



وزارة التعليم العالي والبحث العلمي
جهاز الإشراف والتقويم العلمي



جامعة وارث الانبياء (ع)
كلية الطب

استمارة وصف البرنامج الاكاديمي للمعاهد والكليات 2026-2027

المقرر الدراسي

نموذج وصف البرنامج الأكاديمي

اسم الجامعة:	جامعة وارث الانبياء
الكلية/المعهد:	كلية الطب — جامعة وارث الانبياء (ع)
القسم العلمي:	كلية الطب
اسم البرنامج الأكاديمي أو المهني:	الوحدة الثانية- المرحلة الاولى
اسم الشهادة النهائية:	بكالوريوس في الطب و الجراحة
النظام الدراسي:	سنوي
تاريخ إعداد الوصف:	2026-09-19
تاريخ ملء الملف:	2026-09-19

التوقيع:

اسم معاون العلمي: م.د علي عبدالرضا الغرة

التاريخ: 2026/09/26

التوقيع:

اسم رئيس القسم: م.د محمد صالح مهدي

التاريخ: 2026/9/15

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة م.د أياد علي صاحب الموسوي والأداء الجامعي:

التاريخ:

2026/09/26

التوقيع:

Ayad

مصادقة السيد العميد

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نموذج وصف المقرر

1. اسم المقرر:	
الوحدة الثانية(المجهرات والمناعة)	
2. رمز المقرر:	
Medu 109	
3. الفصل / السنة	
2026-2027	
4. تاريخ إعداد هذا الوصف:	
15/9/2026	
5. أشكال الحضور المتاحة:	
المحاضرة النظري والعملية	
6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية):	
الكلية 80 ساعة (60-نظري -20 عملي)	
7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يُذكر):	
الاسم: ا.م.د. نسرین جواد كاظم	الإيميل: Nisreen.ja@uowa.edu.iq

8. أهداف المقرر	
أهداف المادة الدراسية:	
أهداف وحدة المجهرات والمناعة	
بنهاية دراسة الوحدة، يُتوقع من الطالب أن يكون قادرًا على:	
• التعرف على مفهوم علم الأحياء المجهرية وأهميته في المجال الطبي.	
• التعرف على أنواع المجاهر ومبادئ استخدامها والعناية بها.	
• التمييز بين الأنواع الرئيسية للكائنات المجهرية، مثل البكتيريا والفطريات والطفيليات والفيروسات.	
• وصف الشكل والتركيب الأساسي للخلايا والكائنات الدقيقة.	

- فهم طرق انتقال العدوى والعوامل التي تساعد على نمو وانتشار الكائنات الممرضة.
- التعرف على مفهوم المناعة وأنواعها، بما في ذلك المناعة الفطرية والمناعة المكتسبة.
- فهم دور الجهاز المناعي في حماية الجسم من مسببات الأمراض.
- التعرف على الخلايا والأعضاء والمواد الأساسية المشاركة في الاستجابة المناعية.
- التمييز بين المناعة الخلطية والمناعة الخلوية.
- فهم مفهوم الأجسام المضادة والمستضدات ودورها في الاستجابة المناعية.
- التعرف على بعض الاضطرابات المناعية والحساسية وأمراض المناعة الذاتية بصورة عامة.
- تطبيق إجراءات السلامة والتعقيم الأساسية عند التعامل مع العينات والكائنات المجهرية.
- تنمية مهارات الملاحظة والفحص المجهرية وتفسير النتائج المخبرية الأساسية.

9. استراتيجيات التعليم والتعلم

الاستراتيجية:

1. استراتيجيات التعليم والتعلم لوحدة المجهرات والمناعة

- المحاضرة التفاعلية: تقديم المفاهيم الأساسية مع طرح الأسئلة ومناقشة الطلبة.
- التعلم القائم على المشكلات: عرض حالات أو مشكلات مرتبطة بالعدوى والمناعة وتحليلها.
- التعلم التعاوني: تقسيم الطلبة إلى مجموعات لإنجاز أنشطة ومناقشة موضوعات الوحدة.
- التعلم العملي: تدريب الطلبة على استخدام المجهر وفحص الشرائح والعينات المجهرية.
- العصف الذهني: استثارة المعرفة السابقة حول الميكروبات وطرق انتقال العدوى والمناعة.
- التعلم القائم على الاستقصاء: تشجيع الطلبة على البحث وتحليل المعلومات المتعلقة بالكائنات الدقيقة والاستجابات المناعية.
- استخدام الوسائط التعليمية: الاستعانة بالصور المجهرية، الرسوم التوضيحية، النماذج ومقاطع الفيديو التعليمية.
- دراسة الحالة: تحليل حالات مرضية مبسطة لفهم العلاقة بين مسببات المرض والجهاز المناعي.
- المناقشة والحوار: تشجيع الطلبة على طرح الأسئلة وتفسير الظواهر والمفاهيم العلمية.
- التقويم التكويني: استخدام أسئلة قصيرة واختبارات سريعة وأنشطة صفية لقياس مدى تحقق أهداف التعلم.

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology Dr. Mohammed Salih	1h	1. Identify adaptive immunity. 2. Explain the role of an antigen in the adaptive defenses. 3. Detail how innate defense differs from adaptive defense.	Innate & adaptive immunity	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination.
Infection and Immunology Dr. Mohammed Salih	1h	1. Identify adaptive immunity. 2. Explain the role of an antigen in the adaptive defenses. 3. Detail how innate defense differs from adaptive defense.	Innate & adaptive immunity	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination.	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination.

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology Dr. Mohammed Salih	1h	1 .Distinguish between active and passive immunity. 2. Describe how active and passive immunity is developed.	Acquired immunity	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology Dr. Mohammed Salih	1h	1. Identify primary & secondary lymphatic organs 2. Discuss the differences between primary and secondary lymphatic organs.	Organs & tissue of the immune system	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology Dr. Mohammed Salih	1h	1. recognize cells of lymphoid progenitor. 2. Describe the blood cells associated with adaptive defenses, and detail how they function	Cells of the immune system: lymphoid lineage Cells of the immune system: lymphoid lineage	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology Dr. Mohammed Salih	1h	Define MHC complex. Recognize types & functions of MHC complex.	HLA complex	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology Dr. Mohammed Salih	1h	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	Antigens and immunogens	Interactive lecture, case-based learning, clinical discussion, problem-solving, and	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
		defenses & Discuss antigen processing and presentation.		self-directed learning	
Infection and Immunology Dr Mohammed	1h	1 .Identify immunoglobulins.2 . Recognize general structural features & functions of 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.	Immunoglobulin	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
		1 .Understand the complement proteins. 2 .Recognize complement pathways . 3 .List functions of the complement system . 4 .Discuss the regulation of the complement system. 5. list the causes of complement disorders .	Complement system	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology	1h	1. Identify proinflammatory & anti-inflammatory cytokines. 2. Recognize the importance of cytokines in immunity. 3. Recognize Cytokines as immunotherapy.	Cytokines	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology	1h	1. list immune disorders. 2. identify types of hypersensitivity reactions. 3. Explain what causes an allergic reaction.	Immunological disorders: hypersensitivity reactions	Interactive lecture, case-based learning, clinical discussion,	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
				problem-solving, and	
Infection and Immunology Dr Mohammed	2h	1. Define autoimmune disorders and explain the basic mechanisms of autoimmunity. 2. Explain the mechanisms of loss of self-tolerance and development of autoimmune responses. 3. Classify autoimmune diseases into organ-specific and systemic disorders. 4. Describe the roles of B cells, T cells, autoantibodies, and cytokines in autoimmune diseases.	Immunological disorders: autoimmune disorders	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	1. Define biosafety, biosecurity, and bioterrorism, and distinguish among them. 2. Explain the principles of biosafety in clinical and microbiology laboratories. 3. Identify biological hazards and assess risks associated with infectious materials. 4. Describe the different biosafety levels (BSL-1 to BSL-4) and their applications	Biosafety & bioterrorism	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	Identify Structure of Bacterial Cells (Shape, Cell Wall, Cytoplasmic Membrane, Cytoplasm)	Introduction of Bacteria	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	2h	- Recognize the Growth Cycle - Define Aerobic & Anaerobic Growth - Recognize Fermentation of Sugars	Growth	Interactive lecture, case-based learning, clinical discussion, problem-solving,	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
		Iron Metabolism		and self-directed learning	
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	Recognize bacterial genome. Identify Mutations. Recognize Transfer of DNA Within Bacterial Cells. Conjugation Transduction Transformation	Genetics	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	Recognize Principles of Classification. Identify Bacterial virulence factors	Classification of Medically Important Bacteria	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	2h	Define normal flora Identify Normal Flora of the Skin, the Respiratory Tract, the Intestinal Tract & the Genitourinary Tract	Normal Flora	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	- Recognize Principles of Pathogenesis - List determinants of Bacterial Pathogenesis	Pathogenesis	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	1. Summarize how a pathogen becomes resistant to an antibiotic. 2. Explain the significance of antibiotic resistance.	Antibiotic resistance	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	Identify MRSA & MDR. - Explain the significance of antibiotic resistance.	MRSA, MDR, XDR	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	Identify diagnostic procedures (microscopy, culture, serology, & PCR).	Diagnostics techniques	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	Etiology and diagnosis of sepsis	Sepsis	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Bacteriology) Ass.Prof.Dr Nisreen	1h	General principles of antimicrobial therapy - Mechanism of action of antibiotics	Pharmacology	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Recognize Important terms and definitions in virology. 2. Identify Size and shape of viruses. 3. Recognize Classification of viruses. identify Taxonomy of viruses.	Introduction to virology	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Define Viral proteins, types of symmetry. 2. Identify Viral lipid envelope and glycoproteins. identify Viral genome.	Principles of viral structure	Interactive lecture, case-based learning, clinical discussion, problem-solving,	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
				and self-directed learning	
Infection and Immunology (Virology) Dr Mohammed	1h	3. Define Viral proteins, types of symmetry. 4. Identify Viral lipid envelope and glycoproteins. identify Viral genome.	Viral replication	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Identify the Mechanism of DNA viral genome replication 2. identify the Mechanism of RNA viral genome replication	Types of viral replication	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Recognize steps in viral pathogenesis 2. Recognize Host immune response against viral infection 3. Understand acute and chronic (persistent) viral disease	Pathogenesis of viral disease	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Define prions and explain their unique characteristics as infectious protein agents. 2. Describe the molecular structure and abnormal folding of prion proteins. 2. Explain the mechanisms of prion propagation and neurodegeneration. 3. Classify the major types of prion diseases, including sporadic, inherited, and acquired forms.	Prion disease	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology)	1h	1. Identify Cultivation of viruses.	Diagnosis of viral disease	Interactive lecture, case-based learning, clinical	MCQs, short-answer questions, clinical case-based questions, quizzes,

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Dr Mohammed		2. Identify the Quantitation of viruses. 3. Understand the Identification of viral particles. 4. recognize the Laboratory safety processes		discussion, problem-solving, and self-directed learning	class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Identify the structures of HIV. 2. Summarize the HIV replication cycle, and list the types of cells this virus infects. 3. List the modes of transmission of HIV. 4. Identify the phases of HIV.	HIV	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Define vaccines and explain their basic principles and importance in disease prevention. 2. Classify the major types of vaccines, including live-attenuated, inactivated, subunit, toxoid, conjugate, and mRNA vaccines. 3. Describe the mechanisms of vaccine-induced innate and adaptive immune responses.	Vaccine: components, principle & mechanism of action	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Virology) Dr Mohammed	1h	1. Define basic concepts and terminology in pharmacology. 2. Explain the mechanisms of drug action and drug-receptor interactions. 3. Classify drugs according to their pharmacological properties and therapeutic uses.	Pharmacology- Principles of antiviral drugs	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	1. Identify terms: Mutualism, Commensalism, Parasitism, Zoonosis 2. Explain the types of symbiotic relationships and give examples 3. Recognize different kinds of parasites.	Host-parasite Relationships. Parasite types	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	1. Classify the medically important parasites. 2. Identify the host and its types.	Classification of parasites. Host types	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	Describe the general epidemiological aspects of infection and transmission patterns of diseases	Sources of Infection & mode of Transmission	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	Describe life cycle of parasites.	Life Cycle	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	Discuss the mechanisms by which parasites impose their effect on the host.	Pathogenesis & effect of parasite on host	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	1. Define blood and tissue protozoa and describe their major characteristics. 2. Classify important medically relevant blood and tissue protozoa. 3. Describe the morphology and life cycles of major protozoan parasites. 4. Explain the modes of transmission and vectors involved in protozoan infections.	Blood & Tissue Protozoa Leishmaniasis	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	1. Define echinococcosis and identify its causative <i>Echinococcus</i> species. 2. Describe the morphology and life cycle of <i>Echinococcus granulosus</i>. 3. Explain the modes of transmission and epidemiology of hydatid disease. 4. Identify the major organs commonly affected, particularly the liver and lungs. 5. Describe the clinical manifestations and complications of hydatid cysts.	Helminth Echinococcosis (Hydatid disease)	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Parasitology) Ass.Prof.Dr Nisreen	1h	1. Identify the methods and procedures of laboratory diagnosis	Diagnostic techniques	Interactive lecture, case-based learning, clinical	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology (Mycology) Ass.Prof.Dr Nisreen	1h	of pathogenic parasites in 2. clinical specimens Recognize classification of pathogenic fungi (environmental mycology)	Medical mycology: introduction	discussion, problem-solving, and self-directed learning Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	1h	Identify fungal structure & function	Medical mycology: structures and morphology	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	1h	Recognize Virulence factors and types	Virulence & pathogenesis	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	1h 1h	Virulence & pathogenesis	Human host	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	2h	Mycoses	Recognize Superficial & cutaneous, subcutaneous,	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	1h	1. Define aspergillosis and identify the major pathogenic species of <i>Aspergillus</i>. 2. Describe the morphology and important biological characteristics of <i>Aspergillus</i> species. 3. Explain the modes of transmission and risk factors for aspergillosis. 4. Classify the major clinical forms of aspergillosis, including allergic, chronic, and invasive disease.	Aspergillosis	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	1h	1. Define mucormycosis and identify the major causative fungi. 2. Describe the morphology and important characteristics of Mucorales fungi. 3. Explain the major risk factors, routes of infection, and epidemiology of mucormycosis. 4. Classify the major clinical forms, particularly rhino-orbital-cerebral, pulmonary, cutaneous, and gastrointestinal mucormycosis.	Mucormycosis	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Infection and Immunology (Mycology) Ass. Prof. Dr Nisreen	1h	1. Define antiparasitic and antifungal drugs and explain their general principles of use. 2. Classify major antiparasitic and antifungal drugs according to their mechanisms of action. 3. Explain the mechanisms of action of commonly used antiparasitic and antifungal agents. 4. Identify the major drugs used to treat protozoal, helminthic, and fungal infections.	Principles of antiparasitic and antifungal drugs	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	MCQs, short-answer questions, clinical case-based questions, quizzes, class discussion, and written examination
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define biosafety and explain its importance in clinical and research laboratories.	Lab.1 Biosafety	Interactive lecture, case-based learning, clinical discussion,	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
		2. Biological hazards and potential sources of laboratory exposure. 3. Explain the principles of risk assessment and risk management in the laboratory. 4. Describe the different biosafety levels (BSL-1 to BSL-4) and their applications. 5. Explain the proper use of personal protective equipment (PPE). 6. Describe safe procedures for handling, transporting, storing, and disposing of biological specimens.		problem-solving, and self-directed learning	4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define sterilization and distinguish it from disinfection and antisepsis. 2. Classify the major methods of sterilization. 3. Explain the principles and mechanisms of heat, chemical, radiation, and filtration sterilization. 4. Describe the use of moist heat sterilization, particularly autoclaving.	Lab.2 Sterilization	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define immunological diagnostic techniques and explain their importance in clinical diagnosis. 2. Explain the basic principles of antigen–antibody interactions. 3. Classify major immunological diagnostic methods. 4. Describe the principles of agglutination, precipitation, ELISA	Lab3. Immunological diagnostic techniques	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define Gram staining and explain its importance in bacterial identification. 2. Explain the principle of Gram staining based on differences in bacterial cell wall structure.	Lab4. Gram staining	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment –

