

Course Description Form

1. Course Name:
Plant diseases
2. Course Code:
PLDI319
3. Semester / Year:
Second semester/third stage, plant protection + second stage, agriculture extension/2023-2024
4. Description Preparation Date:
1/8/2024
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 theoretical hours + 3 practical hours / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Alaa Hamed Mohamed and Ahamed Younis Khalil Email: alaahamed82@uomosul.edu.iq
8. Course Objectives
<p>The learner must be able to understand the disease and the information that must be available in naming the pathogens .1</p> <p>Describes plant diseases and identifies the stages of disease development and the relationship of the parasite to the host .2</p> <p>Distinguish between types of plant pathogens .3</p> <p>Full knowledge of the methods by which pathogens attack their plant hosts .4</p> <p>Identify the defenses used by plants against pathogens .5</p> <p>Identify the physiological functions that are affected by pathogen attacks .6</p> <p>Choosing the suitability of environmental factors on the spread of pathogens .7</p> <p>Enumerate the epidemiological aspects of plant disease pathogens .8</p> <p>A comprehensive study of various types of biological, chemical and agricultural control of plant disease pathogens .9</p>
9. Teaching and Learning Strategies
<ul style="list-style-type: none"> a. Interactive lecture b. Brainstorming c. Dialogue and discussion d. Field Training e. Practical exercises <li style="padding-left: 20px;">f. Field project g. Self-learning

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 hours	A1: The student explains the concept of the history of plant diseases	History of plant diseases	Audio methods. Style Writing on the board	Conducting oral and written tests. Assigning an assignment. Discussions
	3 hours	A52: The student should be able to recognize the principles of basic and applied sciences in the plant pathology laboratory and laboratory safety. C6: The student should be able to use laboratory equipment in the laboratory	Plant pathology and laboratory safety laboratory	Assigning tasks and reporting	
2	2 hours	A5: The student explains the importance of plant diseases	Sterilization	Audio methods. Style Writing on the board	Conducting oral and written tests. Assigning an assignment. Discussions
	3 hours	A6: The student should be able to recognize the basics of sterilization and the modern methods and techniques used for sterilization B15: The student should be able to recognize the quality and safety standards in sterilization and be free from diseases and pests. C6: The student should be able to use sterilization		Assigning tasks and reporting	

		equipment in the laboratory			
3	2 hours	A10: Gives examples of losses and damages caused by plant diseases	Losses and damage caused by plant diseases	Audio methods. Style Writing on the board	Conducting oral and written tests.
	3 hours	A41: The student should be able to know living organisms and their way of living and feeding B6: The student should be able to know the food media for the development of pathogens C2: The student should be able to distinguish the nature of the nutritional environment for each pathogen	Food media for the development of pathogens	Assigning tasks and reporting	Assigning an assignment Discussions
4	2 hours	A41: The student explains the concept of disease in plants	The concept of disease in plants	Audio methods. Style Writing on the board	Conducting oral and written tests.
	3 hours	B11: The student should be able to extract explanatory factors related to plants and diseases C58: The student should be able to master the concepts related to diseases, trees and plants D4: The student should be able to develop his cognitive and professional research capabilities in the field of field diagnosis	Diagnosis of plant diseases	Assigning tasks and reporting	Assigning an assignment Discussions
5	2 hours	B10: The student leads discussion groups on the development of plant diseases and the relationship of the parasite to the host	The development of plant disease and the relationship of the parasite to the host	Audio methods. Style Writing on the board	Conducting oral and written tests. Assigning an assignment

	3 hours	C1: The student should be able to design scientific experiments to isolate pathogens from plant parts B32: The student should be able to collect and analyze data under laboratory conditions E5: The student should be able to take responsibility for completing the work efficiently and carefully	Isolation of pathogens from plant parts	Assigning tasks and reporting	Discussions
6	2 hours	B15: The student explains the stages of disease development	Stages of plant disease development	Audio methods. Style Writing on the board	Conducting oral and written tests.
	3 hours	C1: The student will be able to design scientific experiments to isolate pathogens from seeds B32: The student should be able to collect and analyze data under laboratory conditions	Isolation of pathogens from seeds	Assigning tasks and reporting	Assigning an assignment Discussions
7	2 hours	B17: The student explains how pathogens attack plant hosts	How pathogens attack plant hosts	Audio methods. Style Writing on the board	Conducting oral and written tests.
	3 hours	C1: The student will be able to design scientific experiments to isolate pathogens from soil and water B32: The student should be able to collect and analyze data under laboratory conditions	Isolation of pathogens from soil	Assigning tasks and reporting	Assigning an assignment Discussions
8	2 hours	B38: The student concludes how to enzymatically analyze the contents	Enzymatic hydrolysis of plant cell contents	Audio methods. Style Writing on the board	Conducting oral and written tests.

		of a plant cell			Assigning an assignment . Discussion s
	3 hours	C1: The student will be able to design scientific experiments to purify pathogens from plants, soil and water B32: The student should be able to collect and analyze data under laboratory conditions for the process of purifying the pathogen	Purification of pathogens from plants, seeds and soil	Assigning tasks and reporting	
9	2 hours	C3: The student learns about plant defenses against pathogen attacks	How plants defend themselves against pathogen attacks	Audio methods. Style Writing on the board	Conductin g oral and written tests. Assigning an assignment . Discussion s
	3 hours	A10: The student should be able to understand the classification of pathogens (fungi, viruses, nematodes, bacteria) and insect and animal pests and the resulting damage in affecting plants and their production. B32: The student should be able to collect and analyze data under field conditions for plant signs and symptoms C8: The student describes the effect of pathogens on physiological processes in plants	Disease symptoms and signs	Assigning tasks and reporting	
10	2 hours	C8: The student describes the effect of pathogens on physiological processes in plants	The effect of pathogens on physiological processes in plants	Audio methods. Style Writing on the board	Conductin g oral and written tests. Assigning an assignment . Discussion s
	3 hours	A54: The student should be able to	Measuring pathogenicity	Assigning tasks and reporting	Conductin g oral and

		<p>explain scientific principles and methods in quantitative and qualitative measurement of diseases</p> <p>B10: The student should be able to predict plant diseases and investigate the field population, rate and severity of infection.</p> <p>B47: The student should be able to solve problems using mathematical methods to measure the rate and severity of injury</p>			<p>written tests.</p> <p>Assigning an assignment</p> <p>Discussions</p>
11	2 hours	C6: The student learns about the environmental factors that affect the development of plant diseases	The effect of environmental factors on the development of diseases the plant	Audio methods. Style Writing on the board	<p>Conducting oral and written tests.</p> <p>Assigning an assignment</p> <p>Discussions</p>
	3 hours	<p>A41: The student should be able to explain the structure of disease-causing organisms in terms of cells, tissues, organs and their functions and explain the divisional characteristics of the pathogen.</p> <p>B6: The student should be able to distinguish the structure of disease-causing organisms in terms of cells, tissues, and organs, their functions, and the interactions that occur in them.</p>	Phenotypic and morphological characteristics of pathogens	Assigning tasks and reporting	
12	2 hours	C11: The student writes a report on the epidemiology of plant diseases	Epidemiology of plant diseases	Audio methods. Style Writing on the board	<p>Conducting oral and written tests.</p> <p>Assigning an</p>
	3 hours	A10: The student should be able to	Preparing glass slides to diagnose the	Assigning tasks and reporting	

		<p>understand the division of pathogens (fungi, viruses, nematodes, bacteria) and their forms under the microscope.</p> <p>C2: The student should be able to diagnose pathogens and differentiate between them under a microscope</p> <p>B1: The student should be able to practice different thinking skills in diagnosing causes</p>	pathogen		assignment · Discussion s
13	2 hours	D4: The student discusses methods of controlling plant diseases	Control of plant diseases	Audio methods. Style Writing on the board	Conductin g oral and written tests.
	3 hours	<p>C12: The student should be able to apply modern microscope techniques and their types</p> <p>C2: The student should be able to diagnose pathogens using a microscope</p>	Optical microscope	Assigning tasks and reporting	Assigning an assignment · Discussion s
14	2 hours	D7: The student discusses methods of controlling plant diseases	Control of plant diseases	Audio methods. Style Writing on the board	Conductin g oral and written tests.
	3 hours	<p>C1: The student should be able to design scientific experiments by applying modern techniques for research related to pesticides</p> <p>A26: The student should be able to enumerate the chemical groups of pesticides and test them in the laboratory</p> <p>B32: The student should be able to collect and analyze data under</p>	Laboratory evaluation of fungicides	Assigning tasks and reporting	Assigning an assignment · Discussion s

		laboratory conditions for pesticides			
15	2 hours	E1: The student discusses methods of controlling plant diseases	Control of plant diseases	Audio methods. Style Writing on the board	Conducting oral and written tests.
	3 hours	B32: The student should be able to collect and analyze data under field conditions for pesticides A26: The student should be able to enumerate the chemical groups of pesticides and test them in the field B15: The student should be able to recognize quality and safety standards in the use of pesticides in the field	Evaluation of fungicides in the field	Assigning tasks and reporting	Assigning an assignment Discussions

11. Course Evaluation

12. Learning and Teaching Resources	
Required textbooks (curricular books any)	Book (General Plant Diseases - Abdul Hamid Khaled Khudair)
Main references (sources)	The book (Plant Diseases - Facilitator Majeed Jarhis, Raqeeb Akef Ani, and Iyad Abdel-Wahed Al-Hiti) Book (Plant Diseases - Jihad Muhammad Al-Habaa and Mahmoud Shaker Mustafa - Arab Republic of Egypt)
Recommended books and references (scientific journals, reports...)	Plant Diseases Book (written by Dr. George Agrios, University of Massachusetts, Boston United States of America - Translated by Dr. Mahmoud Musa Abu Arqoub
Electronic References, Websites	Home Feed ResearchGate

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