



Jordan University of Science and Technology
Faculty of Medicine
Microbiology & Infection Control Department

MIC710 Clinical And Diagnostic Microbiology

First Semester 2025-2026

Course Catalog

3 Credit Hours. This course provides an in-depth exploration of the principles and practices of clinical microbiology and its relation to human infections. It also emphasis on the diagnostic techniques used to identify microbial pathogens in laboratory and clinical samples in addition to antimicrobial susceptibility. The course covers mechanisms of microbial transmission, principles of aseptic practice, and the role of the human body's normal microflora. It also provides detailed understanding of structure, pathogenesis and biology of bacterial, viral, fungal, and parasitic pathogens and the diseases they cause. Clinical correlation based on different body systems will be provided. The course provides the conceptual basis for understanding pathogenic microorganisms and the mechanisms by which they cause disease in the human body. The course is designed to develop knowledge and practical skills in clinical microbiology and diagnostic techniques used to identify and manage infectious diseases. Emphasis is placed on traditional microbiological methods, molecular diagnostics, and antimicrobial resistance (AMR) testing. Students will explore the role of microbiology in clinical decision making and infection control, equipping them with the expertise to apply diagnostic tools effectively in both healthcare and research settings.

Teaching Method: Blended

Text Book

Title	Sherris & Ryan's Medical Microbiology (8th Ed) [by Ryan et al.]
Author(s)	Sherris & Ryan's
Edition	8th Edition
Short Name	ref 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
ref 2	Medical Microbiology (10th Ed) [by Murray et al.] Textbook of Diagnostic Microbiology (7th Ed) [by Mahon and Lehman]	Murray et al.	10th Edition	

Instructor

Name	Prof. Hamed Alzoubi
Office Location	-
Office Hours	
Email	hmalzoubi6@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Wed : 14:00 - 15:30 Room: LAB

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Host-microbe interaction (Normal flora & Principles of infectious disease transmission and pathogenesis)	
Week 2	Bacteria: Review of cell structure, genetics & pathogenesis	
Week 3	Overview of bacterial diseases in humans	
Week 4	Viruses: Review of structure, replication & pathogenesis	
Week 5	Overview of viral diseases in humans	
Week 6	Fungi: Review of morphology & pathogenesis	
Week 7	Overview of fungal diseases in humans	
Week 8	Parasites: Review of classification, structure, life cycles & pathogenesis	
Week 9	Overview of parasitic diseases in humans	
Week 10	Diagnosis of infectious diseases: Conventional approach (Microscopy & Culture-based techniques)	
Week 11	Diagnosis of infectious diseases: Immunodiagnostic techniques	
Week 12	Diagnosis of infectious diseases: Molecular techniques	
Week 13	Antimicrobial susceptibility testing	
Week 14	Discussion	
Week 15	Revision	
Week 16	Exams	

