







Course Description Form

1. Course Name:

Principles of microbiology

2. Course Code:

PRMB205

3. Semester / Year:

First semester (fall) / 2024-2025

4. Description Preparation Date:

1/9/2024

5. Available Attendance Forms:

Presence+ Electronic

- 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.Jwan Khaled mohi and Wadala 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 between 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
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Theoretical Practical

- Interactive lecture
- Brainstorming Dialogue and discussion
- Assigning reportsConducting monthly and daily examinations

Interactive lecture

- -Discussion, dialogue, brainstorming -Conducting laboratory experiments
- -Assigning reports
- -Conducting daily and monthly examinations

10. Course Structure

Wee	Hours	Required Learning	Unit or subject	Learning	Evaluation
k		Outcomes	name	method	method
1	2Theoretical 3Practical	THEORETICAL B1;The student demonstrates the concept and its origin Microbiology PRACTICAL B6;The student learns abore science Microbiology The microscope and how to use it	THEORETICAL Introduction to microbiology And the stages of development PRACTICAL Microscop	THEORETICAL audio methods, Writing on the board Direct dialegue style L'EATTUAL Actioning tysks	Shortexams, assignments, discussions
2	2Theoretical 3Practical	THEORETICAL C1;The student becomes familiar with the characteristics of living things Culture microscop And chemical PRACTICAL B7;The student can prepare Slides and bacterial staining With a fine dye	THEORETICAL Morphological characteristics For microbiology PRACTICAL Gram stain	Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions
3	2Theoretical 3Practical	THEORETICAL B2;The student hits a wallCell and structures external to bacteria PRACTICAL C4;The student gets to know Bacteria Acid resistant its dyed and examined it	THEORETICAL External structure 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 awall Cell and structures external to bacteria PRACTICAL B8;Distinguish vegetative cells from spores	THEORETICAL External structure of bacteria PRACTICAL Painting blackboards	audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, discussions

