

Microbiology Syllabus for Third Year 2023-2024

General Microbiology & Immunology

First Semester (45 Hours) (3 Hours/Week) Three Credit

Objectives: To give comprehensive information about the general characteristics, structures and conditions that affect the microorganisms and to provide a basic knowledge of the immune response and its involvement in health and disease.

45 Hours Theory (3 Hours/Week) = 3credit

30 Hours Practical (2 Hours/Week)= 1credit

Part 1: General Bacteriology (16 hrs.)

Introduction to Medical Microbiology	1	
Classification and Grouping of bacteria	1	
Bacterial cell structure	2	
Growth of bacteria & Cultivation	1	
Growth requirements of microorganisms	1	
Microbial Metabolism	2	
Pathogenesis of bacterial infections	2	
Microbial genetics & Biotechnology	2	
Molecular aspect in studying microbiology	1	
Sterilization & disinfectants	1	
Antimicrobial chemotherapy & resistance	2	

Part II. General Virology (6 hrs)

General properties & classification of viruses	2	
Viral replication	2	
Pathogenesis of Viral infection	1	
Prevention and treatment of viral infections	1	

Part III: Immunology (23 hrs)

Part I: Basic Immunology	hrs	
Introduction to immune system.	1	
Basis of body defense: specific & non specific	1	
Immune Responses	2	
Humoral Immunity	1	
Cell Mediated Immunity	2	
The Complement System	1	
Cytokines	1	
Antigen-Antibody Reactions	1	
MHC: Structure & Diseases	2	



Part II: Clinical Immunology		
Immune system cells migration and inflammation	1	
Immune system regulation	1	
Immunotherapy	1	
Transplantation immunology	1	
Hypersensitivity reactions	2	
Tolerance & Autoimmunity	2	
Immunodeficiency diseases	1	
Tumor immunity	1	
Infections & Immunity	1	

	<p align="center">First Semester General Microbiology & Immunology Practical Session (30hrs) 2 hrs/week (1Credit)</p>
1.	Instructions and Lab safety
2.	Staining Methods
3.	Culture media & colonial morphology
4.	Cultural characteristics & colonial morphology
5.	Antimicrobial sensitivity test
6.	Biochemical reactions
7.	Specimen collection
8.	Ag-Ab Interaction(Agglutination)
9.	Ag-Ab Interaction (Precipitation)
10	Immunoelectrophoresis & immunofluorescence
11	Complement fixation test
12	Radioimmunoassay and
13	Flowcytometry & HLA-Typing
14	Immunocytochemistry & Immunohistochemistry
15	Western blot, Northern blot & In Situ hybridization



Microbiology Syllabus for Third Year 2023-2024

Clinical & Diagnostic Microbiology

Second Semester (45 hours) (3 Hour/Week) Three Credit

Objectives: To introduce the most important and prevalent microorganisms (bacteria, viruses and fungus) that causing infections with more emphasis on that cause the major diseases in our country , in respect to the pathogenesis, new techniques of diagnosis, and modern vaccine production.

45 Hours Theory (3 Hours/Week) = 3credit

30 Hours Practical (2 Hours/Week)= 1credit

Part I: Systematic Medical Bacteriology(23 hrs)

Topic	hrs	
Gram positive cocci: <i>Staphylococcus</i>	1	
Gram positive cocci: <i>Streptococcus</i> & <i>Pneumococci</i>	2	
Spore forming Gram positive bacilli: <i>Bacillus</i>	1	
Spore forming Gram positive bacilli: <i>Clostridium</i>	2	
Non spore forming Gr+ve & -ve bacilli: <i>Listeria</i> & <i>Corynebacterium</i>	1	
<i>Mycobacterium</i>	2	
Enteric Gr-ve rods: Enterobacteriaceae Part I <i>E.coli</i> , <i>Klebsiella</i> , <i>Enterobacter</i> ,	2	
Enteric Gr-ve rods: Enterobacteriaceae: Part II <i>Salmonella</i> & <i>Shigella</i>	1	
<i>Proteus</i> & <i>Pseudomonas</i>	1	
<i>Vibrio</i> , <i>Pseudomonas</i> , <i>Plesiomonas</i> & <i>Aeromonas</i>	1	
<i>Campylobacter</i> & <i>Helicobacter</i>	1	
<i>Haemophilus</i> & <i>Bordetella</i>	1	
<i>Bacteroides</i> & <i>Legionella</i> & Miscellaneous organisms	1	
<i>Brucella</i> , <i>Francisella</i> & <i>Pasteurella</i>	1	
<i>Neisseria</i> & <i>Spirochaetes</i>	2	
<i>Mycoplasma</i>	1	
<i>Rickettsia</i> & <i>Chlamydia</i>	1	

Part II: Mycology (4hrs)

Introduction to Medical Mycology	1	
Superficial mycosis	1	
Subcutaneous mycosis	1	
Systemic mycosis & Opportunistic fungi	1	



Part11: Virology (18hrs)		
Coronaviruses	1	
Orthomyxoviruses	1	
Paramyxoviruses	1	
Poxviruses	1	
Monkeypox	1	
Parvoviruses	1	
Rubella and Adenoviruses	1	
Hepatitis viruses Part I & Part II	2	
Picornaviruses	1	
Herpes viruses Part I & Part II	2	
Arboviruses	2	
Rhabdoviruses & Rabies	1	
Viral gastroenteritis	1	
Oncogenic viruses	1	
Retroviruses & HIV infection	1	
Bacteriophage	1	

Second Semester Diagnostic microbiology	
Practical Session (30hrs) 2 hrs/week (1Credit)	
1.	Staphylococci
2.	Streptococci & Pneumococci
3.	<i>Bacillus & Clostridium</i>
4.	<i>Corynebacterium</i>
5.	<i>Mycobacterium</i>
6.	Enterobacteriaceae (<i>E. coli & Klebsiella</i>)
7.	<i>Salmonella & Shigella</i>
8.	<i>Proteus, Pseudomonas & Acinetobacter</i>
9.	<i>Vibrio cholera & Aeromonas</i>
10	<i>Neisseria sp</i>
11	Spirochaetes
12	Methods of diagnosis of viral infections
13	Virus titration
14	Molecular methods
15	Molecular methods



Parasitology Syllabus for Third Year 2023-2024

Medical Protozoology & Entomology

First Semester (30Hours)(2 Hours/Week) Two Credit

The following points will be discussed for each parasites mentioned below.

