Course Description Form

1. Course Name:

Principles of soil science

2. Course Code:

PRSS113

3. Semester / Year:

First (Autumn) semester 2023-2024

4. Description Preparation Date:

1 \9 \ 2023

5. Available Attendance Forms:

presence

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

2 theoretical + 3 practical / 3.5 units

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

Name: M. Yousif Hasan Yousif alnaseryousif10@uomosul.edu.iq
Osama Hussam Fadel

8. Course Objectives

1- Identify the physical and chemical properties of soil.
2- Identify the factors and processes of soil formation
3- Identify the types of soil water, field capacity, and wilting point.
Identify the most important nutrients important for plant nutrition

9. Teaching and Learning Strategies

- Interactive lecture
-Brainstorming
- Dialogue and discussion
-Field Training
-Practical exercises
- Field project
- Interactive lectures
-Brainstorming
-Self-education

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical	a1- The student explains the concepts of soil science	Introduction to soil science concepts	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b2: The student distinguishes the depth of the soil	Move soil and collect samples from the field	Assigning report writing tasks	
2	2 Theoretical	A2: The student learns about the formation of soil	Origin and development of soil	Theoretical: audio methods and interactive dialogue Writing style on the blackboard	Short daily exam (quiz) Assignment of duty discussions

	3 Practical	a A13: The student recognizes the description of the soil cross section	Description of soil section	Assigning report writing tasks	
3	2 Theoretical	C1: The student learns about the processes of soil formation	Soil formation processes	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b3: The student determines the texture of the soil	Determine soil texture	Assigninsg report writing tasks	
4	2 Theoretical	A3: The student explains the physical properties of soil	Physical properties of soil	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b4: The student measures the degree of soil interaction	Measuring soil pH	Assigning report writing tasks	
5	2 Theoretical	A4: The student learns about the structure of soil	- Soil structure	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b5: The student measures the percentage of carbonates in the soil	Estimation of calcium carbonate in the soil	Assigning report writing tasks	
6	2 Theoretical	A5: The student learns about soil temperature	soil temperature	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b6: Measures the percentages of carbon and bicarbonate in moisture	Determination of carbonates and bicarbonates in soil	Assigning report writing tasks	
7	2 Theoretical	b1: The student distinguishes the type of soil water	Soil water classification	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b7: The student measures the moisture content	Soil moisture content measurements	Assigning report writing tasks	
8	2 Theoretical	A6: The student distinguishes the chemical properties of soil	Colloids and soil chemical properties	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b8: The student measures the ratio of sodium and potassium	Determination of sodium and potassium	Assigning report writing tasks	

9	2 Theoretical	A7: The student explains organic colloids	Organic colloids	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions)
	3 Practical	b9: The student measures organic matter	Estimation of soil organic matter	assigning report writing tasks	
10	2 Theoretical	A8: The student is familiar with the biological properties of soil	Soil biological properties	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	C3: The student discovers humic compounds	Determination of humic compounds in soil	Assigning report writing tasks	
11	2 Theoretical	A9: The student learns about the salinity and alkalinity of soil	Salinity and alkalinity in the soil	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	A14: The student determines soil salinity	Estimation of soil salinity	Assigning report writing tasks	
12	2 Theoretical	A10: The student is aware of the effect of salinity on agricultural production	The effect of soil salinity on agricultural production	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b10: The student measures the cationic capacity of the soil	Estimation of soil cationic capacity	Assigning report writing tasks	
13	2 Theoretical	A11: The student is familiar with important nutritional elements	Phosphorus and potassium in the soil	audio methods and interactive dialogue Writing style on the blackboard	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	C4: The student discovers the extraction of ready-made elements from the soil	Extracting ready-made elements from the soil	Assigning report writing tasks	
14	2 Theoretical	A12: The student learns about phosphorus and potassium in the soil	Phosphorus and potassium In the soil	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b11: The student measures phosphorus in the soil	Determination of phosphorus in soil	Assigning report writing tasks	
15	2 Theoretical	C2: The student is familiar with the classification of Iraqi soils	Classification of soils and lands in Iraq	audio methods and interactive dialogue Writing style on the blackboard Slideshow style	Short daily exam (quiz) Assignment of duty discussions
	3 Practical	b12: The student measures the smallest elements	Estimation of microelements	Assigning report writing tasks	

11. Course Evaluation				
% 13	**7 Theoretical** **6 practical**	Theory week 15 Practical 1-15 weeks	A theoretical final report on soil survey and classification A practical final report on practical lessons and field visits	1
% 6	4 theoretical + 2 practical	Week 3	Quiz (1)	2
% 15	10 theoretical + 5 practical	Week 9	Midterm exam (theoretical and practical)	3
%6	4 theoretical + 2 practical	Week 12	Quiz (2)	4
%20	20	Practical exam week	Final practical test	5
%20	40	Theory exam week	Final theoretical test	6

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Principles of soil science, Abdullah Al-Ani
Main references (sources)	Fundamentals of Pedology, Walid Al-Akidi
Recommended books and references (scientific journals, reports...)	Academic scientific journals, reports of international organizations
Electronic References, Websites	• Conservation Service in cooperation with The University of Hawaii Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C. • Service in cooperation with Hawaii Institute of Topical Agriculure and Human Resources. University of Hawaii at Manoa, Honolulu.

Theoretical teacher: M. Yousif Hassan Alnaser Practical teacher: Osama Husam Fadel

Chairman Scientific Committee: Dr. Head of Department: Dr. Talal Saeed