



Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Allied Medical Sciences Department

LM323 Clinical Microbiology (1)

First Semester 2023-2024

Course Catalog

3 Credit Hours. The theoretical lectures of Clinical Microbiology I (LM 323) course will provide students with the fundamental principles of clinical diagnostic microbiology. This course will cover applications of clinical (medical) microbiology and instructions in the theory, bacterial pathogenesis, and practical applications including: specimen collection, setup, standard identification methods, susceptibility testing, and reporting procedures and protocols. The laboratory exercises will provide the students with the most comprehensive experiences possible and will depend mainly on the commonly measured differential characteristics of selected pathogenic bacterial groups. The structure of microorganisms including the pathogenic properties of bacteria, fungi, and viruses are examined in detail. Basic genetic and molecular biological concepts are integrated and connected to clinical manifestations of disease. The course will cover general principles of infectious diseases and clinical microbiology laboratory diagnosis. Students will acquire an understanding of the physiological and virulence properties of pathogenic bacterial microorganisms and epidemiological factors contributing to human infectious disease; and an introduction to the activities and uses of antimicrobial agents for treatment (diagnostic microbiology course is an introduction to the fundamental concepts of infectious disease microbiology focuses on the laboratory analysis of clinical microbiology specimens in cases when an infectious disease is suspected). This course includes (contains): isolation, classification, detection, and characterization of high number of bacteria that can cause many infectious diseases. The course will focus on the detection (isolation) and identification of infectious bacterial agents (common pathogens) in the clinical microbiology laboratory that can cause diseases in different sites of human host by selecting standard microbiological methods (apply appropriate laboratory techniques for the identification of pathogenic microorganisms isolated from clinical microbiological specimens).

Teaching Method: On Campus

Text Book

Title	Bailey and Scott's Diagnostic Microbiology Patricia M. Tille Mosby Elsevier 2013 ; 2017 13 th , 14 th editions http://evolve.elsevier.com/Tille/micro/
Author(s)	Patricia M. Tille Mosby Elsevier
Edition	14th Edition
Short Name	Diagnostic Microbiology
Other Information	

Instructor

Name	Dr. Muhamad Ali Shakhathreh
Office Location	-
Office Hours	Sun : 10:00 - 12:00 Tue : 10:00 - 12:00 Wed : 11:00 - 12:00 Thu : 11:30 - 12:30
Email	mkshakhathreh@just.edu.jo

Instructor	
Name	Prof. Mamdoh Harahsha
Office Location	M5L4
Office Hours	Sun : 11:30 - 13:00 Tue : 11:30 - 13:00 Wed : 11:30 - 13:00 Thu : 11:30 - 13:00
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Class Schedule & Room
<p>Section 1: Lecture Time: Sun, Tue, Thu : 10:30 - 11:30 Room: M2202</p> <p>Section 2: Lecture Time: Sun, Tue, Thu : 12:30 - 13:30 Room: M4203</p>

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	General principles in Clinical Microbiology (including Laboratory techniques/handling biologicals; Risk assessment principles; Transport of infectious substances)	
Week 2	Bacterial Virulence Host? Pathogen Interactions Pathogenesis of Bacterial Infections	From Diagnostic Microbiology
Week 3	Catalase-Positive, Gram-Positive: Gram-Positive Cocci Staphylococcus, Micrococcus and similar organisms	
Week 4	Catalase-negative, Gram-Positive Cocci: Streptococci, Enterococcus and similar organisms	
Week 5	Non-Branching, Catalase-Positive, Gram-Positive Bacilli: Bacillus and similar organisms	
Week 6	Non-Branching, Catalase-Positive, Gram-Positive Bacilli: Bacillus and similar organisms	
Week 7	Non-Branching, Catalase-Negative, Gram-Positive Bacilli: Lactobacillus and similar organisms	

Week 8	Branching or Partially Acid-Fast Gram-Positive Bacilli: Nocardia and Streptomyces, Rhodococcus and similar organisms	
Week 9	Gram-Negative Bacilli and Coccobacilli (MacConkey-Positive,Oxidase-Negative): Enterobacteriaceae, Acinetobacter, Stenotrophomonas and other organisms	
Week 10	Gram-Negative Bacilli and Coccobacilli (MacConkey- Positive,Oxidase-Positive): Pseudomonas, Burkholderia and similar organisms Alcaligenes, Bordetella(non-pertussis), and similar organisms Vibrio, Aeromonas and similar organisms	
Week 11	Gram-Negative Bacilli and Cocobacilli (MacConkey- Negative,Oxidase-Positive): Moraxella, Eikenella, and Pasteurella	
Week 12	Gram-Negative Bacilli and Coccobacilli (MacConkey-Positive,Oxidase-Variable): Haemophilus Gram-Negative Bacilli that are optimally recovered on special media Helicobacter, Campylobacter, Legionella,Brucella, Bordetella pertussis, Bordetella parapertussis, and Francisella	
Week 13	Gram-Negative Cocci Neisseria and moraxella catarrhalis	
Week 14	Anaerobic Bacteria Overview and General Considerations Lab considerations	
Week 15	Mycobacteria and other bacteria with unusual growth requirements Mycobacteria,Obligate intracellular and non-culturable bacterial agents Cell-wall deficient bacteria: Ureaplasma and Mycoplasma Spirochetes	

Relationship to Program Student Outcomes (Out of 100%)											
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	MSLO1	MSLO2	MSLO3	MSLO4	MSLO5	MSLO6

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