



Republic of Yemen
Ministry of Higher Education & Scientific Research
21 September University of Medical & Applied Sciences



Faculty of Laboratory Medicine
Department of Microbiology & Immunology
Course Specification of Medical Bacteriology II
Course No. (03.02.326)
2022/2023

I. Course Identification and General Information:				
1	Course Title:	Medical Bacteriology II		
2	Course Code & Number:	03.02.326		
3	Credit Hours:	Theory Hours		
		Lecture	Exercise	Practical
		2	0	2
		Credit Hours		
		3		
4	Study Level/ Semester at which this Course is offered:	3rd Level / 1st Semester		
5	Pre –Requisite (if any):	Medical Bacteriology I		
6	Co –Requisite (if any):	None		
7	Program (s) in which the Course is Offered:	Bachelor in laboratory medicine		
8	Language of Teaching the Course:	English		
9	Study System:	semester		
10	Mode of Delivery:	Regular		
11	Location of Teaching the Course:	University Campus		
12	Prepared by:	Dr. Ghamdan Ahmed Altahish		
13	Date of Approval:	2022-2023		

II.	Course Description
	This course covers systemic pathogenic, their pathogenesis, modes of transmission, epidemiology,

methods for isolation, and identification. Areas of study include aerobic Gram-positive cocci, Gram-negative cocci, Gram-positive bacilli, and acid-fast bacilli, as well as methods of testing their susceptibility to antibacterial agents.

III. Alignment Course Intended Learning Outcomes with program outcomes		
III. Course Intended Learning Outcomes (CILOs)	Referenced PILOs	
A. Knowledge and Understanding: <i>Upon successful completion of the course, students will be able to:</i>		
a1	Discuss the classification, morphological features, pathogenicity, virulence factors, and mode of transmission, and identify cultural characters and biochemical reactions of the different common bacterial pathogens as well as different methods for laboratory diagnosis of infections caused by these bacteria.	A2
a2	Describe the different methods of infection control and practices in the laboratory and their role in the hospital infection control program	A4
B. Intellectual Skills: <i>Upon successful completion of the course, students will be able to:</i>		
b1	Diagnose common medical laboratory diagnostic tests for the different suspected human bacterial infections.	B2
C. Professional and Practical Skills: <i>Upon successful completion of the course, students will be able to:</i>		
c1	Interpret correctly the results of the various laboratory bacterial diagnostic tests and evaluate these results in correlation with the clinical condition of the patient	C3
D. Transferable Skills: <i>Upon successful completion of the course, students will be able</i>		
		Demonstrate advanced knowledge of his Laboratory Medicine specialist area; such as genetics. cellular pathology. clinical biochemistry. clinical immunology. hematology and transfusion science. and medical microbiology
		Explain all quality assurance measures and participate in performance improvement activities in the clinical laboratory
		- Diagnose common medical conditions affecting various organs of the human body.
		Take responsibility in analysis and clinical decision-making such as recognizing and resolving issues related to pre-analytical. analytical. and post-analytical steps of the testing process

<i>to:</i>		
d1	Educate the general public and assist patients through acceptable customer service interactions	D1 Educate the general public and to assist patients through acceptable customer service interactions

IV. Alignment Course Intended Learning Outcomes with Teaching Strategies and Assessment methods:			
(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1	Discuss the classification, morphological features, pathogenicity, virulence factors, and mode of transmission, identify cultural characters and biochemical reactions of the different common bacterial pathogens as well as different methods for laboratory diagnosis of infections caused by these bacteria	<ul style="list-style-type: none"> Interactive lectures Self-learning Discussion 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes)
a2	Describe the different methods of infection control and practices in the laboratory and their role in the hospital infection control program	<ul style="list-style-type: none"> Interactive lectures Self-learning Discussion 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes)
(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1	Diagnose common medical laboratory diagnostic tests for the different suspected human bacterial infections.	<ul style="list-style-type: none"> Interactive lectures Discussion Self-learning 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes). Assignment
C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1	Interpret correctly the results of the various laboratory bacterial diagnostic tests and evaluate these results in correlation with the clinical condition of the patient	Practical session	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes). Final practical exam



			• Assignment:
(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1	Educate the general public and to assist patients through acceptable customer service interactions	Seminar	Assignment

IV. Course Content:					
A – Theoretical Aspect:					
NO.	Units/Topics List	Sub Topics List	Number of Weeks	contact hours	Learning Outcomes (CILOs)
1	Introduction Mycobacterium tuberculosis Atypical mycobacteria Mycobacterium leprae	Introduction to Systematic Bacteriology Classification of Bacteria Identification of Bacteria Morphology of Bacteria Mechanisms of Bacterial Pathogenesis Diagnosis of Bacterial Infections Treatment of Bacterial Infections Prevention of Bacterial Diseases	2	4	a1,a2,b1
2	Gram-Negative Rods Related to the Respiratory Tract Introduction -Haemophilus -Bordetella -Legionella -Acinetobacter		2	4	a1,a2,b1,

