

## Forest nurseries course description

1. Course Name:					
Forest Nurseries					
2. Course Code:					
FONU399					
3. Semester / Year:					
Autumn- First Semester / 2024-2025					
4. Description Preparation Date:					
1/9/ 2024					
5. Available Attendance Forms:					
Built-in					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 Theory + 3 practical / 3.5 units (75 hours)					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Munther younis muhammad/ Theory					
Email: <a href="mailto:muntheryunus@uomosul.edu.iq">muntheryunus@uomosul.edu.iq</a>					
Name: mohammad samer edres					
8. Course Objectives					
Theory :			Practical :		
<ul style="list-style-type: none"> <li>- Developing the student's ability to deal with scientific and technical means</li> <li>- Developing the student's ability to deal with the Internet</li> <li>- Developing the student's ability to deal with multiple media.</li> <li>- Developing the student's ability to dialogue and discuss</li> <li>Developing the student's ability to deal economically in the field the job.</li> </ul>			<ul style="list-style-type: none"> <li>-Developing the student's ability to deal with multiple media.</li> <li>- Developing the student's ability to dialogue and discuss</li> </ul>		
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> <li>-Interactive lecture, Brainstorming,</li> <li>- Dialogue and discussion,</li> <li>- Assigning tasks and reporting</li> <li>- Assigning group work to reveal leadership skills</li> </ul>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	<b>Theory:</b> a1: Learn about forest nurseries and the most important terms related to nurseries, tree and seedling, types of nurseries and the purpose of establishing and designing them. Seeds <b>practical :</b> a9: Knows the appropriate time to collect	<b>Theory:</b> Forest Silviculture science <b>practical :</b> Collect seeds	Interactive lecture, brainstorming, dialogue and discussion, self-learning and reports	Exams, Homework, Reports
2	2Theory 3 Pract	<b>Theory:</b> a2: Learn about seed trees and their types, choosing seed trees, factors that are taken into consideration when establishing and selecting seed trees. <b>practical :</b> a10 Learn about the use of devices used in extracting seeds and how they work	<b>Theory :</b> Seed trees  <b>Practical:</b> Seed extraction	Interactive lecture, brainstorming, dialogue discussion, self-learning and reports	Exams, Homework, Reports
3	2Theory	<b>Theory:</b>	<b>Theory:</b> Seed tree area	Interactive	Exams,

		area of the arboretum and some terms related to seed trees, Plus stands, Normal stands, Minus stands.: <b>practical</b> ; A11 Identify the types of seeds and know the shapes and sizes of some types of forest tree seeds	<b>Practical:</b> Seed screening	dialogue discussion, s learning and reports	Reports
4	<b>2Theory 3 Pract</b>	<b>Theory:</b> _A5: Learn about storage, types of storage, benefits of storage, seed vitality and how to measure vitality. forests <b>practical</b> B2: Applies process of examining s viability and seed germination and calculating the germination percentage	<b>Theory:</b> Seed collection <b>Practical:</b> time practical application	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
5	<b>2Theory 3 Pract</b>	<b>Theory:</b> A6: The student understands the meaning of vegetative propagation and methods of vegetative propagation <b>practical</b> : :b3 Apply treatments to seeds before planting to break seed dormancy and improve germination	<b>Theory:</b> Store seeds <b>Practical</b> Seed germination	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
6	<b>2Theory 3 Pract</b>	<b>Theory:</b> _A7: Distinguish the time of collecting the pens and the methods of using growth regulators for the cutting with sand <b>Practical</b> : C3: He fills planting bags and agricultural pots	<b>Theory:</b> Dormancy in seeds <b>Practical:</b> Seed treatment before planting	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
7	<b>2Theory 3 Pract</b>	<b>Theory:</b> B1: Distinguishes the physiological maturity times of some types of forest trees, and the appropriate time to collect seeds: <b>practical</b> : A12: Explains the process of planting seeds in the nursery	<b>Theory:</b> Vegetative propagation  <b>Practical</b> : Practical application in the nursery	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports
8	<b>2Theory 3 Pract</b>	<b>Theory:</b> _C1: Explains how to take plant cuttings, the types of cuttings and their sources, and the use of growth hormones to root the cuttings <b>practical</b> :c4 organizes a scientific visit to the nurseries of the Mosul Municipality	<b>Theory:</b> Methods of vegetative propagation <b>Practical:</b> Practical application in the nursery	Interactive lecture, brainstorm dialogue discussion, s learning and reports	Exams, Homework, Reports