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
		3. Identify the reagents used in Gram staining and describe their functions. 4. Perform the Gram-staining procedure correctly and safely.			7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define bacterial sampling and explain its importance in microbiological diagnosis. 2. Identify appropriate clinical specimens for the diagnosis of common bacterial infections. 3. Select appropriate sampling methods according to the suspected infection and specimen type. 4. Demonstrate correct techniques for specimen collection using aseptic procedures.	Lab5.Bacterial Sampling & culturing	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define parasitological sampling and explain its importance in laboratory diagnosis. 2. Identify appropriate clinical specimens for detecting intestinal, blood, and tissue parasites. 3. Demonstrate proper collection, labeling, handling, storage, and transportation of parasitological specimens. 4. Apply appropriate biosafety and aseptic techniques during specimen collection and processing. 5. Explain the principles of common parasitological staining methods	Lab6.Parasitology lab: Sampling & staining	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define protozoa and helminths and describe their major characteristics. 2. Classify medically important protozoa and helminths. 3. Describe the morphology and life cycles of major human parasites.	Lab7.Protozoa and Helminthes	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Learning Method	Assessment Method
		4. Explain the modes of transmission and routes of infection of parasitic diseases.			safety assessment 10. Final practical examination
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define fungal sampling and culture and explain their importance in the diagnosis of fungal infections. 2. Identify appropriate clinical specimens for the diagnosis of superficial, subcutaneous, and systemic fungal infections. 3. Demonstrate proper collection, labeling, handling, and transportation of fungal specimens. 4. Apply appropriate biosafety and aseptic techniques during specimen collection and processing.	Lab8.Mycology Sampling & culture	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define immunological tests and explain their importance in clinical diagnosis. 2. Explain the basic principles of antigen–antibody reactions. 3. Identify common immunological tests used in medical laboratories. 4. Perform basic immunological testing procedures using appropriate laboratory techniques	Lab9.Immunology test	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –
Dr Mohammed & Ass. Prof. Dr Nisreen	2h	1. Define molecular diagnostic tests and explain their importance in medical diagnosis. 2. Explain the basic principles of DNA and RNA detection. 3. Describe the main steps of DNA/RNA extraction from clinical specimens. 4. Explain the principles of PCR and its applications in molecular diagnosis. 5. Differentiate conventional PCR, RT-PCR, and real-time PCR (qPCR) .	Lab10.Molécule test	Interactive lecture, case-based learning, clinical discussion, problem-solving, and self-directed learning	1. Practical examinations 2. OSPE/OSCE – 3. Direct observation 4. Microscopic identification – 5. Practical assignments and reports – 6. Continuous assessment – 7. Quizzes 8 Case-based assessment 9. Laboratory safety assessment – 10. Final practical examination –

11. تقييم المقرر

يمكن اعتماد أساليب التقييم الآتية:

