

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: <u>yousra.ms@uomosul.edu.iq</u> | | | | |
| Name: m. m. Zainab Hammed Abdullah | | | | |
| | | | | |
| 7. Course Objectives | | | | |
| Theoretical: | Practical: | | | |
| 1. Introducing students to ecology, its divisions, the | 1- Introducing students to the most important of | | | |
| ecosystem, and the effects of the environment plants | Study the most important factors affecting the | | | |
| 2. Introducing the student to the types of plant | environment factors affecting the plants. | | | |

| environment in Iraq. | 2- The student learns how to measure the severity of |
|--|---|
| 3. The student is familiar with the climate of Iraq and | various environment factors |
| its impact on the spread of plants. | 3- Teaching students about the most important |
| | methods and methods for getting rid of harmful factors |
| | to plants. |
| 8. Teaching and Learning Strategies | |
| | |
| Theoretical | Practical: |
| Theoretical 1- Live lectures with students. | Practical: 1- Live lectures with students. |
| Theoretical1- Live lectures with students.2- PowerPoint slides. | Practical: 1- Live lectures with students. 2- PowerPoint slides. |
| Theoretical1- Live lectures with students.2- PowerPoint slides.3- Introduction pictures. | Practical: 1- Live lectures with students. 2- PowerPoint slides. 3- Scientific visits to fruit orchards. |
| Theoretical1- Live lectures with students.2- PowerPoint slides.3- Introduction pictures.4- Audio recordings. | Practical: 1- Live lectures with students. 2- PowerPoint slides. 3- Scientific visits to fruit orchards. 4- Applying some practical skills in nursery facilities? |

6- Assigning tasks and reports

6- Assigning tasks and reports

9. Course Structure

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

| | | factor | soil fertility - soil | | |
|---|--------------------|-------------------------|---------------------------|-----------------|--------------|
| | | D ractical: | organisms and their | | |
| | | Tacucai. | importance | Ducation | |
| | | | importance. | Practical: | |
| | | C2 The student | | Assigning | |
| | | explains the types of | Practical: | practical tasks | |
| | | fertilizers | Fertilization and its | and reports | |
| | | C4 The student | method water and its | | |
| | | identifies organic | importance to | | |
| | | fertilizers | plants/irrigation methods | | |
| | | | used in irrigating | | |
| | | | horticultural plants | | |
| 3 | 2 Theoretical | theoretical: | Theoretical: | Theoretical: | Short |
| U | 3 Practical | A4 The student | Halophytes and their | Live lectures | exams |
| | JIIactical | avplains the functional | distribution functional | DowerPoint | examo, |
| | | homma of solts | affects of colta human | rowerronn | discussions |
| | | The steedent | effects of saits - numan | sindes, | discussions |
| | | C2 The student | impact on soils. | introductory | |
| | | explains the | - | images, direct | |
| | | distribution of | Practical | dialogues and | |
| | | halophytes | Measure temperature and | discussion | |
| | | | humidity. | Practical : | |
| | | | | Assigning | |
| | | Practical: | | practical tasks | |
| | | A1 reminds the | | and reports | |
| | | student about the most | | Ĩ | |
| | | important devices for | | | |
| | | measuring temperature | | | |
| | | and humidity | | | |
| | | A 2 The student uses | | | |
| | | AS The student uses | | | |
| | | thermometers to | | | |
| | | measure the | | | |
| | | temperature of the | | | |
| | | greenhouse | | | |
| 4 | 2 Theoretical | Theoretical: | Theoretical: | Theoretical: | Short |
| | 3 Practical | A1 The student | The importance of water | Live lectures, | exams, |
| | | mentions the | to plants - atmospheric | PowerPoint | assignments, |
| | | importance of water | humidity and its | slides, | discussions |
| | | for plants | importance to plants - | introductory | |
| | | A4 The student | soil moisture - forms of | images, direct | |
| | | summarizes pictures of | falling rain and its | dialogues and | |
| | | water in the | importance to plants. | discussion | |
| | | atmosphere | portunite to prants. | | |
| | | atmosphere | Practical | Practical | |
| | | | Estimating the | Assigning | |
| | | Draatiasle | ablorophyll content of | restical tasks | |
| | | Fractical: | laguage of agree along to | practical tasks | |
| | | C5 The student | leaves of some plants | and reports | |
| | | measures the | | | |
| | | chlorophyll content of | | | |
| | | plant leaves. | | | |
| 5 | 2 Theoretica | Theoretical: | Theoretical: | Theoretical: | Short |
| | 3Practical | C2 The student | Drought - conditions of | Live lectures, | exams, |
| | | explains the states of | water in the soil - the | PowerPoint | assignments, |

