Course Description Form

1. Course Name:
Nurseries and propagation
2. Course Code
NUPR217
3. Semester / Year:
Second semester/ second stage/ 2024-2025
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Attending
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theoretical + 3 Practical / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Wisam Khazaal Khalid E mail: wisam.khalid@uomosul.edu.iq Name: M.Dr.Yusra Mohammad Salih Email: yousra.ms@uomosul.edu.iq
8. Course Objectives
• The learner should be able to define the concept of nurseries and their types. • Choosing the appropriateness of the factors affecting the establishment of nurseries in the typical manner. • Identify nursery facilities and requirements – glass and plastic houses – wooden canopy – seed beds. • Understand the importance of studying reproductive science – studying and understanding the nature of reproduction • Distinguishing between types of reproduction in plants • Familiarity with the factors leading to seed dormancy • Understand the types of vegetative asexual reproduction in plants • Defining the concepts of reproduction through plant tissue culture
9. Teaching and Learning Strategies
– Interactive lecture – Brainstorming – Dialogue and discussion – Field Training – Practical exercises

- Field project
- Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical 3 Practical	theoretical: A1: Introduction to propagation - studying and understanding the nature of propagation - propagation nurseries - determining appropriate methods for plant propagation B1: He possesses the practical and mental knowledge and concepts that help him in studying the science of plant reproduction. practical: A1: The student gets to know the nursery and its accessories	theoretical: Reproduction science and factors affecting the establishment of nurseries practical: Conditions for establishing a nursery - planning the nursery	Interactive lecture, brainstorming, dialogue and discussion, short test, written test, and assignment . practical: Assigning practical tasks and reports	Semester exam 1, final exam Short exams, assignments, discussions
2	2 Theoretical 3 practical	Theoretical: A2: Identifying nurseries - types of nurseries - choosing nursery land - planning the nursery - nursery cycle - organizing the nursery - managing the nursery - conditions that must be met when establishing nurseries. B2: He possesses the knowledge and concepts that help him identify nursery facilities and requirements - glass and plastic houses - wooden canopy - seedbeds. C1: Determine the appropriate factors for establishing nurseries in a typical way practical: C3:The student uses the available information he needs to master his work in constructing buildings for the nursery	theoretical: An overview of the concept of nurseries, their benefits, and an introduction and definition of the types of nurseries and their importance. practical: Nursery facilities have their advantages and disadvantages	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical: Assigning practical tasks and reports	Semester exam 1, final exam Short exams, assignments, discussions
3	2 Theoretical 3 practical	theoretical: C2: Identifying the main methods of reproduction: sexual reproduction (seeds) - types of seeds - methods	theoretical: Sexual reproduction	Theoretical: Interactive lecture, brainstorming, dialogue and	Semester exam 1, final exam

		of extracting seeds - storing seeds practical: C3: The student uses the information he needs and the materials available to him in preparing various agricultural media for the growth and germination of horticultural plant seeds. C5: The student measures the speed and rate of seed germination	practical Measuring the speed and rate of germination of different seeds	discussion, self-learning practical : Assigning practical tasks and reports	Short exams, assignments, discussions
4	2 Theoretical 3 practical	Theoretical A3: Seed dormancy - factors leading to seed dormancy - factors affecting seed germination - agricultural media - multiple embryos - physiological foundations for the formation of asexual embryos. practical: C2: The student creates suitable agricultural media for some types of plants	theoretical: seeds dormancy practical: Disadvantages and advantages of containers used for planting seeds or seedlings	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical: Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions
5	2 Theoretical 3 practical	theoretical: A4: Introduction to asexual (vegetative) reproduction/purposes of vegetative reproduction. B3: Methods of vegetative propagation/propagation by cuttings and pens/physiological and anatomical foundations of propagation by cuttings C2:: Study of root formation on stem and root cuttings - Types of cuttings - Growth regulators and their uses in vegetative propagation - Factors that affect root formation on cuttings - Making cuts in the bases of cuttings practical:	theoretical: Climatic conditions and their impact on plant reproduction and plant selection practical: Mechanical, chemical and physical methods for breaking seed dormancy	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions

		C3: The student tests the sexual propagation (by seeds) of some plants C3: The student experiences the most important methods of treating seeds before planting.			
6	2 Theoretical 3 practical	Theoretical: C3: Propagation by layering / The benefit of propagation by layering - Methods of layering - Propagation by propagation / Propagation by crabs practical : C2: The student is familiar with methods of planting seeds	theoretical: Using different methods in vegetative propagation practical: How to prepare planting media and dates for planting seeds.	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions
7	2 Theoretical 3 practical	theoretical: Propagation by bulbs and corms, propagation by division, propagation by rhizomes, propagation by cuttings, propagation by tubers. practical: C4: The student characterizes the vegetative reproduction of plants	theoretical: Using different methods in vegetative propagation practical: Vegetative propagation methods	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions
8	2 Theoretical 3 practical	Theoretical C5: Propagation by grafting and Budding / Cases of the grafting procedure - Purposes of grafting - Steps in which the graft and rootstock are joined practical : C2 Familiarizes the student with the method of reproduction by cuttings	theoretical: grafting and Budding practical: Methods of preparing different types of cuttings, dates for taking them, methods of treating them with rooting materials, and methods of preparing these materials	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions
9	2 Theoretical 3 practical	theoretical: B4: Factors affecting the success of the vaccination process Vaccination methods - installation methods Assets used in propagating some important types of horticultural plants	theoretical: Factors affecting the success of Budding practical: Learn about the different methods of vaccination and installation, the dates	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning	Semester exam 1, final exam , Report