3	Actinomycetes Introduction Actinomyces israelii Nocardia asteroides				
4	Mycoplasmas Introduction Mycoplasma pneumoniae	-Classification of Bacteria -Identification of Bacteria -Morphology of Bacteria -Mechanisms of Bacterial Pathogenesis -Diagnosis of Bacterial Infections -Treatment of Bacterial Infections -Prevention of Bacterial Diseases	2	4	a1,a2,b1,
5	Spirochetes Introduction Treponema 1. Treponema pallidum 2. Nonvenereal treponematoses Borrelia 1. Borrelia burgdorferi 2. Borrelia recurrentis & Borrelia hermsii 3. Borrelia miyamotoi Leptospira Other Spirochetes	-Classification of Bacteria -Identification of Bacteria -Morphology of Bacteria -Mechanisms of Bacterial Pathogenesis -Diagnosis of Bacterial Infections -Treatment of Bacterial Infections -Prevention of Bacterial Diseases	2	4	a1,a2,b1,
6	Chlamydiae Introduction Chlamydia trachomatis Chlamydia pneumoniae Chlamydia psittaci.	-Classification of Bacteria -Identification of Bacteria -Morphology of Bacteria -Mechanisms of Bacterial Pathogenesis -Diagnosis of Bacterial Infections -Treatment of Bacterial Infections -Prevention of Bacterial Diseases	2	4	a1,a2,b1,



8	Med term		1	2	.a1,a2,b1
9	Rickettsiae Introduction Rickettsia rickettsii & Rickettsia prowazekii Coxiella burnetii Anaplasma phagocytophilum Ehrlichia chaffeensis	-Classification of Bacteria -Identification of Bacteria -Morphology of Bacteria -Mechanisms of Bacterial Pathogenesis -Diagnosis of Bacterial Infections -Treatment of Bacterial Infections -Prevention of Bacterial Diseases	2	4	.a1,a2,b1
10	Minor Bacterial Pathogens Bacteria of Minor Medical Importance Abiotrophia Achromobacter Actinobacillus (Aggregatibacter) Aeromonas Alcaligenes Arachnia Arcanobacterium Arizona Bartonella quintana & Bartonella bacilliformis Bifidobacterium Bradyrhizobium Branhamella Burkholderia pseudomallei Calymmatobacterium Capnocytophaga Cardiobacterium Chromobacterium Chryseobacterium Citrobacter Corynebacterium jeikeium Corynebacterium minutissimum Edwardsiella Eikenella Erwinia Erysipelothrix	-Classification of Bacteria -Identification of Bacteria -Morphology of Bacteria -Mechanisms of Bacterial Pathogenesis -Diagnosis of Bacterial Infections -Treatment of Bacterial Infections -Prevention of Bacterial Diseases	2	4	.a1,a2,b1



	Eubacterium HACEK Group Haemophilus aegyptius Haemophilus ducreyi Hafnia Kingella Lactobacillus Micrococcus Mobiluncus Moraxella Peptococcus Peptostreptococcus Plesiomonas Porphyromonas Propionibacterium Rhodococcus Sarcina Spirillum Streptobacillus Streptococcus suis Tropheryma Veillonella Wolbachia Yersinia enterocolitica & Yersinia pseudotuberculosis				
11	Final Theoretical Exam		1	2	,a1,a2,b1
Tot	Number of Weeks /and Units Per Semester		16	32	

V. Teaching Strategies of the Course:

1-	<ul style="list-style-type: none"> Lectures
2-	<ul style="list-style-type: none"> Practical session
3-	<ul style="list-style-type: none"> Seminars
4	<ul style="list-style-type: none"> Self-learning

VI. Assessment Methods of the Course:

No	Assignment
1	<ul style="list-style-type: none"> Written Exams (Short Essays) and Quizzes
2	<ul style="list-style-type: none"> Multiple Choice Questions (MCQ)
3	<ul style="list-style-type: none"> Practical Exams (PE)
4	<ul style="list-style-type: none"> Assignment

VII. Assignments:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
	Assignment		5	5%	d1
1	Midterm Exam	8	15	15%	a1,a2,b1
2	Practical exam	12	30	30%	c1
3	Final Exam	16	50	50%	a1,a2,b1,d1
	Total	100		100%	



IX. Learning Resources:

· Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).

1- Required Textbook(s)

1-	
2-	Warren Levinson, Peter Chin-Honh, Elizabeth A. Joyce, Jesse Nussbaum and Brian Schwartz, Review of Medical Microbiology and Immunology, 2018, 15th edition, McGraw-Hill, ISBN: 978-1-259- 64449-8

2- Essential References.

1-	Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e Riedel, Stefan Published by McGraw-Hill Education, 2019 ISBN 10: 1260012026 ISBN 13: 9781260012026
2-	Bailey & Scott's Diagnostic Microbiology 15th Edition Patricia M. Tille- February 4, 2021

3- Electronic Materials and Web Sites etc.

1-	http://www.asmus.org \
2-	http://www.phage.org/black09.htm
3-	http://www.microbe.org/microbes/virus_or_bacterium.asp
4-	http://www.microbelibrary.org
	http://www.bact.wisc.edu/Bact330/330Lecturetopics

XI. Course Policies:

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: -If the student dose not attend for more than 6 times, the student will be obligated to withdrew from the course
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration