

# Course Description Form

1. Course Name:

Principles of microbiology

2. Course Code:

PRMB205

3. Semester / Year:

First autumn semester 2023-2024

4. Description Preparation Date:

2505 / 2 / 1

5. Available Attendance Forms:

In 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.D. Zaman Nadhim laher

Name: M.M. Enas Mounir Abdel Majeed

8. Course Objectives

Course Objectives

theoretical:

Enabling the student to understand everything related to microbiology

Enable the student to know the classification of microorganisms

Enabling the student to become familiar with the ways of living microorganisms

- Enabling the student to reveal the relationship of microorganisms to each other

- The student can understand the relationship between microorganisms

practical:

Enabling the student to understand microbiology and its life applications

-Enable the student to use a microscope and examine samples

-Knowing the different types and shapes of microorganisms through their dyeing


- Enable the student to prepare slides for examination and measure bacterial movement

-The student judges the different sterilization methods and their efficiency


Enabling the student to prepare suitable culture media for microorganisms

9. Teaching and Learning Strategies

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<p>Strategy</p> <p>theoretical:</p> <ul style="list-style-type: none"><li>- Theoretical</li><li>Interactive lecture</li><li>Brainstorming</li><li>- Dialogue and discussion</li><li>Assigning reports</li><li>-Conducting monthly and daily examinations</li></ul> <p>Interactive lecture</p> <ul style="list-style-type: none"><li>- Brainstorming</li><li>Dialogue and discussion</li><li>Assigning tasks and reporting</li><li>- Offers for models made from dairy products</li><li>- He is assigned to prepare a diligence report and discuss it with the students</li></ul>		<p>practical:</p> <p>Interactive lecture</p> <p>-Discussion, dialogue, brainstorming -</p> <p>Conducting laboratory experiments</p> <p>-Assigning reports -</p> <p>Conducting daily and monthly examinations</p> <div></div>			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method


1	2theoretical 3 practical	theoretical bl;The student demonstrates the concept and its origin Microbiology practical bl;The student learns about science Microbiology The microscope and how to use it	theoretical Introduction to microbiology And the stages of its development practical Microscope and its uses	theoretical audio methods, Writing on the board Direct dialogue style practical Assigning tasks and reports	Short Short exams, assignments, discussions
2	2 Theoretical	theoretical	theoretical	theoretical	Short

	3 practical	cl;The student becomes familiar with the characteristics of living things Culture microscopy And chemical practical b2;The student can prepare Slides and bacterial staining With a fine dye	Morphological characteristics For microbiology PRACTICAL Gram stain 	audio methods, Writing on the board Di rect dialogue style practical Assigning tasks and reports	exams, assignments, and discussions


3	2theoretical 3 practical	theoretical b2;The student hits wall Cell and structures external to bacteria practical cl;The student gets to know Bacteria Acid resistant He dyed and examined It	theoretical al External structures of bacteria practical Acid-fast bacteria	_theoretical: Methods Audio Writing style On the board Dialogue style Direct Practical: Assigning tasks and reporting	Short exams, assignments, and discussions
4	2theoretical 3 practical	theoretical b3,b4;The student hits a wall Cell and structures external to bacteria practical b3;Distinguish	theoretical External structures of bacteria practical Painting blackboard	theoretical: Methods Audio Writing style On the board Dialogue style Direct	Short exams, assignments, and discussions

			vegetative cells from spores		Practical: Assigning tasks and reporting	


	2theoretical 3 practical	theoretical: b2;The student gets to know the contents Cytoplasm and bacterial movement practical dl;Enable the student to operate Biology laboratory equipment Microscopic	theoretical: Internal structures of bacteria PRACTICAL Laboratory equipment, Microbiology	theoretical: Methods Audio Writing style On the board Dialogue style Direct Practical: Assigning tasks and reporting	Short exams, assignments, and discussions
6	2theoretical 3 practical	theoretical al; The student recognizes the elements Nutritional and physical Affect the growth of organisms Microscopic practical b4;The student can See the movement of bacteria Under the microscope	theoretical Microbiology development practical Examination of bacterial movement By hanging drop	theoretical: Methods Audio Writing style On the board Dialogue style Direct Practical: Assigning tasks and reporting	Short exams, assignments, and discussions
7	2 Theoretical 3 practical	Theoretical a2;The student is familiar with the	theoretical Food environments practical	theoretical: Methods Audio Writing style	Short exams, assignments, and discussions

