

## Course Description

1. Course Title:

Soil and weather environment

2. Course Code

SWEN234

3. Semester / Year:

First semester-2023-2024

4. Description Preparation Date:

1/9/2023

5. Available Attendance Forms:

In presence

6. Number of Credit Hours /

Number of Units /

2 Theoretical + 3 Practical

3.5 units

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

Name: Dr. Taha A.T.D. AlJawwadi

Email: tars71@uomosul.edu.iq

Assist. Lecturer: Aman Adel Mawlood

Email: Aman\_adel@uomosul.edu.iq

8. Course Objectives

- Identifying what ecology is and its difference from other sciences, and learning about the difference between environment and ecology through definitions that clarify this and the extent of the importance of studying ecology from an agricultural perspective.
- The student learns about the elements of climate, distinguishing it from weather, and the extent of the impact of climate differences and the effects of climate elements on plants
- Studying the climate changes occurring due to natural change and human influence, as well as the results of pollution and its negative effects on the environment.
- Enabling the student to become familiar with the most important devices used in measuring climate elements, such as radiation, temperature, humidity, rain, atmospheric pressure, and wind, and what is the benefit of measuring the differences for each of them, and how to employ them in predicting climate changes occurring in the near future, in order to take caution in dealings with the agricultural environment.

9. Teaching and Learning Strategies

- Interactive Lecture
- Brainstorming
- Dialogue and discussion
- Practical exercises
- Assigning tasks and writing a report
- Self-learning



## 10. Course Structure

Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	The week
Short exams Assignment of duty discussions	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	The relationship between the environment, ecology, and the rest of the vocabulary of science, as well as the definition of climate vocabulary	A1: Introducing the student to scientific terminology and the relationship between the environment, ecology, and other scientific terminology.	2 Theoretical	1
Writing a simplified report on the lecture and equipment	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	The importance of measuring the climate changes occurring and continuously archiving the results	A14: Introduction and introduction to practical applications. The importance of measuring the climate changes occurring and continuously archiving the results	3 Practical	
Short exams Assignment of duty discussions	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Climate departments	A2: Definition of ecology, its divisions, climate and weather	2 Theoretical	2
Writing a simplified report on the lecture and equipment	Writing on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Weather and climate.	B3: To introduce radiation measuring devices	3 Practical	
Short exams Assignment of duty discussions Homework	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	The most important sections and divisions of the ecosystem	A3: Introducing the student to the ecosystem and its components.	2 Theoretical	3
Writing a simplified report on the lecture and equipment	Writing on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Radiation measurement method	B4: Introducing students to how a radiation measuring device works and its calculations.	3 Practical	
Short exams Assignment of duty discussions short test (1)	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Layers of the atmosphere, the thickness of each layer and its characteristics	B1: The student learns about the atmosphere, the layers of the atmosphere, the thickness of each layer, and its characteristics.	2 Theoretical	4
Writing a simplified report on the lecture and equipment Practical short test (2)	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Types of newspapers and how to read them	B5: Introducing students to temperature measuring devices, types of thermometers, and the benefits of each type	3 Practical	
Short exams Assignment of duty discussions Short test (2) Homework	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Energy and radiation	B2: Introducing students to the sections of the electromagnetic spectrum and identifying the visible spectrum within the wide range of the spectrum	2 Theoretical	5
Writing a simplified report on the lecture and equipment	Writing on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Measuring atmospheric pressure	B6: Introducing students to regular and registered atmospheric pressure devices	3 Practical	



Short exams Assignment of duty discussions Short test (3)	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	The effect of light on plants	A4: The student learns in detail about the morphological and physiological effects of light on plants and what are the types of effects.	2 Theoretical	6
Testing students' skills in recognizing the readings of the specialized device	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Devices for measuring wind speed and direction	Introducing the student to devices that measure and record wind speed and direction	3 Practical	
Short exams Assignment of duty discussions Semester test (1)	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	The maximum, minimum and optimum temperature and the effect of each on the plant	A5: Building a knowledge overview about temperature, thermal inversion, and what the minimum, maximum, and optimum temperature are	2 Theoretical	7
Testing students' skills in recognizing the readings of the specialized device	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Air humidity measuring devices	B8: Introducing the student to the use of air humidity devices and their components	3 Practical	
Short exams Assignment of duty discussions Report 1	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Variation and difference temperature has effects atmospheric pressure and wind	A6: Guide the student to know the variation and difference in temperatures on Earth.	2 Theoretical	8
Testing students' skills in recognizing the readings of the specialized device	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Simple devices to measure evaporation	B9: Teaching the student to use simple devices to measure evaporation and calculate the rate of evaporation-transpiration	3 Practical	
Short exams Assignment of duty discussions	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Daily temperature distribution system	A7: The student masters what temperature systems are and what the daily temperature regime is	2 Theoretical	9
Testing students' skills in recognizing the readings of the specialized device Homework	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Rain measuring devices and their types	B10: Introducing the student to rain measuring devices and their methods of use and calculations	3 Practical	
Short exams Assignment of duty discussions	Auditory methods Writing on the blackboard Slideshow style Interactive dialogue style.	Atmospheric pressure ranges, their distribution on Earth, and their effects	A8: The student learns about atmospheric pressure, its distribution on the Earth, and the main ranges of its regions.	2 Theoretical	10
Writing a simplified report on the lecture and equipment	Writing on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Environmental problems and methods of treating them	B11: The student learns about the most important environmental problems in terms of causes and treatments.	3 Practical	




Short exams Assignment of duty discussions Semester test (2)	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Types of wind and their effect on plants	A9: To give the student an idea about the types of winds and the extent of their negative effects on plants.	2 Theoretical	11
Write a simplified report with quick testing	Writing style on the blackboard Slideshow style Interactive dialogue style	Soil contamination	B12: Introducing the student to soil pollutants and methods of treating them	3 Practical	
Short exams Assignment of duty Discussions Write a simplified report with quick testing	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Types of rain and what are the effects and causes of each type	A10: The student learns about water, atmospheric humidity, and types of rain.	2 Theoretical	12
Write a simplified report with quick testing	Writing style on the blackboard Slideshow style Interactive dialogue style	air pollution.	B13: Introducing the student to air pollutants and methods of treating them	3 Practical	
Short exams Assignment of duty discussions	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	Teaching students about seasonal rains, their distribution, and their impact on agriculture that depends on them	A11: The student learns about the impact and importance of the quantity and distribution of seasonal rains on rain-fed agriculture	2 Theoretical	13
Write a simplified report with quick testing	Writing style on the blackboard Slideshow style Interactive dialogue style	Water pollution.	B14: Introducing the student to water pollutants and methods of treating them	3 Practical	
Short exams Assignment of duty discussions	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	The term weather forecast and types of weather stations.	A12: The student masters the meaning of weather forecasts, what are the types of specialized stations for them, and how to obtain data	2 Theoretical	14
Practical semester test Write a simplified report with quick testing Practical semester test	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	Components of agricultural weather stations.	B15: The student learns about the components of weather stations, the mission of employees at the station, and the method of archiving data	3 Practical	
Short exams Assignment of duty discussions	Auditory methods Writing style on the blackboard Slideshow style Interactive dialogue style.	General principles for establishing stations and monitoring areas	A13: The student learns about the foundations upon which the establishment of meteorological monitoring stations is based and the method of selecting them.	2 Theoretical	15
Write a simplified report with quick testing	Writing style on the blackboard Slideshow style Interactive dialogue style Direct access to devices	A scientific trip to the Meteorology Department	B16: Conduct a scientific trip to weather stations and learn about the nature of their work	3 Practical	

## 11. Course Evaluation


% Relative Weight	Grade	Calendar date (week)	Evaluation methods	t
6	6	The eighth week	Report 1	1
1	1	the third week	Homework	2
1	1	fourth week	Short test (1) Quiz	3
1	1	The fifth week	Short test (2) Quiz	4
1	1	the sixth week	Short test (3) Quiz	5
7.5	7.5	The seventh week	Semester test (1)	6
7.5	7.5	The eleventh week is difficult	Semester test (2)	7
40	40	Final semester exams	Final theoretical test	8
1	1	The fifth week	Homework	9
1	1	the sixth week	Homework	10
1	1	The first week	Practical short test (1) Quiz	11
1	1	fourth week	Short practical test (2) Quiz	12
10	10	The fourteenth week	Practical semester test	13
1	1	The ninth week	Homework	14
20	20	Final semester exams	Final practical test	15
%100	% 100	100	Total	

## 12. Learning and Teaching Resources

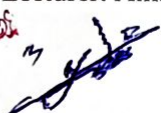
Ecology, Hikmat Abbas Al-Ani / Raad Hashem Bakr	Required textbooks (methodology, if any)
Principles of ecology and climate, Sadiq Jaafar Al-Sarraaf	Main references (sources)
Academic scientific journals, reports of international environmental and weather organizations	Recommended books and references (scientific journals, reports...)
FAO	Electronic References, Websites

  
**Theoretical subject lecturer:**  
 Dr. Taha A.T.D. AlJawwadi



  
**Practical subject lecturer:**  
 Assist. Lecturer: Aman Adel Mawlood

  
**Chairman of the Scientific Committee:**  
 Dr. Abdul Qader Abash sbak

  
**Head of the Department of Soil Science and Water Resources:**  
 Dr. Ammar Younis Kashmoula