9	2Theory 3 Pract	<b>Theory:</b> A4: Learn about seed storage, types of storage, the benefits of storage, seed vitality, and how to measure vitality <b>practical :</b> C5: Calculates the germination rate, germination energy, germination rate, and germination speed using germination equations	<b>Theory:</b> Time to take cutting and methods Collect nursery <b>Practical:</b> it Practical application in the	Interactive lecture, brainstorm dialogue discussion, learning and reports	Exams, Homework, Reports
10	2Theory 3 Pract	<b>Theory :</b> A8: Identify the types of living and non-living fences and their specifications <b>practical :</b> b4: Carrying out the process of individualizing the seedlings, taking into account the points that must be taken into account when separating	<b>Theory</b> Fences used Nurseries <b>Practical:</b> Practical application in nursery	Interactive lecture, brainstorm dialogue discussion, learning and reports	Exams, Homework, Reports
11	2Theory 3 Pract	<b>Theory:</b> d1: Runs discussion panels on developmental processes in the nursery, their importance and types It identifies the most important tillage methods used in the nursery and explains their importance before planting seedlings <b>practical</b> b6: Chemical and organic fertilizers are used for various types of forest tree	<b>Theory:</b> Developmental processes in nursery <b>Practical:</b> practical application	Interactive lecture, brainstorm dialogue discussion, learning and reports	Exams, Homework, Reports
12	2Theory 3 Pract	<b>Theory:</b> E1: Determines the most important tillage methods used in the nursery and explains their importance before planting <b>Practical:</b> C6: Organizes a scientific visit to the Nineveh Forest Arboretum	<b>Theory:</b> tillage <b>Practical:</b> Methods of propagating forest trees	Interactive lecture, brainstorm dialogue discussion, learning and reports	Exams, Homework, Reports
13	2Theory 3 Pract	<b>Theory:</b> c2, d1: Distinguishes between maximum and minimum temperatures and the extent of their impact on plant growth. Explains spring freeze and presents the types of trees that are tolerant to freeze and those that are not tolerant to freeze. The phenomenon of bare freeze. <b>practical :</b> d5: Performs developmental operations in the nursery, pruning and weedingt queen	<b>Theory:</b> Irrigation <b>Practical</b> Seed treatment before planting and vitality testing	Interactive lecture, brainstorm dialogue discussion, learning and reports	Exams, Homework, Reports



14	<b>2Theory 3 Pract</b>	<b>Theory:</b> C2: Explains the importance of irrigation in nurseries, irrigation systems used inside the canopy and outside the canopy cuttings <b>practical</b> c7: He collects and cultivates vertical and root	<b>Theory:</b> Fertilization  <b>Practical:</b> Developmental processes in the nursery Pots used in agriculture	Interactive lecture, brainstorming, dialogue discussion, self-learning and reports	Exams, Homework, Reports
15	<b>2Theory 3 Pract</b>	<b>Theory:</b> C3: Explains the types of fertilizers, fertilization periods, and the extent of the influence of environmental factors on plant fertilization <b>practical</b> : b7: Uses hormones (growth regulators) to root the cuttings	<b>Theory:</b> Pots used in agriculture <b>Practical</b> Planting and dispersing seeds	Interactive lecture, brainstorming, dialogue discussion, self-learning and reports	Exams, Homework, Reports

#### Course Evaluation

Evaluation Methods	Evaluation Date	Degree	Relative weight %
Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
Half exam ( theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
Final exam (practical)	Exam pract.	20	% 20
Final exam (theory)	Exam theory	40	% 40
		100	% 100

#### 11. Learning and Teaching Resources

##### Forest nurseries

Prof. Dr. Yavuz Shafiq Abdulla/Adel Al-Kanani

Teacher of Theory and Practically

Dr. Munther younis Muhammad

Head of the Dept. of Forestry Sciences

Prof. Dr. Muzahim Saeed Al-Bek

Teacher of Practically

M.M. Muhammad Samer Edres

Chairman of the Scientific Committee

Muhammad Younis Al-Allaf