		practical: C4: The student examines the method and purpose of propagation by grafting and installation	of vaccination or installation, and methods of preparing the grafts	practical : Assigning practical tasks and reports	Short exams, assignments, discussions
10	2 Theoretical 3 practical	Theoretical: A5: Mutual effects between scion and rootstock practical : C3 The student uses available information to use other vegetative propagation methods B1 possesses the practical and mental knowledge and concepts that help him choose the appropriate propagation method for each plant	theoretical: Mutual effects between scion and rootstock practical: Propagation by layering: advantages, disadvantages and types - propagation by ink - by crabs - by cuttings - propagation By specialized stems and roots, corms, bulbs, tubers,‘	Theoretical: Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions
11	2 Theoretical 3 practical	theoretical: B5: Agricultural operations in nurseries - irrigation Removing plant leaves - uprooting plants - classifying plants practical: C2: The student is familiar with methods of irrigating plants D3: The student participates with community members and works to educate them about the importance of using appropriate irrigation methods to reduce water waste.	theoretical: Irrigation methods, disadvantages and advantages of each method practical: Irrigation methods, disadvantages and advantages of each method	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	final exam Short exams, assignments, discussions
12	2 Theoretical 3 practical	theoretical: A6: Fertilization used in propagation nurseries practical: C5: The student balances th fertilization of horticultural plants D3: participates with community members and works to educate them about the importance of	theoretical: Fertilization practical: Identify the most important types of fertilizers used in plants and ways to add them to plants	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical: Assigning practical tasks and reports	final exam Short exams, assignments, discussions

		using organic fertilizers as an alternative to chemical fertilizers			
13	2 Theoretical 3 practical	Theoretical B6: Methods used in plant tissue culture . practical: C3: The student uses the available information he needs to plant and produce trees and various annuals C5: successfully balances the investment and use of annual and perennial plants and employs them in a way that suits the market or farmers' need for those plants.	theoretical: plant tissue culture practical: Identifying the types of perennial and annual plants and methods of growing them in the nursery and producing seedlings (fruit, ornamental, vegetables)	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical: Assigning practical tasks and reports	final exam Short exams, assignments, discussions
14	2 Theoretical 3 practicals	theoretical: B7: Storing plants - caring for stored plants - quality of stored plants / marketing nursery products. Plant storage: storing plants in refrigerated rooms practical: C4: The student identifies the most important growth regulators A2: The student identifies the most important growth regulators suitable for each stage of plant propagation	theoretical: Storing plants practical: Methods of preparing growth regulators, their importance in rooting seedlings, and specifications of good seedlings	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical: Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions
15	2 Theoretical 3 practical	Theoretical Practical case study of the propagation of different types of plants practical : The student learns the most important Types of plant environments through a scientific visit A scientific visit to one of the environmental sites.	theoretical: Study different cases practical: Writing a report on the most important propagated plants and horticultural operations carried out in the nursery.	Theoretical: Interactive lecture, brainstorming, dialogue and discussion, self-learning practical : Assigning practical tasks and reports	Semester exam 1, final exam , Report Short exams, assignments, discussions

11. Course Evaluation

Evaluation Methods	Evaluation date (week)	Degree	Percentage (%)
Report 1	fourth week	2.5	2.5
Report 2	The fifth week	2.5	2.5
Short test (1) Quiz	the sixth week	2	2

Short test (2) Quiz	The fourteenth week	2	2
Short test (3) Quiz	The fifteenth week	1	1
Semester test (1)	the sixth week	7.5	7.5
Semester test (2)	The eleventh week	7.5	7.5
Final theoretical test	Final semester exams	40	40
Practical field project	The fifteenth week	5	5
Field evaluation	The third and fifth week	2	2
Short practical test (1) Quiz	The first week	1	1
Short practical test (2) Quiz	fourth week	0.5	0.5
Short practical test (3) Quiz	The fourteenth week	1	1
Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
Final practical test	Final semester exams	20	20
Total	100	%100	%100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Salman, Muhammad Abbas. 1988. Propagation of horticultural plants. Ministry of Higher Education and Scientific Research – University of Baghdad. Iraq.
Main references (sources)	Khalil, Mahmoud Abdel Aziz. 2019. Encyclopedia of horticultural plants `Basics – Nurseries and their care – Propagation. Modern Book House.
Recommended books and references (scientific journals, reports...)	Hartmann, H. T., & Kester, D. E. (1975). Plant Propagation: Principles and Practices (p. 609). Englewood Cliffs: Prentice-Hall.
Electronic References, Websites	None

Theoretical lecturer:

Dr. Wisam Khazaal Khalid

Practical lecturer

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Chairman of the Scientific Committee

Prof. Dr. Jassim Mohammed Alwan

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