| r | | | | | |
|---|--------------------|---------------------------------|---------------------------|------------------|--------------|
| | | water in the soil | importance of soil | slides, | discussions |
| | | | moisture for plants - | introductory | |
| | | | division of plants based | images. direct | |
| | | | on water relations / | dialogues and | |
| | | Practical | human influence on the | discussion | |
| | | C4 The student | anyironmontal factor | Dractical . | |
| | | c4 The student | Dreatical. | A saisning | |
| | | analyzes the amount of | Practical: | Assigning | |
| | | carbohydrates in a | Estimating the | practical tasks | |
| | | plant | carbohydrate content of | and reports | |
| | | | plants. Methods of | | |
| | | | measuring temperature. | | |
| 6 | 2 Theoretical | Theoretical: | Ttheoretical: | Theoretical: | Short |
| | 3 Practical | A1 The student knows | The temperature factor | Live lectures. | exams. |
| | | the photoluminescence | includes: temporary | PowerPoint | assignments |
| | | $\mathbf{\Lambda}4$ The student | changes in temperature - | slides | discussions |
| | | discusses the | tomporal changes in | introductory | uiscussions |
| | | increases the | temporar changes in | introductory | |
| | | importance of | temperature - the | inflages, direct | |
| | | temperatures for plants | importance of | dialogues and | |
| | | | temperature for plants - | discussion | |
| | | | thermal synchrony - | | |
| | | | stimulating effects. | | |
| | | Practical: | - | | |
| | | A4 The student | Practical: | Practical : | |
| | | compares different | Heat and its importance | Assigning | |
| | | devices for measuring | for the cultivation | practical tasks | |
| | | temperatures which is | growth and fruits of | and reports | |
| | | preferable? | horticultural plants | und reports | |
| 7 | 2 Theoretical | theoretical | Theoretical | Theoretical | Short |
| / | 2 Theoretical | C2 The student | Stimulating offects of | Line le stures | Short |
| | 5 Practical | | Sumulating effects of | Live lectures, | exams, |
| | | explains the most | low temperature - cold | PowerPoint | assignments, |
| | | important adaptations | damage - plant | slides, | discussions |
| | | that characterize | adaptations to resist low | introductory | |
| | | drought-resistant | temperature - winter | images, direct | |
| | | plants | drought damage. | dialogues and | |
| | | C1 The student | | discussion | |
| | | enumerates the harms | Practical: | | |
| | | of winter drought | Low temperature and its | Practical : | |
| | | C | effect on plants. | Assigning | |
| | | Practical: | L | practical tasks | |
| | | C2 The student | | and reports | |
| | | explains the tolerance | | und reports | |
| | | of some plants to low | | | |
| | | tomporatures | | | |
| 0 | 2 Theoretical | Theoretical | Theoretical | Theoretical | Chart |
| o | 2 Incoretical | C2 The student | Theoretical: | | Short |
| | 3 Practical | C2 The student | High temperature | Live lectures, | exams, |
| | | explains the human | damage - temperature | PowerPoint | assignments, |
| | | impact on rising | and geographical | slides, | discussions |
| | | temperatures | distribution of plants - | introductory | |
| | | | human impact on | images, direct | |
| | | Practical: | temperature | dialogues and | |
| | | C1 The student lists | - | discussion | |

| | | the most important ways to reduce the damage of high temperature | Practical:Methods to reduce theimpact of lowtemperatures on | Practical : Assigning practical tasks | |
|----|------------------------------|---|--|--|--|
| 9 | 2 Theoretica 3 Practical | Theoretical: A1 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 | and reportsTheoretical:Livelectures,PowerPointslides,introductoryimages,directdialoguesanddiscussion | 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 | | Windbreaks and their | Practical : | |
|----|---------------|-----------------------------|-----------------------------|--------------------|--------------|
| | | C3 The student knows | importance to plants | Assigning | |
| | | how to plant the most | creating windbreaks and | practical tasks | |
| | | important windbreaks. | the plants used in them | and reports | |
| 12 | 2 Theoretica | Theoretical: | Theoretical: | Theoretical: | Short |
| | 3 practical | C2. The student | The biological factor | Live lectures | exams |
| | • • | explains the chemical | includes: classification of | PowerPoint | assignments |
| | | opposite | symbiotic phenomena - | slides | discussions |
| | | opposite | pollination of plants by | introductory | albeassions |
| | | | animals - dispersal by | images direct | |
| | | | animals - climbing plants | dialogues and | |
| | | | - eninbytes - parasitism | discussion | |
| | | | of vascular plants - | discussion | |
| | | | symbiotic nitrogen | | |
| | | | fixation - fungal nutrition | | |
| | | Practical | - biochemical | nractical | |
| | | A 2 The student | antagonism | Assigning | |
| | | identifies symbiotic | antagomsin. | practical tasks | |
| | | nhenomena hetween | Practical | and reports | |
| | | living organisms | Identify the most | and reports | |
| | | irving organisms | important biological | | |
| | | | organisms | | |
| 13 | 2 Theoretica | Theoretical | Theoretical: | Theoretical: | Short |
| 10 | 3 practical | A5 The student | Types of plant | Live lectures | exams |
| | 5 practical | distinguishes types | environments in Iraq | PowerPoint | assignments |
| | | Different plant | The climate of Iraq and | slides | discussions |
| | | environments | its effect on the spread of | introductory | albeassions |
| | | | plants | images. direct | |
| | | | P | dialogues and | |
| | | | Practical: | discussion | |
| | | Practical: | Identify different types | Practical: | |
| | | A4 The student | of environments | Assigning | |
| | | compares different | | practical tasks | |
| | | types of environments | | and reports | |
| 14 | 2 Theoretical | Theoretical: | Theoretical: | Theoretical: Short | |
| | 3 practicals | C1 The student | Environmental pollution | Live lectures, | exams, |
| | | enumerates the types | and its types, plant | PowerPoint | assignments, |
| | | of environmental | reagents and the role of | slides, | discussions |
| | | pollution | plants in preserving | introductory | |
| | | | plants from pollution, | images, direct | |
| | | | Fires, their types, and | dialogues and | |
| | | | plant adaptations to fires. | discussion | |
| | | | Allelopathic | | |
| | | Practical: | practical: | practical : | |
| | | A4 The student | Studying the harm | Assigning | |
| | | summarizes the most | caused by pollution to | practical tasks | |
| | | important damage that | horticultural plants | and reports | |
| | | fires cause to the | Explain the impact of | | |
| | | environment | fires on changes in the | | |
| | | | surrounding climate | | |

