University of Warith AlAnbiyaa, College of Medicine

Curriculum Committee

Course Description

Year 1, Unit 2

2024-2025

Year 1, Unit 2 course content Infection and Immunity					
Unit 2		**Subjects**	**Topic/objectives**	**Duration**	**Lecturer**
Immunology					
Infection and Immunology	1	Innate & adaptive immunity	1. identify innate immunity. 2. List examples of the body's innate & adaptive defenses . 3. Summarize the events in the inflammatory response.	1 hr	د علي منصور
	2	Innate & adaptive immunity (continue)	1. identify adaptive immunity. 2. Explain the role of an antigen in the adaptive defenses. 3. Detail how innate defense differs from adaptive defense.	1 hr	د علي منصور

	3	Acquired immunity	1 .Distinguish between active and passive immunity. 2. Describe how active and passive immunity is developed.		د محمد صالح
	4	Organs & tissue of the immune system	1. Identify primary & secondary lymphatic organs 2. Discuss the differences between primary and secondary lymphatic organs.	1 hr	د محمد صالح
	5	Cells of the immune system: lymphoid lineage	1. recognize cells of lymphoid progenitor. 2. Describe the blood cells associated with adaptive defenses, and detail how they function,	1 hr	د محمد صالح
	6	Cells of the immune system: myeloid lineage	1. recognize cells of myeloid progenitor. 2. Describe the blood cells associated with innate defenses,	1 hr	د محمد صالح

			and detail how they function.		
	7	HLA complex	Define MHC complex. Recognize types & functions of MHC complex.	1 hr	د محمد صالح
	8	Antigens and immunogens	1. Identify antigens, immunogens, epitopes, hapten, carrier & adjuvants. 2. Recognize types of antigens & Discuss differences between antigens & immunogens. 3. Explain the role of an antigen in the adaptive defenses & Discuss antigen processing and presentation.	1 hr	د محمد صالح
	9	Immunoglobulin	1 .Identify immunoglobulins*.** 2 .Recognize general structural features & functions of	1 hr	د محمد صالح

			immunoglobulins*.** 3 .List isotypes of immunoglobulins with their specific functions ***. 4. Summarize the process of antibody-mediated immunity and list the cells involved in the process 5. primary and secondary immune response 6. Discuss the generation of antibody diversity & specificity.**		
	10	Complement system	1 .Understand the complement proteins***. 2 .Recognize complement pathways*** . 3 .List functions of the complement system*** . 4 .Discuss the regulation of the	1 hr	د محمد صالح

			complement system**. 5. list the causes of complement disorders.**		
	11	Cytokines	1. Identify proinflammatory & anti-inflammatory cytokines. 2. Recognize the importance of cytokines in immunity. 3. Recognize Cytokines as immunotherapy.	1 hr	د محمد صالح
	12	Immunological disorders: hypersensitivity reactions	1. list immune disorders. 2. identify types of hypersensitivity reactions. 3. Explain what causes an allergic reaction.	1 hr	د محمد صالح
	13	Immunological disorders: autoimmune disorders	1. Identify the causes of selected autoimmune diseases.	2 hrs	د محمد صالح

Bacteriology					
	1	Biosafety & bioterrorism	• Recognize term biosafety. • Identify biosafety levels. - Recognize the importance of biosafety in infection control. • Recognize term bioterrorism(ex. Anthrax)	4 hrs	د نسرين جواد
	2	Introduction of Bacteria	• Identify Structure of Bacterial Cells (Shape, Cell Wall, Cytoplasmic Membrane, Cytoplasm)	1hr	د نسرين جواد
	3	Growth	• Recognize the Growth Cycle • Define Aerobic & Anaerobic Growth • Recognize Fermentation of Sugars	1hr	د نسرين جواد

			• Iron Metabolism		
	4	Genetics	• Recognize bacterial genome. • Identify Mutations. • Recognize Transfer of DNA Within Bacterial Cells. 1. Conjugation 2. Transduction 3. Transformation	1hr	د نسرين جواد
	5	Classification of Medically Important Bacteria	• Recognize Principles of Classification. • Identify Bacterial virulence factors	1hr	د نسرين جواد
	6	Normal Flora	• Define normal flora • Identify Normal Flora of the Skin, the Respiratory Tract, the	1hr	د نسرين جواد

			Intestinal Tract & the Genitourinary Tract.		
	7	Pathogenesis	- Recognize Principles of Pathogenesis - List determinants of Bacterial Pathogenesis	1hr	د نسرين جواد
	8	Antibiotic resistance	- 1. Summarize how a pathogen becomes resistant to an - antibiotic. - 2. Explain the significance of antibiotic resistance. - 3. Identify MRSA & MDR.	1 hr	د نسرين جواد
	9	MRSA, MDR, XDR	-	1 hr	د نسرين جواد
	10	Diagnostics techniques	- Identify diagnostic procedures (microscopy, culture,	1 hr	د نسرين جواد

			serology, & PCR).		
	11	Sepsis	- Etiology and diagnosis of sepsis	1 hr	د نسرين جواد
	12	Pharmacology	• General principles of antimicrobial therapy • - Mechanism of action of antibiotics	2 hr	د نسرين جواد
Virology					
	1	Introduction to virology	1. Recognize Important terms and definitions in virology. 2. Identify Size and shape of viruses. 3. Recognize Classification of viruses. 4. identify Taxonomy of viruses.	1hr	د علي منصور
	2	Principles of viral structure	1. Define Viral proteins, types of symmetry.		د علي منصور

