

Course Description Form

1. Course Name:					
Soil Pollution and Water					
2. Course Code:					
SOPW351					
3. Semester / Year:					
First 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 Theory + 3 Practical / 3.5 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Qahtan Darwish Essa Email: qahtan_darwish@uomosul.edu.iq					
8. Course Objectives					
Theory: -Enabling the student to understand the concepts of soil and water pollution -Enabling the student to understand the resources of soil and water pollution - Introducing the student to methods for treating contaminated soil -Enable the student to calculate the level and degree of soil and water pollution			Practical : - Enabling the student to recognize the most important methods for calculating the degree of pollution, assessing level of pollution, and measuring soil characteristics that are considered standards for soil and water quality		
9. Teaching and Learning Strategies					
Strategy		- Interactive lecture, Brainstorming, - Dialogue and discussion, - Assigning tasks and reporting - Assigning group work to reveal leadership skills			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	Theory	Theory: a1: The student identifies pollution to the ecosystem And pollutants	Theory Entrance to pollution For the ecosystem	Theory : -Auditory methods,	Exams, Homework, Reports.
	3 Pract.	b2: The student Learns about pollution	Definition of pollution and pollutants	Assigning tasks and reports	Exams, Homework, Reports.

		And pollutants			
2	Theory	a2: Entrance to pollution For the ecosystem	The concept of pollution and its sources Its types and negative effects	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3 Pract.	a13:Definition of pollution and pollutants	The effect of pollution on Human, animal, Plant,	Assigning tasks and reports	Exams, Homework, Reports
3	2theory	Theory: c1: The student learns about the types Soil contamination	Theory: Types of soil pollution	- Style of writing the blackboard. - Direct dialogue	Exams, Homework, Reports
	3 pract.	b3: The student is familiar with toxic gases	dust, toxic gases Oxides Sulfur oxides Nitrogen, sulfid Hydrogen	Assigning tasks and reports	Exams, Homework, Reports
4	2theory	a3: The student recognizes a gas Nitrogen and its degradation in the environment	Nitrogen gas and its cycle In the environment	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	b4: The student is familiar with air pollution	Air pollution, its sources, Hydrocarbons	Assigning tasks and reports	Exams, Homework, Reports
5	2theory	a4: The student learns about each cycle of oxygen and carbon and sulfur in nature	Oxygen and carbon cycle and sulfur in nature	- Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3 pract.	b5:The student gets to know Water filtration project	Visit a water filtration project in Al-Rashedia	Assigning tasks and reports	Exams, Homework, Reports
6	2theory	a5: The student gets to know Chemical contamination of soil agricultural samples	Chemical contamination of soil agricultural	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	b6:The student examines water samples	Measurement of temporary hardship	Assigning tasks and reports	Exams, Homework, Reports

			and permanent		
7	2theory	b1: The student identifies the risks of pollution plant growth and human health	Chemical pollution and its impact on plant growth and human health	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	b7: The student measures salinity Soil acidity	Calculate the salinity of water and acidity calculation and basal	Assigning tasks and reports	Exams, Homework, Reports
8	2theory	a6:The student masters processing Chemical pollution	Treating Chemical pollution	- Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	b8:The student measures calcium and magnesium	Measure calcium and magnesium with water	Assigning tasks and reports	Exams, Homework, Reports
9	2theory	a7: The student learns about pathogenic microbes in the soil	Pathogenic microbes For humans and animals in soil	-Auditory methods,	Exams, Homework, Reports
	3pract.	b9:The student Identifies methods of measuring pollution	Methods of Measuring pollution of water and soil	Assigning tasks and reports	Exams, Homework, Reports
10	2theory	a8: The student is familiar with soil pollution with heavy metal	Soil contamination with heavy metal	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	c3:The student learns about pollution With powders, fertilizers and waste	Pollution with washing powder fertilizers animal wastes	Assigning tasks and reports	Exams, Homework, Reports
11	2theory	a9:The student masters processing contaminated lands	Treatment of contaminated lands	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	a14:The student	Visible light	Assigning tasks	Exams,

		gets to know Spectrometer	Spectrometer and the elements it measures	and reports	Homework, Reports
12	2theory	a10: The student learns about pollution Water	Water Pollution	-Auditory methods,	Exams, Homework, Reports
	3pract.	b10:The student measures the vital requirement and The chemistry in water	Measurement of COD and BOD	Assigning tasks and reports	Exams, Homework, Reports
13	2theory	a11: The student judges soil pollution	Modern standards for evaluation Soil pollution level	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	c4:The student gets to know Atomic Absorption device	Absorption device Atomic matter and its components	Assigning tasks and reports	Exams, Homework, Reports
14	2theory	a12: The student learns methods Pesticide transmission	Methods of transmission of pesticides In the soil	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	b11:The student learns about pollution With pesticides	Pesticide contamination	Assigning tasks and reports	Exams, Homework, Reports
15	2theory	c2: The student is familiar with the effect of pesticides on organisms	The effect of pesticides on Activity of microorganisms soil	-Auditory methods, - Style of writing the blackboard. - Direct dialogue style	Exams, Homework, Reports
	3pract.	b12:The student explains the risks Radioactive isotope contamination	Risks of isotope contamination Radioactive	Assigning tasks and reports	Exams, Homework, Reports
11. Course Evaluation					
	Evaluation Methods		Evaluation Date	Degree	Relative weight %

	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100
12. Learning and Teaching Resources				
	Required textbooks (curricular books any)	Book (Soil pollution and water) Dr. Mahmood Al-Jumaili and Sal Hadi (2018)		
	Main references (sources)	Book (Soil pollution and water) Dr. Shikhani, Dr. Mohammad Sam Dr Aiad Foad (2015)		
	Recommended books and references (scientific journals, reports...)			
	Electronic References, Websites			



Teacher of Theory : Dr. Qahtan Darwish Essa



Teacher of Practical : Mr. Ahmed Sameer Ghanim



Chairman of the Scientific Committee : Dr. Abd Al-Qader Abash Sbak



Head of the Dept. of Soil Sciences and Water Resources : Dr Ammar Younis Ahmed