Course Description Form

Plant Environment
1. Course Code
PLEN209
2. Semester / Year:
First semester 2023−2024
3. Description Preparation Date:
1/2/2024
4. Available Attendance Forms:
Attending
5. Number of Credit Hours (Total) / Number of Units (Total)
2 Theoretical + 3 Practical / 3.5
6. Course administrator's name (mention all, if more than one name)
Name: m. Dr. Yusra Mohammad Saleh Email: yousra.ms@uomosul.edu.iq Name: m. m. Zainab Hammed Abdullah
7. Course Objectives

Theoretical:	**Practical:**
1. Introducing students to ecology, its divisions, the ecosystem, and the effects of the environment plants 2. Introducing the student to the types of plant	1− Introducing students to the most important of Study the most important factors affecting the environment factors affecting the plants.

environment in Iraq. 3. The student is familiar with the climate of Iraq and its impact on the spread of plants.	2- The student learns how to measure the severity of various environment factors . . 3- Teaching students about the most important methods and methods for getting rid of harmful factors to plants.

8. Teaching and Learning Strategies

Theoretical 1- Live lectures with students. 2- PowerPoint slides. 3- Introduction pictures. 4- Audio recordings. 5- Dialogues and discussion. 6- Assigning tasks and reports	**Practical:** 1- Live lectures with students. 2- PowerPoint slides. 3- Scientific visits to fruit orchards. 4- Applying some practical skills in nursery facilities? 5- Dialogues and discussions with students. 6- Assigning tasks and reports

9. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2 Theoretical** **3 Practical**	**Theoretical:** **A1** The student learns about the most important environmental factors. **practical:** **A2** The student explains the first most important environmental factor, which is the soil factor	**Theoretical:** Definition of ecology and its relationship with ‹other sciences **Practical:** Soil management and preservation of fertility	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical:** Assigning practical tasks and reports	Short exams, assignments, discussions
2	**2 Theoretical** **3 Practical**	**Theoretical:** **A1** defines the soil texture **C4** The student identifies environmental factors **A4** The student summarizes the importance of soil as an environmental	**Theoretical:** Environmental factors/soil factor includes: the importance of soil for plants - definition of soil - method of soil formation - types of soil - soil texture and its importance to plants -	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion	Short exams, assignments, discussions

		factor **Practical:** **C2** The student explains the types of fertilizers **C4** The student identifies organic fertilizers	soil fertility - soil organisms and their importance. **Practical:** Fertilization and its method water and its importance to plants/irrigation methods used in irrigating horticultural plants	**Practical:** Assigning practical tasks and reports	
3	**2 Theoretical** **3 Practical**	**theoretical:** **A4** The student explains the functional harms of salts **C2** The student explains the distribution of halophytes . **Practical:** **A1** reminds the student about the most important devices for measuring temperature and humidity **A3** The student uses thermometers to measure the temperature of the greenhouse	**Theoretical:** Halophytes and their distribution - functional effects of salts - human impact on soils. **Practical** Measure temperature and humidity.	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical :** Assigning practical tasks and reports	Short exams, assignments, discussions
4	**2 Theoretical** **3 Practical**	**Theoretical:** **A1** The student mentions the importance of water for plants **A4** The student summarizes pictures of water in the atmosphere **Practical:** **C5** The student measures the chlorophyll content of plant leaves.	**Theoretical:** The importance of water to plants - atmospheric humidity and its importance to plants - soil moisture - forms of falling rain and its importance to plants. **Practical:** Estimating the chlorophyll content of leaves of some plants	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical:** Assigning practical tasks and reports	Short exams, assignments, discussions
5	**2 Theoretical** **3Practical**	**Theoretical**: **C2** The student explains the states of	**Theoretical:** Drought - conditions of water in the soil - the	**Theoretical:** Live lectures, PowerPoint	Short exams, assignments,

		water in the soil **Practical:** **C4** The student analyzes the amount of carbohydrates in a plant	importance of soil moisture for plants - division of plants based on water relations / human influence on the environmental factor **Practical:** Estimating the carbohydrate content of plants. Methods of measuring temperature .	slides, introductory images, direct dialogues and discussion **Practical :** Assigning practical tasks and reports	discussions
6	**2 Theoretical** **3 Practical**	**Theoretical**: **A1** The student knows the photoluminescence **A4** The student discusses the importance of temperatures for plants **Practical:** **A4** The student compares different devices for measuring temperatures, which is preferable?	**Ttheoretical:** The temperature factor includes: temporary changes in temperature - temporal changes in temperature - the importance of temperature for plants - thermal synchrony - stimulating effects. **Practical:** Heat and its importance for the cultivation, growth and fruits of horticultural plants.	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical :** Assigning practical tasks and reports	Short exams, assignments, discussions
7	**2 Theoretical** **3 Practical**	**theoretical:** **C3** The student explains the most important adaptations that characterize drought-resistant plants **C1** The student enumerates the harms of winter drought **Practical:** **C2** The student explains the tolerance of some plants to low temperatures	**Theoretical:** Stimulating effects of low temperature - cold damage - plant adaptations to resist low temperature - winter drought damage. **Practical:** Low temperature and its effect on plants.	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical :** Assigning practical tasks and reports	Short exams, assignments, discussions
8	**2 Theoretical** **3 Practical**	**Theoretical** **C2** The student explains the human impact on rising temperatures **Practical:** **C1** The student lists	**Theoretical:** High temperature damage - temperature and geographical distribution of plants - human impact on temperature	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion	Short exams, assignments, discussions

