S	E	14,16, 22, 24
9	9.1	Biodiversity & main		FF	MS	S	E	All
	9.2	botanical medicinal plant		FF	MS	S	E	
10	10.1	families		FF	MS	S	E	
	10.2	The following plant species of		FF	MS	S	E	
		different plant families will be		FF	MS	S	E	
11	11.1	studied in details (Latin name,		FF	MS	S	E	
	11.2	family name, botanical		FF	MS	S	E	
12	12.1	description, life cycle, growth		FF	MS	S	E	
	12.2	habit, method of reproduction,		FF	MS	S	E	

13	13.1	economic value, distribution and		FF	MS	S	E	
	13.2	status in Jordan) <u>Plant families and species</u> Labiatae (<i>Mentha</i> , <i>Satureja</i> , <i>Thymus</i> , <i>Origanum</i> , <i>Salvia</i> , <i>Rosmarinus</i> , <i>Teucrium</i> , <i>Lamium</i> , <i>Marrubium</i>), Solanaceae (<i>Withania</i> , <i>Datura</i> , <i>Solanum</i> , <i>Hyoscyamus</i> , <i>Mandragora</i> , <i>Lycium</i>), Cruciferae (<i>Sinapis</i> , <i>Sisymbrium</i> , <i>Eruca</i> , <i>Capsella</i> , <i>Hersfeldia</i> , <i>Nasturtium</i> , <i>Cardaria</i> , <i>Diploaxis</i>), Compositae (<i>Sonchus</i> , <i>Carthamus</i> , <i>Gundelia</i> , <i>Xanthium</i> , <i>Centaurea</i> , <i>Cirsium</i> , <i>Onopordon</i> , <i>Senecio</i> , <i>Conyza</i> , <i>Matricaria</i> , <i>Pallenis</i> , <i>Achillea</i> , <i>Artemisia</i> , <i>Cichorium</i> , <i>Tragopogon</i> , <i>Inula</i> , <i>Anthemis</i> , <i>Chrysanthemum</i> , <i>Varthemia</i> , <i>Taraxacum</i> ,		FF	MS	S	E	

		<i>Calendula, Echinops and Pulicaria, Oxalidaceae (Oxalis), Polygonaceae (Polygonum, Rumex), Malvaceae (Malva, Althea), Umbelliferae (Daucus, Ridolphia, Eryngium, Anethum, Ammi, Apium, Ferula, Conium, Tordylium), Euphorbiaceae (Ricinus, Chrozophora, Euphorbia, Mercurialis), Rosaceae (Sacropoterium, Crategous, Rubus), Ranunculaceae (Ranunculus, Anemone, Adonis), Papaviraceae (Papaver, Glaucium), Cucurbitaceae (Ecballium, Citrullus, Bryonia, Cucumis), Fumariaceae (Fumaria), Hypericaceae (Hypericum), Chenopodiaceae (Chenopodium, Beta, Atriplex, Salsola, Anabasis,</i>						
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		<i>Sueada</i>), Rutaceae (<i>Ruta</i> , <i>Haplophyllum</i>), Convolvulaceae (<i>Convolvulus</i> , <i>Cuscuta</i>), Rhamanceae (<i>Zizyphus</i>), Zygophyllaceae (<i>Peganum</i> , <i>Tribulus</i> , <i>Nitraria</i>), Scrophulariaceae (<i>Verbascum</i>), Geraniaceae (<i>Geranium</i> , <i>Erodium</i>), Leguminosae (<i>Prosopis</i> , <i>Alhaji</i> , <i>Glycerrhiza</i> , <i>Cassia</i> , <i>Retama</i> , <i>Acacia</i> , <i>Callectoma</i> , <i>Vicia</i> , <i>Trifolium</i> , <i>Medicago</i> , <i>Astragalus</i> , <i>Ceratonia</i> , <i>Ononis</i> , <i>Melilotus</i>), Violaceae (<i>Viola</i>), Urticaceae (<i>Urtica</i> , <i>Paritaria</i>), Capparidaceae (<i>Capparis</i>), Boraginaceae (<i>Anchusa</i> , <i>Alkana</i> , <i>Echium</i> , <i>Heliotropeum</i>), Orchidaceae (<i>Orchis</i>), Cistaceae (<i>Cistus</i>), Berberidaceae					
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		<p>(<i>Leontice</i>), <i>Styraceae</i> (<i>Styricis</i>), <i>Asclepiadaceae</i> (<i>Calotropis</i>), <i>Amaranthaceae</i> (<i>Amaranthus</i>), <i>Plantaginaceae</i> (<i>Plantago</i>), <i>Salicaceae</i> (<i>Salix</i>, <i>Populus</i>), <i>Anacardiaceae</i> (<i>Rhus</i>, <i>Pistacia</i>), <i>Caryophyllaceae</i> (<i>Silene</i>, <i>Vaccaria</i>, <i>Paronychia</i>), <i>Tamaricaceae</i> (<i>Tamarix</i>), <i>Linaceae</i> (<i>Linum</i>), <i>Oleaceae</i> (<i>Laurus</i>), <i>Verbanaceae</i> (<i>Vitex</i>), <i>Residaceae</i> (<i>Resida</i>), <i>Apocyanaceae</i> (<i>Nerium</i>), <i>Ephdraceae</i> (<i>Ephedra</i>), <i>Primulaceae</i> (<i>Anagallis</i>, <i>Cyclamin</i>), <i>Orobanchaceae</i> (<i>Orobanche</i>, <i>Cistanche</i>), <i>Viscaceae</i> (<i>Viscum</i>), <i>Loranthaceae</i> (<i>Loranthus</i>), <i>Myrtaceae</i> (<i>Myrtus</i>), <i>Cactaceae</i> (<i>Cactus</i>, <i>Opuntia</i>), <i>Potulaceae</i></p>					
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		<p>(<i>Portulaca</i>), Juncaceae (<i>Juncus</i>), Scrophulariaceae (<i>Scrophularia</i>), Dipsicaceae (<i>Galium</i>, <i>Cephalaria</i>), Rubiaceae (<i>Asperula</i>), Gramineae (<i>Cynodon</i>, <i>Sorghum</i>, <i>Digitaria</i>, <i>Echinochloa</i>, <i>Avena</i>, <i>Arundo</i>, <i>Stipa</i>, <i>Panicum</i>, <i>Poa</i>, <i>Lolium</i>, <i>Oryzopsis</i>, <i>Bromus</i>, <i>Aegilops</i>, <i>Phalaris</i>, <i>Dactylis</i>), Liliaceae (<i>Allium</i>, <i>Colchicum</i>, <i>Urginea</i>, <i>Asparagus</i>), Araceae (<i>Arum</i>), Iridaceae (<i>Iris</i>, <i>Crocus</i>), Acanthaceae (<i>Acanthus</i>, <i>Blepharis</i>), Palmae (<i>Phoenix</i>), Cyperaceae (<i>Cyperus</i>), Typhaceae (<i>Typha</i>), Amaryllidaceae (<i>Narcissus</i>), Zygophyllaceae (<i>Nitraria</i>), Adiantaceae (<i>Adiantum</i>), Balantiaceae (<i>Balanites</i>),</p>					
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14	14.1	Destructive factors and loss of medicinal wild species in Jordan		FF	MS	S	E	All
	14.2	Conservation and gene bank: Importance, methods and suggestions		FF	MS	S	E	All
Final Exam based on university schedule								



22. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods: Learning through lectures, field trips, practical part of this course and laboratory work, weed samples collection, slides on weed species in farm land and natural habitats, literature review, all weed species samples and information on each species are displayed in the laboratory.

23. Evaluation Methods and Course Requirements:

Homework, Quiz, Exam, presentation, term paper...etc

Each student is required to perform, present and discuss a case study on one of the key topics in the course

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Mid. Term Exam (end of modules 1)	30		8-9 th week	
Students Presentations (2 presentations)	8			
In class work	5			
Term paper	17			
Final Exam (theoretical and practical)	40		As scheduled by the university	

24. Course Policies:

A- Attendance policies:

<15% , <20% with a permission ; medical report

B- Absences from exams and submitting assignments on time:

- **Assignments will not be accepted after deadline**
- **Absence of exams with a medical report must be submitted following regulations and**



a makeup exam will be scheduled within one week

C- Health and safety procedures:

- **Mask must be worn all the time in class and lab**
- **Social distancing**

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

From (%)	To (%)	Scale	Mark	Result
0	54	0	C	Fail
55	59	2.5	C+	Good
60	64	2.75	B-	Very Good
65	74	3	B	Very Good
75	79	3.5	B+	Very Good
80	85	3.75	A ⁻	Excellent
86	100	4	A	Excellent

F- Available university services that support achievement in the course:

25. Required equipment: (Facilities, Tools, Labs, Training....)

Class room equipped with Smart board and computer, Teaching Lab with fresh and dry samples of weeds, sprayers and calibration tools.

26. References:



1. Boulos. L. 1983. Medicinal Plants of North Africa, Michigan: USA, Publication INC Algonac
2. Eagle, R. 1981. Herbs, Useful Plants. London: BBC publication.
3. Flora Europe
4. Flora of Iraq
5. Flora of Lebanon
6. Flora Palaestina
7. Fluck, H . 1976. Medicinal Plants and their Uses, London: W. Foulshman Co. Ltd. ,
8. Fuller , D.J. 1979. Culinary and Medicinal Herbs. Ministry of Agriculture , Fisheries and Food . London : Reference Book 325.,
9. Hlava, and lanska, D.A. 1980. Guide in Colour to Kitchen Herbs and Spices, London: Octopus Book.
10. Kasapligil, B. 1956. Plants of Jordan with Notes on their Ecology and Economic Uses. Forestry Department (FAO), Amman, Jordan.
11. Launert, E. 1981. Edible and Medicinal Plants of Britain and North Europe. Hamlyn, London, UK.
12. Medicinal and Aromatic Plants (Different references and authors)
13. Plants of Arid and Semi Arid Regions.
14. Plants of Saline Conditions
15. Qasem, J.R. (1997). Medicinal and Aromatic Plants. Al-Quds Open University, Amman, Jordan
16. Range Plants
17. Stobart , T. 1977. Herbs, Spices and Flavoring . London: Penguin Books,
18. Tamplon , J. 1977. Dangerous Plants. London: David and Charles,
19. UNESCO. 1960. Medicinal Plants of the Arid Zone. Paris: UNESCO, William Charles, Daphne Trease and Evans ,Trease and Evans Pharmacognosy.

27. Additional information:

Websites to be announced during the course

Name of Course Coordinator: Dr. Wisam Obeidat- Signature: ----- Date: December 23, 2024

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: Prof. Nida' Salem----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----