Course Description Form

1. Course Name:

Plant Environment

2. Course Code:

PLEN209

3. Semester / Year:

2024/2025

4. Description Preparation Date:

1/2/2025

5. Available Attendance Forms:

Attended + electronic

6. Number of Credit Hours (Total) / Number of Units (Total)

2 Theoretical + 3 Practical / 3.5 Unit

7. Course administrator's name (mention all, if more than one name)

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8. Course Objectives

- Learn about ecology, what are the sections of ecology, and the most important terms in ecology
- Learn about the wavelength of light and the importance of each type on plant growth
- Recognize the importance of light rays on physiological processes
- It shows the difference in temperature and its effect on the growth, distribution and adaptation of plants according to the appropriate environment
- It explains the reasons for temperature changes on the surface of the Earth and its relationship to plant growth adaptation. It also identifies the most important plant adaptations in low- and high-temperature areas.
- It classifies the forms of water in nature and how plants are affected by them. It also mentions the most important adaptations that contribute to reducing water loss
- Understands the effect of environmental factors on air humidity and also describes the effect of air humidity on plant growth
- It shows the importance of some gases, such as nitrogen, oxygen, and carbon dioxide, on plant growth
- Determines the direct and indirect effects of wind on the growth and spread of plants
- Identify the most important environmental factors affecting atmospheric pressure
- Mention the most important weather factors affecting soil formation and development and the difference between soil types on plant growth
- Define both the biological community and the plant community, giving examples of each type

9. Teaching and Learning Strategies

Theoretical:	Practical

• Interactive lecture • Brainstorming • Dialogue and discussion • Assigning tasks and reporting • The student is assigned to prepare reports based on his own diligence and prepared for discussion with the students	• Assigning group work to reveal leadership skills • Assigning tasks and a report for each lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical + 3 Practical	a1: cans define ecology identify the most important types of ecology - what is plant ecology B1: cans differentiate between the departments of ecology depending on the type or group of types of biology. He is familiar with the most important terms in ecology. A9: Defining self-ecology - recognizing the sections of self-ecology as well as recognizing group ecology - remembering the sections of group ecology - memorizing the areas of group ecology	Theoretical: An introductory introduction to environmental science Practical: Definition of Self-Ecology & Identify the sections of ecology	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
2	2 Theoretical + 3 Practical	A2: Identify the most important environmental factors affecting the plant environment - Mention the effect of light on plants - Mention the types of light rays Recognizes the effect of lighting intensity on physiological processes in plants - Memorizes the types of rays in the visible spectrum - Preserves the effect of wavelength on physiological processes Recognizes the effect of light on the shape and structural characteristics of plants A10: Knows the factors that affect the intensity of light - compares the changes that occur in the intensity of light on plants - recognizes scattered light	Theoretical: The effect of light factor on the growth and distribution of plants Practical: light	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
3	2 Theoretical + 3 Practical	B2: Links the importance of lighting and photosynthesis - Connects the importance of lighting and breathing - It links the importance of lighting and the opening and closing of stomata Explains the effect of light on the growth and flowering of plants - Explains the effect of light on movement - Explains the effect of light on seed germination B7: Explains the effect of light on	Theoretical: The importance of lighting for events Vitality Practical: The importance of light for plants	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions

		the synthesis of chlorophyll - Explains the effect of light on the number of chloroplasts - Explains the effect of light on changes in leaf shape			
4	2 Theoretical + 3 Practical	b3: Shows the difference in temperature and its effect on plant growth - It shows the difference in temperature and its effect on the distribution of plants b4: shows the effect of temperature on the distribution Plant according to the conditions suitable for plant growth A11: Recognizes the concept of heat - Gives examples of units for measuring temperature - Understands the process of converting degrees Fahrenheit to Celsius	Theoretical: Heat and its effect on plants Practical: temperature	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
5	2 Theoretical + 3 Practical	B5: Characterizes periodic changes in temperature during the season - Determines the effect of temperature changes on plant physiology Explains the causes of temperature change on the surface of the Earth and its relationship to plant growth adaptation. Change links vegetation cover to the temperature of the surrounding air B8: Expresses the importance of temperature in the process of respiration - Expresses the importance of temperature in the process of transpiration - Expresses the importance of temperature in the process of reproduction	Theoretical: the actual value of temperatures Practical: The importance of temperature change and its effect on physiological processes	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
6	2 Theoretical + 3 Practical	A3: Classifies the forms of water in nature and its effects on plants - Describes the most important adaptations that contribute to reducing water loss Describes the role of water and its importance on the life of plants. Gives examples of sources and images of water forms in nature A12: Determines the types of rainfall - Classifies the seasonal distribution of rainfall - Schedules the amount of rainfall that falls	Theoretical: Water as an environmental factor in plant life Practical: Natural sources of water	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
7	2 Theoretical + 3 Practical	A4: Understand the effect of environmental factors on air humidity Describes the effect of atmospheric humidity on plant growth Gives examples of dividing plants according to their water needs - Explains the classification of plants according to their adaptation to	Theoretical: Atmospheric humidity as an environmental factor in plant life Practical: humid weather	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical:	Short exams, assignment of duties, discussions