		food environment Its composition and types practical b5;The student can use Hemocytometer slide	Count bacteria by Hemocytometer Slide	On the board  Dialogue style Direct  Practical: Assigning tasks and reporting	
8	2theoretical 3 practical	Theoretical c3;The student judges the curves  Microorganism growth and methods  Its reproduction practical c2;Scientific visit	theoretical  Microorganism growth curves practical  Scientific visit	theoretical:  Methods  Audio Writing style On the board  Dialogue style Direct  Practical: A"igning tasks and reporting	Short  exams, assignments, and discussions
9	2Theoretical 3 practical	Theoretical a3;The student learns methods  Count direct and nonbacterial bacteria practical c3;The student can count  Bacteria in milk samples	theoretical  Types of farms and counting methods  Bacteria practical  Test and estimate  Number of bacteria in Milk	theoretical:  Methods  Audio Writing style On the board  Dialogue style Direct  Practical: Assigning tasks and reporting	Short  exams, assignments, and discussions
10	2Theoretical 3 practical	Theoretical a4;The student is familiar with fungi And mold and its importance	theoretical  General characteristics of fungi practical	theoretical:  Methods  Audio Writing style On the board	Short  exams, assignments, and discussions

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			practical c4;The student can  Count the bacteria after cultivation	Count bacteria by  Molded dishes	Dialogue style Direct  Practical: Assigning tasks and reporting	
11	2 Theoretical  3 practical	Theoretical  a5;The student is judged exterior  For molds and their uses practical  b6;The student can  Collect Samples from different sources	theoretical  Methods of mold reproduction  Its types and uses practical  Count bacteria by Molded dishes	theoretical:  Methods  Audio Writing style On the board  Dialogue style Direct  Practical: Assigning tasks and reporting	Short exams, assignments, and discussions	
12	2 Theoretical  3 practical	Theoretical  b5;The student explains the definition  Yeasts and their types  And uses practical  b7;The student learns about methods  Various sterilizations And ways to use it	theoretical  Yeasts  practical  sterilization    Sterilization	theoretical:  Methods  Audio Writing style On the board  Dialogue Style Direct  practical: Assigning tasks and reporting	Short exams, assignments, and discussions	

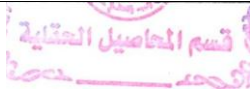
13	2 Theoretical 3 practical	Theoretical dl;The student knows the definition Fungi and their types And its uses	theoretical Fungi practical Water tests	theoretical: Methods Audio Writing style On the board	Short exams, assignments, and discussions

			practical b8;The student gets to know Examinations and tests Water validity And its microbial content	Dialogue style Direct  Practical: Assigning tasks and reporting	
14	2Theoretical 3 practical	Theoretical el;Student governed definition Viruses and clarification Its types and ways of infection practical el; The student can Preparing the culture media Different and necessary For the growth of microorganisms	theoretical Viruses practical Cultivation media  	theoretical: Methods Audio Writing style On the board  Dialogue style Direct  Practical: Assigning psks  and Porting	Short exams, assignments, and discussions



15	2 Theoretical 3 practical	Theoretical e2;The student is familiar with the relationship between living things Food microscopy practical d2;The student	theoretical Microbiology relationship With food practical review	theoretical: Methods Audio Writing style On the board Dialogue style Direct Practical: Assigning tasks and reporting	Short exams, assignments, and discussions

			reviews the curriculum Detailed and fast		
11. Course Evaluation					
t	Calendar methods		Calendar date (week)	Class	Relative weight %
1	Report 1		fourth week	2.5	2.5
2	Report 2		The fifth week	2.5	2.5
3	Short test (1) Quiz		the sixth week	2	2
4	Short test (2) Quiz		The fourteenth week	2	2
5	Short test (3) Quiz		The fifteenth week	1	1
6	Semester test (1)		the sixth week	7.5	7.5
7	Semester test (2)		The eleventh week is difficult	7.5	7.5
8	Final theoretical test	جامعة الموصل كلية الزراعة والغابات	Final semester exams	40	40
9	Laboratory application		The fifteenth week	5	5

10	Laboratory evaluation		The third and fifth week	2	2
11	Practical short test (1) Quiz		The first week	1	1
12	Short practical test (2) Quiz		fourth week	0.5	0.5
13	Short practical test (3) Quiz		The fourteenth week	1	1
14	Practical test		Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test		Final semester exams	20	20

the total	100	100%	100%
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc			
12. Learning and Teaching Resources			
Principles of microbiology / Dr. Fayez Al-Ani And Dr. Amin Suleiman Badawi	General dairy principles,		
Main references (sources)	Scientific journals and articles		
food microbiology by book , Doyle, Buchanan	Specialized books in the field of dairy science and its products  Books on liquid dairy products		
Electronic References, Websites	Scientific electronic websites specialized in studying milk and its processing		

Theoretical subject teacher : Dr. Zaman nadhim taher

Practical subject teacher: M.M. Enas Mounir Abdel Majeed

Chairman of the Scientific Committee: Dr. Moyassar Mohammed Aziz

Head of the Food Science Department: Prof. Dr. Weam Yehya Rasheed