			2. Identify Viral lipid envelope and glycoproteins . 3. identify Viral genome.	1hr	
	3	Viral replication	1. Recognize One step growth curve. 2. Identify Steps in viral replication.	1hr	د علي منصور
	4	Types of viral replication	1. Identify the Mechanism of DNA viral genome replication.*** 2. identify the Mechanism of RNA viral genome replication.***	1hr	د علي منصور
	5	Pathogenesis of viral disease	1. Recognize steps in viral		د علي منصور

			pathogenesis. *** 2. Recognize Host immune response against viral infection.*** 3. Understand acute and chronic (persistent) viral disease.***	1hr	
	6	Prion disease		1 hr	د علي منصور
	7	Diagnosis of viral disease	1. Identify Cultivation of viruses.** 2. Identify the Quantitation of viruses. 3. Understand the Identification of viral particles.** 4. recognize the Laboratory safety processes.***	1hr	د علي منصور
	8, 9	HIV	1 .Identify the structures of HIV. 2. Summarize the HIV replication	2 hr	د علي منصور

			cycle, and list the types of cells this virus infects. 3 .List the modes of transmission of HIV. 4. Identify the phases of HIV.		
	10. 11	Vaccine:	components, principle & mechanism of action	2 hr	د علي منصور
	12	Pharmacology	Principles of antiviral drugs	1 hr	د علي منصور
Parasitology					
	1	Host-parasite Relationships. Parasite types.	1. Identify terms: Mutualism, Commensalism, Parasitism, Zoonosis	1hr	د عبدالحسين صاحب

			2. Explain the types of symbiotic relationships and give examples 3. Recognize different kinds of parasites.		
	2	Classification of parasites. Host types.	1. Classify the medically important parasites. 2. Identify the host and its types.	1 hr	د عبدالحسي ن صاحب
	3	Sources of Infection & mode of Transmission.	Describe the general epidemiological aspects of infection and transmission patterns of diseases	1 hr	د عبدالحسي ن صاحب

	4	Life Cycle	Describe life cycle of parasites.	1 hr	د عبدالحسي ن صاحب
	5	Pathogenesis & effect of parasite on host	Discuss the mechanisms by which parasites impose their effect on the host.	1 hr	د عبدالحسي ن صاحب
	6	▪ Blood & Tissue Protozoa	Leishmaniasis	1hr	د عبدالحسي ن صاحب
	7	Helminth	Echinococcosis (Hydatid disease)	1hr	د عبدالحسي ن صاحب
	8	Diagnostic techniques	Identify the methods and procedures of laboratory diagnosis of	1 hr	د عبدالحسي ن صاحب

			pathogenic parasites in clinical specimens.		
Mycology					
	1	Medical mycology: introduction	identify fungi structure & function.	1hr	د محمد صالح
	2	Medical mycology: introduction	Recognize classification of pathogenic fungi environmental mycology)	1 hr	د محمد صالح
	3	Virulence & pathogenesis	Recognize Virulence factors and types	1hr	د محمد صالح
	4	Virulence & pathogenesis	Human host	1 hr	د محمد صالح
	5	Mycoses	Recognize Superficial & cutaneous, subcutaneous,	1hr	د محمد صالح
	6	Mycoses	Recognize systemic, and opportunistic Mycoses	1 hr	د محمد صالح

	7	Aspergillosis		1hr	د محمد صالح
	8	Mucormycosis		1hr	د محمد صالح
	9	Pharmacology	Principles of antiparasitic and antifungal drugs	1 hr	د محمد صالح
Practical (Lab)					
	Lab. 1	Biosafety		2 hrs	د نسرين جواد
	Lab. 2	Sterilization		2 hrs	د نسرين جواد
	Lab. 3	Immunological diagnostic techniques	Agglutination reactions	2 hrs	د نسرين جواد
	Lab. 4	Gram staining		2 hrs	د نسرين جواد
	Lab. 5	Bacterial Sampling & culturing		2 hrs	د نسرين جواد

	Lab. 6	Parasitology lab: Sampling & staining		2 hrs	د عبدالحسي ن صاحب
	Lab. 7	Protozoa and Helminthes	• Entamoeba histolytica • Giardia lamblia • Taenia saginata • Schistosoma spp.	2 hrs	د عبدالحسي ن صاحب
	Lab. 8	Mycology lab : Sampling & culturing		2 hrs	د محمد صالح

Total: 60 hr. theory + 16 hrs practical

References

Human Biology, by Sylvia Mader
Jawetts Medical Microbiology