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5	2Theoretical	THEORETICAL	theoretical	THEORETICAL	Shortexams,
	3Practical	C2;The student gets to	Internal	audio methods,	assignments,
	1	know the contents	structures	Writing on the	discussions
		Cytoplasm and bacterial	of bacteria	board Direct	
	ļ	movement	PRACTICAL	dialogue style	
	ļ	PRACTICAL	Laboratory	PRACTICAL	
	ļ	D2;Enable the student	equipment	Assigning tasks	
	ļ	to operate Biology	Microbiology	and reports	
	ļ	laboratory equipment			
		Microscopic			
6	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	A1;The student recognize	Microbiology	audio methods,	assignments,
	ļ	the elements Nutritional	development	Writing on the	discussions
	ļ	and physical Affect the		boardDirect	
	ļ	growth of organisms		dialogue style	
		Microscopic	PRACTICAL	PRACTICAL	
	1	PRACTICAL	Examination of	Assigning tasks	
		B9;The student can	bacterial	and reports	
		See the movement	Movement By		
		of bacteria Under the	hanging drop		
		microscope			
7	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	A2;The student is	Food	audio methods,	assignments,
	ļ	familiar with the food	environments	Writing on the	discussions
	ļ	environment Its		board Direct	
	ļ	composition and types	PRACTICAL	dialogue style	
	ļ	PRACTICAL	Count bacteria by		
	ļ	B10;The student can use	Hemocytometer	Assigning tasks	
		Hemocytometer slide	slide	and reports	
8	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	C3;The student judges	Microorganism	audio methods,	assignments,
	511000000	_			_
1		the curves	growth curves	Writing on the	dicussions
		Microorganism	growth curves	board Direct	dinissions
		Microorganism growth and methods		board Direct dialogu	disussions
		Microorganism growth and methods Its reproduction	PRACTICAL	board Direct dialogu Jyles PRAC1 CA	dissions
		Microorganism growth and methods Its reproduction PRACTICAL		board Direct dialogu vyle PRACT CAR Assignin, tasks	dinissions
		Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit	PRACTICAL Scientific visit	board Direct dialogu vile PRACT CA Assigning task and reports	January and
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL	PRACTICAL Scientific visit THEORETICAL	board Direct dialogue yle PRACT CAL Assigning tasks and reports THEORETICAL	in the state of th
9		Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns	PRACTICAL Scientific visit THEORETICAL Types of farms an	board Direct dialogu vile PRACT CAL Assignin, task and reports THEORETICAL audio methods,	in of xams, assignments,
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct	PRACTICAL Scientific visit THEORETICAL Types of farms an counting methods	board Direct dialogucyle PRACT CAL Assigning tasks and reports THEORETICAL audio methods, Writing on the	in the state of th
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria	PRACTICAL Scientific visit THEORETICAL Types of farms an counting method: Bacteria	board Direct dialogu yle PRACT CAL Assignin, tasks and reports THEORETICAL audio methods, Writing on the board Direct	in of xams, assignments,
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct	PRACTICAL Scientific visit THEORETICAL Types of farms an counting method: Bacteria PRACTICAL	board Direct dialogue cyle PRACT CAL Assigning tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style	in of xams, assignments,
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL	PRACTICAL Scientific visit THEORETICAL Types of farms an counting method: Bacteria PRACTICAL Test and	board Direct dialogue cyle PRACT CAR Assignin, tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL	in of xams, assignments,
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL C6;The student can	PRACTICAL Scientific visit THEORETICAL Types of farms an counting methods Bacteria PRACTICAL Test and estimateNumber	board Direct dialogu vile PRACT CAL Assignin, task and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks	in of xams, assignments,
9	2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL C6;The student can Count Bacteria in	PRACTICAL Scientific visit THEORETICAL Types of farms an counting method: Bacteria PRACTICAL Test and estimateNumber of bacteria in	board Direct dialogue cyle PRACT CAR Assignin, tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL	in of xams, assignments,
	2Theoretical 3Practical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL C6;The student can Count Bacteria in milk samples	PRACTICAL Scientific visit THEORETICAL Types of farms an counting method: Bacteria PRACTICAL Test and estimateNumber of bacteria in milk	board Direct dialogu vile PRACT CAL Assignin, tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	in the same of the
9	2Theoretical 3Practical 2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL C6;The student can Count Bacteria in milk samples THEORETICAL	PRACTICAL Scientific visit THEORETICAL Types of farms ar counting method: Bacteria PRACTICAL Test and estimateNumber of bacteria in milk THEORETICAL	board Direct dialogue cyle PRACT CAL Assigning tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports THEORETICAL	Shortexams,
	2Theoretical 3Practical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL C6;The student can Count Bacteria in milk samples THEORETICAL A4;The student is	PRACTICAL Scientific visit THEORETICAL Types of farms an counting methods Bacteria PRACTICAL Test and estimateNumber of bacteria in milk THEORETICAL General	board Direct dialogu vile PRACT CAL Assignin, tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports	Shortexams, assignments, assignments, assignments,
	2Theoretical 3Practical 2Theoretical	Microorganism growth and methods Its reproduction PRACTICAL C5;Scientific visit THEORETICAL A3;The student learns methods Count direct and non-bacteria bacteria Direct PRACTICAL C6;The student can Count Bacteria in milk samples THEORETICAL	PRACTICAL Scientific visit THEORETICAL Types of farms ar counting method: Bacteria PRACTICAL Test and estimateNumber of bacteria in milk THEORETICAL	board Direct dialogue cyle PRACT CAL Assigning tasks and reports THEORETICAL audio methods, Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports THEORETICAL	Shortexams,