| 15 | 2 Theoretical | Theo | retical | Theo | oretical: | Theoretical: | Short |
|----------|---------------|------------------------|---------------------|----------------|----------------------|------------------|--------------|
| | 3 practical | The student learns the | | A so | cientific visit to a | Live lectures, | exams, |
| | | most | important | neart | by site and submit a | PowerPoint | assignments, |
| | | Types | s of plant | repor | t on the most | slides, | discussions |
| | | envire | onments through | impo | rtant processes in | introductory | |
| | | a scie | ntific visit. | plant | environments | images, direct | |
| | | practi | cal : | prac | tical: | dialogues and | |
| | | A sc | cientific visit to | Writi | ing a report on the | discussion | |
| | | one | of the | most | important | practical : | |
| | | enviro | onmental sites. | propa | agated plants and | Assigning | |
| | | | | horti | cultural operations | practical tasks | |
| | | | | carrie | ed out in the | and reports | |
| 10 (| | untion | | nuise | | | |
| 10. 0 | Jourse Evan | uation | 1 | | Γ | I | |
| Evaluati | on Methods | | Evaluation | date | Degree | Percentage (% |) |
| | | 1 | (week) | | m) | F 0/ | |
| Daily | sp | oken | Theoretical: 2-1 | 15 - | Theoretical 3 | 5% | |
| Deiluun | ition | | Theoretical: 2 - 1: | <u>)</u> ור | Theoretical F | 100/ | |
| Dally wi | nuen exams | | Dreatical: 2 1 | - | Ineoretical 5 | 10% | |
| 2 | ton ovoma di | nina | Theoretical: 2 - 1: |) 1 2 | Theoretical 10 | 150/ | |
| 2 semes | ster exams ut | lring hoth | Ineoretical: /-13 | | Incoretical IU | 15% | |
| the ser | nester for | | Practical: 6 – 14 | ť | Practical 5 | | |
| practica | l and theoret | icai | | | | 100/ | |
| Assignir | ig students | to | Theoretical: 15 | | Theoretical 7 | 10% | |
| prepare | reports on s | tudy | Practical: 15 | | Practical 3 | | |
| topics | | | m 1 1 | | m l 1.40 | 100/ | |
| Final ex | am | | Theoretical | | Theoretical 40 | 40% | |
| | | | Practical | | Practical 20 | 20% | |
| Total | | | | | 100 | 100% | |
| 11. L | earning and | d Tea | ching Resource | es | | | |
| Require | d textbooks (| (currio | cular books, if a | ny) | 1– Ecology w | ritten by Hikma | t Abbas Al- |
| | | | | | Ani and R | aad Hashem Bak | r. |
| | | | | | 2– Ecology w | ritten by Bahrar | n Khader . |
| | | | | | 3- Ecology | and the qual | itv of our |
| | | | | | environmo | nt translated | by Subaila |
| | | | | | Nuberrare d | | |
| | | | ADDAS AN | med and rariq | wunammad | | |
| | | | | | Saleh | | |
| Main ref | ferences (sou | ırces) | | | 1- Ecology w | ritten by Hikmat | Abbas Al- |
| | | | | | Ani | and Ra | ad Hashem |

| Recommended books and references (scientific journals, reports) | Bakr. 2- Ecology written by Bahram Khader . 3- Ecology and the quality of our environment, translated by Suhaila Abbas Ahmed and Tariq Muhammad Saleh 1- Plant ecology, written by Ahmed Muhammad Mujahid 2- The relationship of water to plants, Saadallah Al-Naimi |
|---|---|
| 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