		the most important ways to reduce the damage of high temperature	**Practical:** Methods to reduce the impact of low temperatures on horticultural plants	**Practical :** Assigning practical tasks and reports	
9	**2 Theoretical** **3 Practical**	**Theoretical:** **A**1 The student mentions the importance of hoping for light **Practical:** **A1** The student mentions the most important lighting measuring devices **B5** The student measures the intensity of lighting in the greenhouse	**Theoretical:** The light factor includes: definition of light and its parts - locational differences in light intensity - the importance of light for plants - the effect of light on the morphology of plants - the effect of light on some physiological characteristics of plants - photosynthesis - control of ligh **Practical:** Learn about methods for measuring light intensity and their devices	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical :** Assigning practical tasks and reports	Short exams, assignments, discussions
10	2 Theoretical 3 practical	**Theoretical:** **A4** The student summarizes the most important atmospheric pollutants **Practical**: **C4** What does the student recommend to reduce global warming?.	theoretical: The atmospheric factor includes: composition of the atmosphere - atmospheric pollutants - the Co_2 cycle and its relationship to the photosynthesis process - soil aeration and its relationship to plant growth practical: The harmful effects of global warming and methods to reduce them	Theoretical: Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion practical : Assigning practical tasks and reports	Short exams, assignments, discussions
11	**2 Theoretical** **3 practical**	**Theoretical:** **C3** The student explains the most important effect of wind on plants	**Theoretical:** Wind - Windbreaks - The effect of wind on plants. **Practical:**	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion	Short exams, assignments, discussions

		Practical: **C3** The student knows how to plant the most important windbreaks.	Windbreaks and their importance to plants, creating windbreaks and the plants used in them	**Practical :** Assigning practical tasks and reports	
12	**2 Theoretical** **3 practical**	**Theoretical:** **C**2 The student explains the chemical opposite **Practical:** **A2** The student identifies symbiotic phenomena between living organisms	**Theoretical:** The biological factor includes: classification of symbiotic phenomena - pollination of plants by animals - dispersal by animals - climbing plants - epiphytes - parasitism of vascular plants - symbiotic nitrogen fixation - fungal nutrition - biochemical antagonism. **Practical:** Identify the most important biological organisms	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **practical:** Assigning practical tasks and reports	Short exams, assignments, discussions
13	**2 Theoretical** **3 practical**	**Theoretical** **A5** The student distinguishes types Different plant environments **Practical:** **A4** The student compares different types of environments	**Theoretical:** Types of plant environments in Iraq. The climate of Iraq and its effect on the spread of plants **Practical:** Identify different types of environments	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **Practical:** Assigning practical tasks and reports	Short exams, assignments, discussions
14	**2 Theoretical** **3 practicals**	**Theoretical:** **C1** The student enumerates the types of environmental pollution **Practical:** **A4** The student summarizes the most important damage that fires cause to the environment	**Theoretical:** Environmental pollution and its types, plant reagents and the role of plants in preserving plants from pollution, Fires, their types, and plant adaptations to fires. Allelopathic **practical:** Studying the harm caused by pollution to horticultural plants Explain the impact of fires on changes in the surrounding climate..	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **practical :** Assigning practical tasks and reports	Short exams, assignments, discussions

15	**2 Theoretical** **3 practical**	**Theoretical** The student learns the most important Types of plant environments through a scientific visit. practical : A scientific visit to one of the environmental sites.	**Theoretical:** A scientific visit to a nearby site and submit a report on the most important processes in plant environments **practical:** Writing a report on the most important propagated plants and horticultural operations carried out in the nursery.	**Theoretical:** Live lectures, PowerPoint slides, introductory images, direct dialogues and discussion **practical :** Assigning practical tasks and reports	Short exams, assignments, discussions

10. Course Evaluation

Evaluation Methods	Evaluation date (week)	Degree	Percentage (%)
Daily spoken examination	Theoretical: 2-15 Practical: 2 – 15	Theoretical 3 Practical 2	5%
Daily written exams	Theoretical: 2-15 Practical: 2 – 15	Theoretical 5 Practical 5	10%
2 semester exams during the semester for both practical and theoretical	Theoretical: 7-13 Practical: 6 – 14	Theoretical 10 Practical 5	15%
Assigning students to prepare reports on study topics	Theoretical: 15 Practical: 15	Theoretical 7 Practical 3	10%
Final exam	Theoretical Practical	Theoretical 40 Practical 20	40% 20%
Total		100	100%

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**1- Ecology written by Hikmat Abbas Al-Ani and Raad Hashem Bakr.** **2- Ecology written by Bahram Khader .** **3- Ecology and the quality of our environment, translated by Suhaila Abbas Ahmed and Tariq Muhammad Saleh**
Main references (sources)	**1- Ecology written by Hikmat Abbas Al-Ani and Raad Hashem**

	Bakr. **2- Ecology written by Bahram Khader .** **3- Ecology and the quality of our environment, translated by Suhaila Abbas Ahmed and Tariq Muhammad Saleh**
Recommended books and references (scientific journals, reports…)	**1- Plant ecology, written by Ahmed Muhammad Mujahid** **2- The relationship of water to plants, Saadallah Al-Naimi** **3- Plant plant Abdul Azim Kazem**
Electronic References, Websites	FAO reports, bulletins and studies

Theoretical subject teacher:
M. Dr. Yusra Mohammed Saleh

Practical subject teachers:
M.M. Zainab Hammed

Chairman of the Scientific Committee:
Prof. Dr. Nabil Mohammad Amin Al-Imam

Head of Horticulture and Landscape Architecture:
Prof. Dr. Asmaa Mohammad Adel

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