

Para-Medical Program

Specialization	المهارات المتخصصة
Course Number	020802111
Course Title	علم الأحياء الدقيقة
Credit Hours	(3)
Theoretical Hours	(2)
Practical Hours	(3)

Brief Course Description:

This course focuses on the basic concepts and subjects of microbiology.

It describes microorganisms including prokaryotes and eukaryotes and gives general information on bacteria, fungi, viruses and some parasites.

It deals with the relationship between microorganism and the disease they cause, also how to diagnose, treat them by different antimicrobial drugs and prevent these diseases.

Course Objectives:

- Enable students to know history and some concepts in microbiology.
- Differentiate between different types of microorganism.
- Gain knowledge on sterilization techniques and disinfection.
- To know principles of disease and their epidemiology.
- To learn about antimicrobials and how they act on microorganisms.
- To isolate and identify microorganisms in the lab.
- To know about immunology and how the human body resists infection.
- To introduce information about some infectious diseases.

Detailed Course Description:

Unit number	Unit Name	Unit Content	Required Time
1	Microbiology	<ul style="list-style-type: none"> -Definition- -History and scope of microbiology -Microorganisms and human body -Prokaryotes and eukaryotes -General classification of microbiology: <hr/> <ul style="list-style-type: none"> *Bacteriology *Virology *Mycology *Parasitology *Phycology 	
2	Bacteria	<ul style="list-style-type: none"> -Bacterial cell structure -Reproduction of bacteria - Morphological characteristics of Bacteria -Bacterial toxins -Factors affecting bacterial growth: Nutritional and environmental factors -Bacterial culture media: Classification and preparation 	
3	Sterilization & Disinfection	<ul style="list-style-type: none"> -Definition -Physical and chemical methods of sterilization and disinfection 	
4	Bacterial Infections	<ul style="list-style-type: none"> -Host parasite relationship -Symbiotic relationship -Normal microbial flora of human body -Bacterial pathogenicity, virulence and epidemiology -Collection of microbiological specimens -Lab tests used to identify bacterial infections 	
5	Antimicrobial Agents	<ul style="list-style-type: none"> -Definition -Mechanism of action of some antimicrobials -General properties of antimicrobials -Antimicrobial sensitivity testing 	
6	Immunology	<ul style="list-style-type: none"> -Non specific defenses of the host -Skin and mucous membrane 	

		<ul style="list-style-type: none"> -Phagocytosis -Kinds of immunity -Antigens and antibodies -Hyper sensitivity & autoimmunity -Vaccines: Types 	
7	Virology	<ul style="list-style-type: none"> - Introduction - Structure, Size and shapes of viruses -Multiplication and cultivation -Interferon -oncovirus -Bacteriophages -Some viral infections 	
8	Mycology	<ul style="list-style-type: none"> -Structure of fungus -Habitat -Reproduction -Fungal infections(mycoses): *Superficial(Cutaneous) mycosis *Deep mycosis -Microscopic Examination & Cultivation of Fungi 	
9	Parasitology	<ul style="list-style-type: none"> -ntroduction -Classification -Protozoa:Shape, Structure ,life cycle,mode of transmission & source of infection -Helminthes:shape, Structure ,life cycle, mode of transmission & source of infection - Parasites -Human protozoan -Entamaeba -Giardia -Leishmania -Toxoplasma -Trichomonas -Plasmodium -Helminthes:shapes , Structure, life cycles, diagnosis &control -Nematodes 	

		<ul style="list-style-type: none"> -Ascaris -Enterabius -Trichuris -Cestodes -Teanias -Echinococcus -Trematodes -Schistosoma 	
10	Bacteria	<ul style="list-style-type: none"> *Gram positive bacteria: -Cocci:Staphylococci & Strepto cocci -Bacilli:Clostridia and Chlamydia *Gram negative bacteria: -Cocci :Neisseria -Bacilli: Enterobacteria -Acid-Fast Bacteria(Mycobacteria) 	

References:

1. Microbiology.2nd ed. ,2013.Dr. Tarek M. Al-Sanouri, Ms Amira Al-Shinawi& Mrs Nijmeh Rabba. Dar Tasneem ,Amman
2. Microbiology.2nd ed.2007.Mrs Sahar Al-Shinawi& Dr. Osama Abu Khalid.MujtamaArabiPuplication .Amman.
- 3.Microbiology ,An Introduction.12th ed. 2016.Gerard J. Tortora , Berdell R. Funke& Christine L. Case.Pearson.USA.
4. Prescott's Microbiology . 10th ed. 2016.Joanne Willey ,Linda Sherwood & Christopher J Woolverton .Willey Sherwood Woolverton,USA

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