- الاختبارات التحريرية: لقياس فهم المفاهيم والمعلومات الأساسية في المجهرات والمناعة.
 - الاختبارات القصيرة: للتأكد من استيعاب الموضوعات بعد كل محاضرة أو وحدة.
 - الاختبارات العملية: تقييم قدرة الطالب على استخدام المجهر، والتعرف على العينات والشرائح المجهرية.
 - التقارير والواجبات: تقييم قدرة الطالب على جمع المعلومات العلمية وتنظيمها وتحليلها.
 - المشاركة والمناقشة الصفية: قياس تفاعل الطالب وقدرته على التفكير العلمي وطرح الأسئلة.
 - الأنشطة الجماعية: تقييم التعاون والعمل ضمن فريق وحل المشكلات.
 - دراسة الحالات: قياس قدرة الطالب على تطبيق المفاهيم الميكروبية والمناعية على الحالات المرضية.
 - التقييم النهائي: قياس مدى تحقق مخرجات التعلم والأهداف المحددة للمقرر في نهاية الوحدة.
- **First Semester:** 10 marks
 - **Mid-year exam:** 20 marks
 - **Second Semester:** 10 marks
 - **Final Exam:** 60 marks
 - **Total:** 100 marks

12. مصادر التعلم والتدريس

- 1-Essential clinical Immunology, JOHN B.Zabriskie
- 2-Kuby-Immunology-7th edition
- 3-Abbas AK and Lichtman Basic Immunology
- 4-world Journal of gastrointestinal pathophysiology
- 5- Review of medical microbiology and Immunology
6. Murray PR, Rosenthal KS, Pfaller MA. *Medical Microbiology*. 10th ed. Elsevier; 2025.
7. Riedel S, Morse SA, Mietzner TA, Miller S. *Jawetz, Melnick & Adelberg's Medical Microbiology*. 29th ed. McGraw Hill; 2026.
8. Tille PM. *Bailey & Scott's Diagnostic Microbiology*. 16th ed. Elsevier; 2025.

الكتب المقررة المطلوبة (المنهجية أن وجدت)

9. Levinson W, Chin-Hong P, Joyce EA, Nussbaum J, Schwartz B. *Review of Medical Microbiology and Immunology*. 15th ed. McGraw Hill.
10. Bennett JE, Dolin R, Blaser MJ, eds. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases*. Elsevier.
11. Garcia LS. *Diagnostic Medical Parasitology*. ASM Press.
12. Larone DH. *Medically Important Fungi: A Guide to Identification*. ASM Press.
13. World Health Organization. *Laboratory Biosafety Manual*. 4th ed. WHO; 2020.
14. Clinical and Laboratory Standards Institute. *Performance Standards for Antimicrobial Susceptibility Testing (M100)*. CLSI.
15. European Committee on Antimicrobial Susceptibility Testing. *Breakpoint Tables for Interpretation of MICs and Zone Diameters*. EUCAST.

Main References (Sources): Murray's Medical Microbiology; Jawetz, Melnick & Adelberg's Medical Microbiology; Cellular and Molecular Immunology (Abbas); Janeway's Immunobiology; Manual of Clinical Microbiology (ASM); CLSI guidelines; WHO Laboratory Biosafety Manual; and CDC resource

المراجع الرئيسية (المصادر)

Janeway's Immunobiology; Basic Immunology: Functions and Disorders of the Immune System; Medical Microbiology; Manual of Clinical Microbiology; Prescott's Microbiology; and Microbiology: An Introduction. Recommended journals include *Nature Reviews Microbiology*, *Nature Reviews Immunology*, *Clinical Microbiology Reviews*, *Journal of Clinical Microbiology*, *Clinical Infectious Diseases*, *The Lancet Microbe*, and *Frontiers in Immunology*. Supporting resources include WHO, CDC, CLSI, ASM, NCBI/PubMed, and ECDC guidelines and reports.

الكتب والمراجع الساندة التي يوصى بها
(المجلات العلمية، التقارير)

Electronic References, Websites: WHO; CDC; NCBI/PubMed; American Society for Microbiology (ASM); Clinical and Laboratory Standards Institute (CLSI); European Centre for Disease Prevention and Control (ECDC); National Institute of Allergy and Infectious Diseases (NIAID); Merck Manual Professional Edition; and Microbiology Society.

المراجع الإلكترونية، مواقع الإنترنت

