Course Description Form

1. Course Name:	
Principles of microbiology	
2. Course Code:	
PRMB205	
3. Semester / Year:	
First semester (fall) / 2023−2024	
4. Description Preparation Date:	
1/2/2024	
5. Available Attendance Forms:	
Presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 theoretical hours + 3 practical hours (75 hours) / 3.5 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr.Shaymaa Jawad Mahmood and Waadallah Hashem Abod	
8. 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 betwe microorganisms Humans and foods	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	
Theoretical - Interactive lecture - Brainstorming - Dialogue and discussion - Assigning reports -Conducting monthly and daily examinations	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 3Practical	**THEORETICAL** B1;The student demonstrates the concept and its origin Microbiology **PRACTICAL** B6;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	Shortexams, assignments, discussions
2	2Theoretical 3Practical	**THEORETICAL** C1;The student becomes familiar v the characteristics of living things Culture microscopy And chemical **PRACTICAL** B7;The student can prepare Slides bacterial staining With a fine dye	**THEORETICAL** Morphological characteristics For microbiology **PRACTICAL** Gram stain	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
3	2Theoretical 3Practical	**THEORETICAL** B2;The student hits a wall Cell and structures external to bacteria **PRACTICAL** C4;The student gets to know Bacteria Acid resistant He dyed and examined it	**THEORETICAL** External structures of bacteria **PRACTICAL** Acid-fast bacteria	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
4	2Theoretical 3Practical	**THEORETICAL** B3,b4;The student hits a wall Cell and structures external to bacteria **PRACTICAL** B8;Distinguish vegetative cells From spores	**THEORETICAL** External structures of bacteria **PRACTICAL** Painting blackboards	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
5	2Theoretical 3Practical	**THEORETICAL** C2;The student gets to know the contents Cytoplasm and bacterial movement **PRACTICAL** D2;Enable the student to operate Biology laboratory equipment Microscopic	**theoretical** Internal structures of bacteria **PRACTICAL** Laboratory equipment Microbiology	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
6	2Theoretical 3Practical	**THEORETICAL** A1;The student recognizes the elements Nutritional and physical Affect the growth of Organisms Microscopic **PRACTICAL** B9;The student can See the movement of bacteria Under the microscope	**THEORETICAL** Microbiology developn **PRACTICAL** Examination of bacteria movement By hanging drop	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
7	2Theoretical 3Practical	**THEORETICAL** A2;The student is familiar with the food environment Its composition and types **PRACTICAL** B10;The student can use Hemocytometer slide	**THEORETICAL** Food environments **PRACTICAL** Count bacteria by Hemocytometer slide	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
8	2Theoretical	**THEORETICAL**	**THEORETICAL**	**THEORETICAL**	Shortexams,

	3Practical	C3;The student judges the curves Microorganism growth and Methods Its reproduction **PRACTICAL** C5;Scientific visit	Microorganism growth curves **PRACTICAL** Scientific visit	audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	assignments, discussions
9	2Theoretical 3Practical	**THEORETICAL** A3;The student learns methods Count direct and non-bacterial bacteria Direct **PRACTICAL** C6;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** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
10	2Theoretical 3Practical	**THEORETICAL** A4;The student is familiar with Fungi And mold and its importance **PRACTICAL** B11;The student can Count the bacteria after cultivation	**THEORETICAL** General characteristics of fungi **PRACTICAL** Count bacteria by Molded dishes	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
11	2Theoretical 3Practical	**THEORETICAL** A5;The student is judged Exterior For molds and their uses **PRACTICAL** B12;The student Can Collect Samples from different sources	**THEORETICAL** Methods of mold reproduction Its types and uses **PRACTICAL** Count bacteria by Molded dishes	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
12	2Theoretical 3Practical	**THEORETICAL** B5;The student explains the definition Yeasts and their types And uses **PRACTICAL** B13;The student learns about methods Various sterilizations And ways to use it	**THEORETICAL** Yeasts **PRACTICAL** Sterilization	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
13	2Theoretical 3Practical	**THEORETICAL** D1;The student knows the definition Fungi and their types And its uses **PRACTICAL** B14;The student gets to know Examinations and tests Water validity And its microbial content	**THEORETICAL** Fungi **PRACTICAL** Water tests	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
14	2Theoretical 3Practical	**THEORETICAL** E1;Student governed definition Viruses and clarification Its types a ways of infection **PRACTICAL** B15;The student Can Preparing the culture Media Different and necessary For the growth of microorganisms	**THEORETICAL** Viruses **PRACTICAL** Cultivation media	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks and reports	Shortexams, assignments, discussions
15	2Theoretical 3Practical	**THEORETICAL** E2;The student is familiar with the relationship between living things Food microscopy **PRACTICAL** A6;The student reviews	**THEORETICAL** Microbiology relationsl With food **PRACTICAL** review	**THEORETICAL** audio methods, Writing on the board Direct dialogue style **PRACTICAL** Assigning tasks	Shortexams, assignments, discussions

		the curriculum Detailed and fast		and reports	

11. Course Evaluation

t	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Final theoretical report + theoretical practical reports	Theoretical 15 weeks Practical 1-15 weeks	7theoretical + 6 practical	13%
2	Short test 1 Quiz	3 weeks	4theoretical + 2practical	6%
3	Midterm exam (theoretical and practical)	9 weeks	10theoretical + 5 practical	15%
4	Short test 2 Quiz	12 weeks	4 theoretical + 2 practical	6%
5	Final practical test	practical exams week	20	20%
6	Final theoretical exam	theoretical exams week	40	40%
			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of microbiology / Dr. Fayez Al-Ani And Dr. Amin Suleiman Badawi
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Food microbiology by book , Doyle, Buchanan
Electronic References, Websites	

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Dr.ShaymaaJawadMahmood

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Waadallah Hashem Abod

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