- 1- Geographical distribution.
- 2- Morphology ,biology and life cycle
- 3- Pathogenesis and symptomatology
- 4- Treatment
- 5- Epidemiology
- 6- Control
- 7- Diagnosis

30 Hours Theory (2 Hours/Week)- 2credit	
30 Hours Practical (2 Hours/Week)- 1credit	
Part I. Medical Protozoology	
Topic	hrs
GENERAL INTRODUCTION	3
1-Amoebae of man <u>Entamoeba histolytica and amoebiasis</u> <u>Entamoeba coli</u> <u>Entamoeba gingivalis</u> <u>Entamoeba hartmanni</u> <u>Endolimax nana</u> <u>Iodamoeba butschlii</u> <u>Trichomonas tenax</u> <u>Blastocystis hominis</u>	3
2-Flagellates A- Intestinal , oral and urogenatal flagellates <u>Giardia lamblia</u>	2



<i>Dientamoeba fragilis</i> <i>Trichomonas tenax</i> <i>Trichomonas vaginalis</i> <i>Chilomastix mesnili</i> and othre intestinal flagellates	
B- Blood and tissue flagellates . <i>Leishmania tropica</i> complex <i>L. major</i> complex <i>Leishmania donovani</i> complex <i>Leishmania braziliensi</i> scomplex <i>L. Mexicana</i> complex <i>Trypanosoma rhodesiense</i> <i>T. gambiense</i> <i>T. cruzi</i>	4
3-Ciliate . <i>Balantidium coli</i>	1
4- SPOROZOA a- Malarial Parasites. <i>plasmodium vivax</i> <i>plasmodium malariae</i> <i>plasmodium falciparum</i> <i>plasmodium ovale</i>	6
b- Toxoplasma , Pneumocystis, Emeria, Isospora ,Sarcocystis and Cryptosporidium	2
Part II. MEDICAL ENTOMOLOGY	
MEDICAL ENTOMOLOGY	6



Medical Entomology

Second Semester (30 Hours)(2 Hours/Week) Two Credit

The following points will be discussed for each parasites mentioned below:

- 1- Geographical distribution .
- 2- Morphology ,biology and life cycle
- 3- Pathogenesis and symptomatology
- 4- Treatment
- 5- Epidemiology
- 6- Control
- 7- Diagnosis

30 Hours Theory (2 Hours/Week)- 2credit	
30 Hours Practical (2 Hours/Week)- 1credit	
Medical helminthology	
Topic	hrs
Introduction	3
1- Cestodes . General consideration <i>Taenia saginata</i> <i>Taenia solium and cysticercosis</i> <i>Echinococcus and hydatid disease</i> <i>Diphyllobothrium and sparganosis</i> <i>Dipylidiumcaninum latum</i> <i>Hymenolepis nana</i> <i>Hymenolepis diminuta</i> <i>Multiceps multiceps</i>	5



<p>2-Trematodes (flukes). General consideration <i>Fasciola hepatica</i> & <i>F. gigantica</i> <i>Clonorchis sinensis</i> and <i>Opisthorchis felinus</i> Intestinal and lung flukes <i>Schistosoma haematobium</i> <i>Schistosoma mansoni</i> <i>Schistosoma japonicum</i></p>	<p>5</p>
<p>3-Nematodes. General consideration <i>Ascaris lumbricoides</i> <i>Enterobius vermicularis</i> <i>Trichuris trichiura</i> <i>Trichostrongylus</i> <i>Strongyloides stercoralis</i> <i>Ancylostoma duodenale</i> <i>Necator americanus</i> Cutaneous and visceral larva migrans <i>Trichinella spiralis</i> <i>Dracunculus medinensis</i></p> <p>The filariae.</p> <ol style="list-style-type: none"> 1- <i>Wuchereria bancrofti</i> 2- <i>Brugia malayia</i> 3- <i>Mansonella perstans</i> 4- <i>Mansonella ozzardi</i> 5- <i>Onchocerca volvulus</i> 6- <i>Loa loa</i> 	<p>15</p>



Microbiology Department Committee (No. of lectures):

	Name	1st Semester	2nd Semester
1.	Dr. Hanadi A. Jasim		
2.	Dr. Ihsan E. Alsaimary		
3.	Dr. Nael H. Ali		
4.	Dr. Lamya K. Baqer		
5.	Dr. Nibras J. Saliem		
6.	Dr. Wijdan N. Ibraheim		
7.	Dr. Nidham M, Ahmed		
8.	Dr. Haider A. Musa		
9.	Dr. Firas T. Mansour		
10.	Dr. Maysaloon A. Naser		
11.	Dr. Lina A. Naser		
12.	Dr. Mays J. Basil		
13.	Dr. Dania M. Shakir		
14.	Dr. Wasan Abdulameer		
15.	Dr. Ban Anas		
16.	Dr. Khadeeja S Madhi		
17.	Dr. Ahmed Wadi		
18.	Ass. lec. Raghad Sherif		
19.	Ass. lec. Mariam Nabeel		
20.	Ass. lec. Malak Qais		