		drought B9: Explains absolute humidity - Explains methods for measuring atmospheric pressure - Explains methods for measuring relative humidity		Assigning tasks and reporting	
8	2 Theoretical + 3 Practical	A5: Shows the effect of wind on the process of photosynthesis - Shows the effect of wind on the process of transpiration - It shows the effect of wind on the process of opening and closing stomata Shows the effect of wind on the flowering process. Shows the effect of wind on the reproductive process B10: Explains the effect of wind on photosynthesis - Explains the effect of wind on transpiration - Explains the effect of wind on the flowering process	Theoretical: The effect of wind on physiological processes Practical: The effect of wind on physiological processes	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
9	2 Theoretical + 3 Practical	A6: Enumerates the types of winds - explains the difference between permanent winds and non-permanent winds Determines the direct and indirect effects of wind on living organisms - enumerates the types of air masses B11: He uses an anemometer - He uses a wind instrument - He uses an electronic device to measure wind speed	Theoretical: Wind, its types, and its effect on plant distribution Practical: Wind and methods of measuring it	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
10	2 Theoretical + 3 Practical	B6: Determines the factors affecting atmospheric pressure - Shows the main ranges of atmospheric pressure Determines the distribution of atmospheric pressure and air circulation. He enumerates the three types of trade winds blowing from the horse shows to the tropical rainforest A13: Learn about the most important devices for measuring atmospheric pressure - use a mercury barometer - use a metal barometer	Theoretical: Atmospheric pressure and its effect on plant growth Practical: atmospheric pressure	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
11	2 Theoretical + 3 Practical	A7: Mention the most important weather factors affecting soil formation. Compare between sandy and clay soils and their ability to retain water and air. Explain the spread and penetration of roots in sandy soils compared to clay soils Explain the characteristics of soils with different textures. Learn about the forms of soil water	Theoretical: Geological strata Practical: geological strata and soils	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions

		Learn about the forms of soil water a14 : Learn about methods for measuring field capacity - Learn about defects in soft soil		Practical: Assigning tasks and reporting	
12	2 Theoretical + 3 Practical	a8: Defines both the biological community and society Vegetarian, giving examples of each type - Explains the phenomenon of typesetting with drawing Mention the stages or steps of vegetation formation. Differentiate between the terms competition and interaction b12: shows the regular method - shows the random method	Theoretical: biological community and vegetation Practical: Biological community and vegetation	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
13	2 Theoretical + 3 Practical	d1: Infer the effect of environmental conditions, such as rain, temperature, light, and soil, on the spread and distribution Plants according to suitable conditions d2: The student infers the effect of one environmental factor on the adaptations of field crops	Theoretical + practical: report and discussion	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
14	2 Theoretical + 3 Practical	e1: Determines which environmental factors have the greatest influence on the growth and spread of plants and why? e3: Decide which devices are most effective for measuring temperature and why?	Theoretical + practical: a field visit to Weather forecasts in Mosul for review On the most important devices and how to use them	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
15	2 Theoretical + 3 Practical	e2: Determines which types of soil are suitable according to the type The crop grown and why? e4: Determine which types of soil are appropriate according to the type of crop grown and why?	Theoretical + practical: A field visit to the College of the Nineveh Agriculture Directorate to learn about the most important devices and how to use them	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions

11. Course Evaluation

	Evaluation methods	Evaluation date (week)	Degree	Percentage weight %
1	Report 1	Fourth week	2.5	2.5
2	Report 2	Fifth week	2.5	2.5
3	Short test (1) Quiz	Sixth week	2	2
4	Short test (2) Quiz	Fourteenth week	2	2
5	Short test (3) Quiz	Fifteenth week	1	1
6	Semester test (1)	Sixth week	7.5	7.5
7	Semester test (2)	Eleventh week	7.5	7.5
8	Final theoretical test	Final semester test	40	40
9	Practical field project	The fifteenth week	5	5

10	Field evaluation	Third and fifth week	2	2
11	Practical short test (1) Quiz	First week	1	1
12	Short practical test (2) Quiz	Fourth week	0.5	0.5
13	Short practical test (3) Quiz	Fourteenth week	1	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test	Final semester test	20	20
	Total	100	Degree	Percentage weight %

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Ecology
Main references (sources)	Introduction to ecology
Recommended books and references (scientific journals, reports...)	Climate and environment
Electronic References, Websites	Non

مدرس المادة النظري: م.د. عمر غياث الدين عبدالغفور المزوري

مدرس المادة العملي: م.م عمار حبيب محمود

مدرس العلمي : م.صدام إبراهيم يحيى

رئيس اللجنة العلمية: أ.د. وئام رشيد يحيى

رئيس القسم: أ.م.د ميسر محمد عزيز