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:
2024\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 Taher Name: M.M. waead allah hashim
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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Strategy theoretical: - Theoretical - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning reports -Conducting monthly and daily examinations Interactive lecture - Brainstorming - Dialogue and discussion - Assigning tasks and reporting - Offers for models made from dairy products - He is assigned to prepare a diligence report and discuss it with the students	practical: Interactive lecture -Discussion, dialogue, brainstorming -Conducting laboratory experiments -Assigning reports -Conducting daily and monthly examinations

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3 practical	HEORETICAL B1;The student demonstrates the concept and its origin Microbiology PRACTICAL B1;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 Shortexams, assignments, discussions
2	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Short

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	3 practical	C1;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 Direct dialogue style PRACTICAL Assigning tasks and reports	exams, assignments, and discussions
3	2Theoretical 3 practical	THEORETICAL B2;The student hits a wall Cell and structures external to bacteria PRACTICAL C1;The student gets to know Bacteria Acid resistant He dyed and examined it	THEORETICAL 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 awall 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 Practical: Assigning	Short exams, assignments, and discussions

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		vegetative cells from spores		tasks and reporting	
5	2Theoretical 3 practical	theoretical: 2;The student gets to know the contents Cytoplasm and bacterial movement PRACTICAL D1;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 A1;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 microsc	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	2Theoretical 3 practical	THEORETICAL A2;The student is familiar with the food environment Its composition and	THEORETICAL Food environments PRACTICAL Count bacteria by Hemocytometer	theoretical: Methods Audio Writing style On the board	Short exams, assignments, and discussions

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		types PRACTICAL By; the student can use thermometer slide	slide	Practical Assigning tasks and reporting	
8	2Theoretical 4 practical	THEORETICAL By; the student judges the effects Thermoregulation growth and methods Its reproduction PRACTICAL By; Serratia spp	THEORETICAL Thermoregulation growth cycles PRACTICAL Serratia spp	theoretical Methods Audio Writing style On the board Dialogue style Direct Practical Assigning tasks and reporting	Short exams, assignments, and discussions
9	2Theoretical 4 practical	THEORETICAL By; the student learns methods Count direct and nonbacterial bacteria PRACTICAL By; 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 4 practical	THEORETICAL By; the student is familiar with fungi And mold and its importance PRACTICAL By; the student can	THEORETICAL General characteristics of fungi PRACTICAL Count bacteria by Molded dishes	theoretical Methods Audio Writing style On the board Dialogue style Direct Practical Assigning	Short exams, assignments, and discussions

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		Count the bacteria after cultivation		tasks and reporting	
11	2Theoretical 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	2Theoretical 3 practical	THEORETICAL B5;The student explains the definition Yeasts and theirtypes And uses PRACTICAL B7;The student learns about methods Various sterilizations And ways to use it	THEORETICAL Yeasts PRACTICAL Sterilization	theoretical: Methods Audio Writing style On the board Dialogue style Direct Practical: Assigning tasks and reporting	Short exams, assignments, and discussions
13	2Theoretical 3 practical	THEORETICAL D1;The student knows the definitionFungi and their types And its uses PRACTICAL	THEORETICAL Fungi PRACTICAL Water tests	theoretical: Methods Audio Writing style On the board Dialogue style Direct Practical: Assigning	Short exams, assignments, and discussions

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		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	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

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	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 a 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

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