		And mold and its	DDACTICAI	Miniting on the	
			PRACTICAL	Writing on the	
		importance	Count bacteria by	board Direct	
		PRACTICAL	Molded dishes	dialogue style	
		B11;The student can		PRACTICAL	
		Count the bacteria		Assigning tasks	
		after cultivation		and reports	a1
11	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	A5;The student is	Methods of mold	audio methods,	assignments,
		Judged exterior	reproduction	Writing on the	discussions
		For molds and their uses	Its types and uses		
		PRACTICAL		dialogue style	
		B12;The student can	PRACTICAL	PRACTICAL	
		Collect Samples from	Count bacteria by	Assigning tasks	
		different sources	Molded dishes	and reports	_
12	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	B5;The student explains	Yeasts	audio methods,	assignments,
		the definition Yeasts and		Writing on the	discussions
		their types And uses		board Direct	
		PRACTICAL	PRACTICAL	dialogue style	
		B13;The student learns	Sterilization	PRACTICAL	
		about methods Various		Assigning tasks	
		sterilizations And ways		and reports	
		to use it			
13	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	D1;Thestudentknows	Fungi	audio methods,	assignments,
		definition Fungi		Writing on the	discussions
		and their types And its us	PRACTICAL	board Direct	
		PRACTICAL	Water tests	dialogue style	
		B14;The student gets		PRACTICAL	
		know Examinations		Assigning tasks	
	and tests Water			and reports	
	validity And its				
		microbial content			
	_				
14	2Theoretical	THEORETICAL	THEORETICAL	THEORETICAL	Shortexams,
	3Practical	E1;Student governed	Viruses	audio methods,	assignments,
		definition Viruses and		Writing on the	discussions
	clarification Its types			board Direct	
1	and a				
		and ways of infection		dialogue style	
	الملاء المعه المع	and ways of infection PRACTICAL	PRACTICAL	dialogue style PRACTICAL	
W.	المراجعة الأوصل المراجعة المر	and ways of infection PRACTICAL 315;The student can	Cultivation	dialogue style PRACTICAL Assigning tasks	
Self.	المرابعة ال	and ways of infection PRACTICAL R15;The student can Preparing the culture me		dialogue style PRACTICAL	
A. C.	الله الدراعة والعالمات الموصل الموصل الموسل	and ways of infection PRACTICAL 315;The student can Peparing the culture me inferent and necessary	Cultivation	dialogue style PRACTICAL Assigning tasks	
Ser. Des	Music Report of the Control of the C	and ways of infection PRACTICAL R15;The student can Preparing the culture me inferent and necessary For the growth	Cultivation	dialogue style PRACTICAL Assigning tasks	
The state of the s	الستة وهنسة	and ways of infection PRACTICAL 315;The student can Preparing the culture me inferent and necessary	Cultivation	dialogue style PRACTICAL Assigning tasks	
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15	2Theoretical	and ways of infection PRACTICAL 315; The student can Preparing the culture medifferent and necessary For the growth microorganisms THEORETICAL	Cultivation media THEORETICAL	dialogue style PRACTICAL Assigning tasks and reports THEORETICAL	Shortexams,
15	2Theoretical 3Practical	and ways of infection PRACTICAL 315; The student can Peparing the culture medifferent and necessary For the growth microorganisms THEORETICAL E2; The student is familian	Cultivation media THEORETICAL Microbiology	dialogue style PRACTICAL Assigning tasks and reports	assignments,
15		and ways of infection PRACTICAL B15;The student can Peparing the culture me inferent and necessary For the growth microorganisms THEORETICAL E2;The student is familian with the relationship	Cultivation media THEORETICAL Microbiology relationship	dialogue style PRACTICAL Assigning tasks and reports THEORETICAL	· ·
15		and ways of infection PRACTICAL 315; The student can Peparing the culture medifferent and necessary For the growth microorganisms THEORETICAL E2; The student is familian	Cultivation media THEORETICAL Microbiology	dialogue style PRACTICAL Assigning tasks and reports THEORETICAL	assignments,

		Food microscopy PRACTICAL A6;The student re the curriculum Detailed and fast	views	PRACTICAL review	Writing on the board Direct dialogue style PRACTICAL Assigning tasks and reports		
1.1					and reports		
11. Course Evaluation							
t	Evaluation methods		Evaluation date (one week)		Grade	Relative weight %	
1	Final theoretical report + theoretical practical reports			etical 15 weeks cal 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 we	eks	4 theoretical + 2 practical	6%	
5	Final practical test		praction	cal exams week	20	20%	
6	Final theoretical exam		theore	etical exams week	40	40%	
					100	100	
12.	Learning and	d Teaching Resou	irces				
Required textbooks (curricular books, if any)			Principles of microbiology / Dr. Fayez Al-Ani And Dr. Amin Suleiman Badawi				
Main r	references (sour	ces)					
	Recommended books and references (scientific journals, reports)			Food microbiolo , Doyle, Buchana			
Electro	onic References	, Websites					

Subject teacher

Wadala Hashem Abod

Subject teacher

Dr.Jwan Khaled Mohi

Chairman of the Scientific Committee

Head of the department

Prof. Dr. Jassim Mohammed Alwan

Prof. Dr. Asmaa Muhammad Adel