Course Description Form

1. Course Name:	
Principles of soil science	
2. Course Code:	
PRSS208	
3. Semester / Year:	
First Semester	
4. Description Preparation Date:	
15/01/2025	
5. Available Attendance Forms:	
Attending	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Number of hours = 5, number of units = 3.5	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Hussein Aziz Email: Husseinaziz@uodiyala.edu.iq	
8. Course Objective	
Course Objectives	• Definition of soil science and how soils originate and develop, and what are the processes and factors affecting that. • Knowledge of the physical properties of soils (texture, structure, soil water, actual and apparent soil density) • Knowledge of the chemical properties of soils (mineral composition, organic matter, ion exchange, soil acidity, alkalinity and salinity). • Knowledge of the biological properties of soils and identification of the basic nutrients and their importance to plants.
9. Teaching and Learning Strategies	
Strategy	In-person lectures for 15 weeks, including two monthly exams and daily exams.
10. Course Structure	

The theoretical part					
Week	**Hours**	**Required Learning Outcome**	**Unite or Subject Name**	**Learning Method**	**Evaluation Method**
1	2	Soil formation and formation	Principles of soil science	Lecture with explanation and presentation	Exams
2	2	Soil formation processes and factors	Principles of soil science	Lecture with explanation and presentation	Exams
3	2	Soil profile	Principles of soil science	Lecture with explanation and presentation	Exams
4	2	Soil physical properties(psp) texture, classes, structure,	Principles of soil science	Lecture with explanation and presentation	Exams
5	2	Soil density, Bulk density , soil air , soil temperature ,soil color	Principles of soil science	Lecture with explanation and presentation	Exams
6	2	Available water capacity , permeability soil water.	Principles of soil science	Lecture with explanation and presentation	Exams
7	2	Soil water (soil water classification)	Principles of soil science	Lecture with explanation and presentation	Exams
8	2	Soil Chemical Properties	Principles of soil science	Lecture with explanation and presentation	Exams
9	2	Soil minerals	Principles of soil science	Lecture with explanation and presentation	Exams
10	2	Colloids and soil properties	Principles of soil science	Lecture with explanation and presentation	Exams
11	2	Double electrical layer	Principles of soil science	Lecture with explanation and presentation	Exams
12	2	Exchanges ion in the soil	Principles of soil science	Lecture with explanation and presentation	Exams
13	2	The properties of bio-soil (soil classification revival)	Principles of soil science	Lecture with explanation and presentation	Exams
14	2	The role of biology in the soil to increase soil fertility	Principles of soil science	Lecture with explanation and presentation	Exams
15	2	Soil classification	Principles of soil science	Lecture with explanation and presentation	Exams
Practical part					

Week	Hours	Required Learning Outcome	Unite or Subject Name	Learning Method	Evaluation Method
1	3	How to take soil samples	Principles of soil science	Lecture with explanation and presentation	Exams
2	3	Preparation of samples for laboratory study	Principles of soil science	Lecture with explanation and presentation	Exams
3	3	Determination of moisture in the soil	Principles of soil science	Lecture with explanation and presentation	Exams
4	3	Distribution (soil texture)	Principles of soil science	Lecture with explanation and presentation	Exams
5	3	Distribution volumetric minutes of soil (mechanical analysis)	Principles of soil science	Lecture with explanation and presentation	Exams
6	3	Determination density and bulk soil	Principles of soil science	Lecture with explanation and presentation	Exams
7	3	How to prepare saturated soil paste and calculate saturation	Principles of soil science	Lecture with explanation and presentation	Exams
8	3	Measurement of electrical conductivity	Principles of soil science	Lecture with explanation and presentation	Exams
9	3	Measure PH in soil	Principles of soil science	Lecture with explanation and presentation	Exams
10	3		Principles of soil science	Lecture with explanation and presentation	Exams
11	3	Determination of positive ions from soil and water extract	Principles of soil science	Lecture with explanation and presentation	Exams
12	3	Determination of negative ions from soil and water extract	Principles of soil science	Lecture with explanation and presentation	Exams
13	3	Estimate calcium carbonate	Principles of soil science	Lecture with explanation and presentation	Exams
14	3	Estimation of organic matter	Principles of soil science	Lecture with explanation and presentation	Exams
15	3	Estimation of soil biology	Principles of soil science	Lecture with explanation and presentation	Exams

11.Course Evaluation

Exams
Daily exams and discussion questions within the lecture
The degree of participation in questions related to the academic subject

12.Learning and Teaching Resources	
Required Textbook (curricular books, if any)	Alani, 1988. Principles of soil
Mean references (sources)	
Recommended books and references (scientific journals, reports…)	Iraqi academic scientific journals
Electronic references, Websites	