



Ministry of Higher
Education and Scientific
Research
Supervision and Scientific
Evaluation Authority
Department of Quality
Assurance and Academic
Accreditation



**Ibn Sina University of Medical and Pharmaceutical Sciences
College of Dentistry / Basic Sciences Department
Course Description Form
Academic Year 2024 / 2025**

**College: Dentistry, Ibn Sina University of Medical and
Pharmaceutical Sciences – Baghdad**

Department: Basic Sciences

Course Name: Microbiology

**Course Instructor: Assist. Prof. Dr. Mithal Abdulkarem
Abdaon**

College Dean's Seal
(Dean's Approval)

Department Seal
(Department Approval)

Course Description Form(microbiology)

1. Course Name:

Microbiology / 3rd class

2 .Course code

3 .Semester/year

year

4 .Description preparation Date

17/11/2024

5 .Available attendance forms

In-person

6.Number of Credit Hours(Total)/Number of uunits (Total)

120 hours/ 3 credits(60 theoretical + 60 practical)

7. Course administrator name (mention all, if more than one name)

-Assist. Prof. Dr. Mithal Abdulkarem Abdaon(Course administrator)

- Lect. Dr.Aevar AshrafKhorshed

- Lect. Dr.Husam Hussien Lazim

- Lect. Dr.Nbras Rada Mohammed

Practical part

- Assist.Lect. AmmarJawad Kaddhim

- Assist.Lect.Dania Bahaaulddin Ibrahim

-Assist.Lect.Mina Mohamed Kadhum

- Assist.Lect.Marwa Basim Sabri

Email:mithal.aon@ibnsina.edu.iq

8. Course Objectives

Introduction to medical microbiology, including its various types, pathogenesis, laboratory diagnosis, as well as immunology, antibiotics, and methods of sterilization disinfection.

9. Teaching and Learning Strategies

Strategy

1. Micro soft power point lecture method
2. Discussion method
3. Report method
4. Practical labs

10-Course Structure

1. Course Structure (First Semester of the Annual System):

Evaluation method	Teaching method	Practical part	Theoretical part	Required learning outcomes	Number of hours	Week
Weekly exam, Semester exam.	A theoretical lecture using PowerPoint.	Orientation to the Microbiology laboratory	Morphology, Ultra structures, physiology and metabolism of microorganisms:- -Eukaryotic & Prokaryotic cells -Cell structure of prokaryotes -Comparison between G+ve & G-ve cell wall	Understanding the structures of the cell, its metabolic activities, and the differences between types of cells.	2Theo/2Pra	١
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	The microscope	-Microbial growth, growth curve -Metabolism of microorganisms Molecular biology & bacterial genetics	Understanding the growth curve of microorganisms, their metabolism, and their molecular and genetic structure.	2Theo/2Pra	٢
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Sterilisation and disinfection:	-Sterilization and Disinfection	Understanding sterilization and disinfection methods and the types of disinfectants.	2Theo/2Pra	٣
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Bacterial growth	Antibiotic and chemotherapy:- -Antibiotic, sources -Mode of action of antibiotic -Anti-microbial sensitivity tests -Bacterial resistance -Prophylactic use	Understanding antibiotics, their types, mechanisms of action, resistance mechanisms, and prevention methods.	2Theo/2Pra	٤
Weekly exam, Semester exam	A theoretical lecture using	Types of culture media	Introduction to general immunology and oral immunology	Understanding the types of immunity in the body, the	2Theo/2Pra	٥

	PowerPoint		- Non-specific and specific immunity - Antigen - Immunoglobulin - Humeral and Cellular Immunity	structure and types of antigens, and antibodies.		
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Sampling and transport of test material	Cells and organs of the immune system - Complement system - Human leukocyte antigen - Role of complement and HLA in oral disease	Understanding the cells and organs that make up the immune system and their role in defending the body and resisting diseases.	2Theo/2Pra	٦
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Laboratory cultivation of microorganisms	- Oral and mucosal immunity - Autoimmunity and immune tolerance	Understanding oral immunity, autoimmune immunity, and immune tolerance.	2Theo/2Pra	٧
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Bacterial identification: 1- Macroscopical characteristics (colonial morphology and cultural characteristics).	- Hypersensitivity reactions - Antimicrobial and immunological defenses of saliva and gingival crevicular fluid components	Understanding the immune defense mechanisms of the gums and the components of the fluids within them.	2Theo/2Pra	٨
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	2. Microscopical examination (morphology of bacterial cells).	Host-parasite relationship & Nosocomial infection -Symbiosis, Commensalism, Amphibiosis, Antagonistic -Sources of infection in hospital and - nosocomial infections -Post-operative wound infection, burns infections	Understanding the types of relationships between microorganisms and the host, as well as the sources of infections and hospital-acquired bacterial infections.	2Theo/2Pra	٩
Weekly exam, Semester	A theoretical lecture	Staining	Streptococci -Pyogenic Streptococci	Understanding Streptococci bacteria, their	2Theo/2Pra	١٠

exam	using PowerPoint		-Lancefield group -Pathogenesis of streptococci -Epidemiology, treatment and prevention -Viridans streptococci -Pneumococci	classification into groups, pathogenicity, epidemiology, methods of treating infections caused by them, and prevention of these infections.		
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Biochemical tests (part 1).	Staphylococci -Virulence factors - and pathogenesis -Epidemiology, treatment and prevention	Understanding Staph. bacteria, their classification into groups, pathogenicity, epidemiology, methods of treating infections caused by them, and prevention of these infections.	2Theo/2Pra	١١
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Biochemical tests (part 2).	G- negative diplococci, <i>Vibrio</i> and <i>Moraxella</i> <i>Neisseria gonorrhoea</i> , <i>N. meningitidis</i>	Understanding the types of some groups of Gram-negative cocci bacteria.	2Theo/2Pra	١٢
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Biochemical tests (part 3).	Lactobacilli, Actinomyces and <i>Corynebacterium diphtheriae</i> & Diphtheroids	Understanding <i>Corynebacterium diphtheriae</i> and its pathogenicity.	2Theo/2Pra	١٣
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Antibiotic sensitivity test (part 1).	<i>Bacillus</i> : <i>B. subtilis</i> , <i>B. anthracis</i> and <i>B. cereus</i>	Understanding some types of pathogenic bacilli, including <i>Bacillus anthracis</i> .	2Theo/2Pra	١٤
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Antibiotic sensitivity test (part 2).	<i>Clostridium</i> : <i>C. perfringens</i> , <i>C. tetani</i> , <i>C. botulinum</i> , and <i>difficile</i>	Understanding some types of <i>Clostridium</i> bacteria, their types, and pathogenicity.	2Theo/2Pra	١٥

γ- Curriculum structure (second semester for the annual system):

Evaluation method	Teaching method	Practical part	Theoretical part	Required learning outcomes	Number of hours	Week
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Serological tests (antigen and antibody detection tests) (part 1).	Enterobacteriaceae -E.coli, Salmonella, Shigella,	Understanding the types of Enterobacteriaceae bacteria and their pathogenicity.	2Theo/2Pra	١٦
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Serological tests (antigen and antibody detection tests) (part 2).	Enterobacter, Klebsiella, proteus, Yersinia	Identification of types of Enterobacteriaceae bacteria and their pathogenicity.	2Theo/2Pra	١٧
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Nucleic acid assays, Animal pathogenicity test	Mycobacterium -Tuberculosis & Lepae	Identification of Mycobacterium tuberculosis and Mycobacterium leprae bacteria and their pathogenicity.	2Theo/2Pra	١٨
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Staphylococci	Brucella, Haemophilus, Vibrio	Identification of other pathogenic bacterial types, including Vibrio cholerae.	2Theo/2Pra	١٩
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Streptococci	- Aggregatibacter, porphyromonas, prevotella, Bacteroids	Understanding the pathogenicity of these bacterial types.	2Theo/2Pra	٢٠
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Corynebacterium	Fusiforms and Spirochaetes -Fusobacterium, leptotichia	Identifying the pathogenicity of these bacterial types.	2Theo/2Pra	٢١
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Spore-forming Gram-positive bacilli: Bacillus spp.	Treponema and oral Treponema	Identifying Treponema pallidum (syphilis bacteria) and its role in oral infections.	2Theo/2Pra	٢٢
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Clostridium spp.	Mycoplasma, Chlamydia and Rickittsiae	Identifying other types of microorganisms and their pathogenic significance.	2Theo/2Pra	٢٣
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Mycobacterium spp.	Ecology of oral flora -Indigenous flora -Supplemental	Identifying the environment of microorganisms, sources of oral	2Theo/2Pra	٢٤

			flora -Transient flora -Sources of oral bacteria -Factors modulating growth of bacteria in the oral cavity	bacteria, and factors affecting their growth in the oral cavity.		
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Enterobacteriaceae (part1)	Microbiology of dental caries -Dental plaque & plaque metabolism - plaque homeostasis -cariogenic microorganisms -Mutans Streptococci -Lactobacilli and Actinomyces-	Identifying the bacteria that cause dental caries and tooth decay and their pathogenicity.	2Theo/2Pra	٢٥
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Enterobacteriaceae (part2)	Microbial colonization- Caries prevention- Antibacterial factors in saliva- -Vaccination against dental caries	Identifying the antibacterial factors present in oral saliva and vaccination against tooth decay and dental caries.	2Theo/2Pra	٢٦
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Enterobacteriaceae (part3)	Microbiology of periodontal disease and Endodontics -Subgingival microbial complex -specific , non-specific and Ecological plaque hypothesis - Porphyromonas, Prevotella, Aggregatibacter virulence factors of periodontal pathogens endodontic microbiota and Routes of root canal infection -ecology of endodontic microbiology	Identifying all aspects related to gum decay caused by microorganisms.	2Theo/2Pra	٢٧

Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Neisseriae spp.	Virology -general structure of viruses -classification	Identifying the structure and components of viruses and their classification methods.	2Theo/2Pra	٢٨
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Virology	viral replication -Isolation & diagnosis -Oral virology	Identifying virus replication methods, isolation techniques, and diagnostic methods, as well as viral diseases associated with the mouth.	2Theo/2Pra	٢٩
Weekly exam, Semester exam	A theoretical lecture using PowerPoint	Mycology	- Oral mycology and Oral parasitology -Introduction, epidemiology, transmission -E.histolotica, E.gingivalis, T.tenax -Fungal cells -classification -Candida	Identifying fungi and parasites associated with oral diseases.	2Theo/2Pra	٣٠

11. Course Evaluation

The distribution is as follows: 6 points for the theoretical exam and 4 points for the practical exam in the first and second semesters 20 points for the midterm exam and 60 points for the final exams, totaling 100 points.

12. Teaching Learning Resources

-Essential microbiology for dentistry 5 th edition(2018) (Lakshman Samaranayake). -Kuby Immunology eighth edition(2019) (Jenni Punt;Sharpe)	required textbooks (Methodology if available)
--	--

Stanford;Patricia Jones;Judy Owen).	
Medical microbiology 27th edition(2019)(Jawetz,Melnick&Adelbergs)	Main References (Sources)
Various Global Scientific E-Learning Platform	Electronic references