



Paramedical Program

Specialization	Medical Laboratories
Course Number	020807141
Course Title	Immunology
Credit Hours	(3)
Theoretical Hours	(2)
Practical Hours	(3)



❖ تطبق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2009/2008



Brief Course Description:

This course deals with innate and acquired defense mechanisms. It focuses on the involvement of the immune system in various disease states and clinical conditions. It also provides an introduction to the principles of antigen-antibody reactions and their application in many laboratory tests.

Course Objectives:

Upon the completion of the course, the student should be able to:

1. Explain the process of immunity.
2. Discuss the principles of antigen-antibody interactions.
3. Discuss test methods used to detect antigen-antibody reactions.
4. Discuss the pathophysiology of hypersensitivity reactions.
5. Discuss common immunological disease states
6. Know about action of the immune system against microbes.





Detailed Course Description:

Unit Number	Unit Name	Unit Content	Time Needed
1	Introduction	1-Definition 2- Self & non self recognition (innate) 3- Immunity types.	
2	Non specific (Natural)immunity	1. Definition. 2. Mechanical , Physical ,chemical & Cellular factors.	
3	Antigen , Antibody	1. General specification of Antigen & chemical structure. 2. Antigen specificity. 3. Antibody structure(Immunoglobulin) 4. Types of Antibodies according to Immuno electrophoresis : IgM , IgG , IgE , IgD , IgA , & The importance of them in diagnosis. 5. Complement definition	
4	Antigen Antibody Reaction	Serological Tests: 1. Precipitation. 2. Agglutination. 3. Complement fixation. 4. ELISA test. 5. Immunofluorescence. 6. Polymerase chain reaction (PCR). 7. Radioimmunoassay (RIA).	
5	Acquired immunity	1. Definition. 2. Humeral Response. 3. Cellular Response. 4. Acquired immunity: active, passive. 5. Vaccines: a) Toxoid(Inactivated toxin) b) Dead(killed)=Inactivated c) Live attenuated d)Subunit and conjugate 6. Childhood vaccines program.	

❖ تطبق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2009/2008



6	Microbial agents and their immunological reactions.	<ol style="list-style-type: none"> 1. Viruses : Polio virus ,Measles , Mumps,Varicella Zoster,Rubella, Hepatitis :B,C 2. Bacteria : Dephtheroid bacilli ,TB , Typhoid bacilli , Streptococci. 3. Parasites: Toxoplasma , Malaria,Worms . 4. Fungi . 	
7	Hypersensitivity & Autoimmunity:	<ol style="list-style-type: none"> 1. Definition 2. Types ,causes & mechanism . 3. Autoimmunity diseases , causes & types. 4. Immunodeficiency <ul style="list-style-type: none"> - definition - types 	
8	Several tests study	<ol style="list-style-type: none"> 1. FTA-ABS 2. Immunoelectrophoresis. 3. ELISA 	
9	Practical Part	<ol style="list-style-type: none"> 1-Widal tset. 2-Detection of Brucellosis:(Rose- Bengal) 3- ASO titer. 4- CRP test. 5- RF test. 6- Pregnancy test. 7- TORCH test 8- Paul Bunnel test. 9- Detection of Mycoplasma Pneumonia. 10- VDRL 11- RPR. 12- Gel diffusion test. 13- Skin sensitivity test. 14- Cold agglutinin. 	

**Evaluation Strategies:**

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Practical Exam	10%	--/--/----
	Final Exam	35%Theory 15%Practical	--/--/----

Teaching Methodology:

- ❖ Lectures
- ❖ Slides and posters
- ❖ Practice inside labs

Text Books & References:**Reference**

- 1- The immune system 4th ed. 2014 Garland.
- 2- Janeway's Immunology , 9th ed. 2017. Kenneth Murphy Garland Publishing Inc.
- 3- Basic Immunology , 5th ed. Abul k.Abbas, Andrew H.h. Lichtman & Shiv Pillia . Elsevier.
- 4- Immunology . Richard Coico & Geoffrry Sunshine 7th ed. 2015. Willey Blackwell.



❖ تطبق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2009/2008