



Form: Course Syllabus	Form Number	EXC-01-02-02A
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	Number and Date of Revision or Modification	
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	Number of Pages	06

1.	Course Title	Medical Immunology
2.	Course Number	0534307
3.	Credit Hours (Theory, Practical)	2 Theory
	Contact Hours (Theory, Practical)	0 Practical
4.	Prerequisites/ Corequisites	
5.	Program Title	Doctor of Medicine
6.	Program Code	05
7.	School/ Center	School of Medicine
8.	Department	Pathology, Microbiology and Forensic medicine
9.	Course Level	Bachelor
10.	Year of Study and Semester (s)	Third year/ First Semester
11.	Program Degree	Bachelor
12.	Other Department(s) Involved in Teaching the Course	-
13.	Learning Language	English
14.	Learning Types	☐ Face to face learning ☒ Blended ☐ Fully online
15.	Online Platforms(s)	☒ Moodle ☒ Microsoft Teams
16.	Issuing Date	27 -12 -2023
17.	Revision Date	26 -10 -2025

18. Course Coordinator:**Name:** Anas Abu-Humaidan, M.D. Ph.D.

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19. Other Instructors:

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20. Course Description:

As stated in the approved study plan.

A- Course Description:

This course covers the types of immune cells and tissues, their distribution in the body, their functions, growth, development, and differentiation, antigens and their characteristics, antibodies and their types and functions, the complement system and its functions and activation, interaction between cells in the generation of the immune response, and clinical immunology topics such as serological reactions in diagnostics, immunopharmacology, autoimmunity, hypersensitivity, tumor immunology, immunology of transplantation, and immunodeficiencies.

B- Aims:

•Comprehensive Immunological Understanding:

Thoroughly describe the biology of the immune system, covering immune cells, tissues, and molecules involved in immune responses. Explore their development, activation, and regulation.

•Innate and Adaptive Immunity:

Differentiate between innate and adaptive immune responses, elucidating their mechanisms, functions, and interactions in immune defense.

•Recognition of Non-Self:

Explain the concept of recognizing non-self, delving into related topics like immunological tolerance and the mechanisms underlying autoimmunity.

•Immunopathology and Clinical Correlations:

Analyze immunopathological conditions through illustrative examples, including various types of hypersensitivity reactions and immunodeficiencies.

•Clinical Applications of Immunology:

Explore clinical aspects of immunology, including the development and use of vaccines, serological testing, organ transplantation, tumor immunology, and immunotherapeutic approaches



21. Program Intended Learning Outcomes: (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

PLO's	*National Qualifications Framework Descriptors*		
	Competency (C)	Skills (B)	Knowledge (A)
1.	☐	☐	☒
2.	☐	☒	☐
3.	☒	☐	☐
4.	☐	☐	☒
5.	☐	☒	☐
6.	☒	☐	☐
7.	☐	☐	☒
8.	☒	☐	☐

* Choose only one descriptor for each learning outcome of the program, whether knowledge, skill, or competency.

1. Demonstrate basic knowledge of normal human structure and function at molecular, genetic, cellular, tissue, organ, system and whole-body levels in terms of growth, development, and health maintenance. Analyze the basic molecular and cellular mechanisms involved in the causation and treatment of human disease and their influence on clinical presentation and therapy.
2. Collect, interpret, document, and communicate accurately a comprehensive medical history, including the psychological and behavioral factors, and a thorough organ-system-specific physical examination inclusive of the mental status of the patient.
3. Integrate and communicate collected clinical information in the construction of appropriate diagnostic and therapeutic management strategies to identify life-threatening conditions ensuring prompt therapy, referral, and consultation with relevant disciplines and skillfully perform basic medical procedures for general practice on patients with common illness, acute and chronic, taking into account environmental, social, cultural and psychological factors.
4. Demonstrate in-depth knowledge of the epidemiology and biostatistics of common diseases, and analyze the impact of ethnicity, culture, socioeconomic factors and other social factors on health, disease and individual patient's health care.
5. Communicate effectively and professionally, both orally and in writing, with patients, their families, and with other healthcare providers utilizing information technology resources in his/her scholarly activities and professional development with the ability to teach others, and to understand and respect other healthcare professionals' roles, and apply the principles of multidisciplinary teamwork dynamics and collaboration.



6. Apply scientific methods including evidence –based approach to the medical practice including problem identification, data collection, hypothesis formulation, etc., and apply inductive reasoning to problem solving and ensure that clinical reasoning and decision making are guided by sound ethical principles.
7. Demonstrate knowledge of scientific research methods and ethical principles of clinical research and be able to write research proposals or research papers.
8. Demonstrate professionally the skills needed for Quality improvement, lifelong learning, and continuous medical education including the ability to identify and address personal strength and weakness, self-assess knowledge and performance, and develop a self-improvement plan.

22. Course Intended Learning Outcomes: (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

Course ILOs #	The learning levels to be achieved						Competencies
	Remember	Understand	Apply	Analyse	Evaluate	Create	
1.	✓	✓					Comprehend Fundamental Microbiological and Immunological Concepts: Gain a deep understanding of key concepts in immunology, including microbial structure, immunological principles such as innate and adaptive immunity, immunological memory, and immune responses.
2.		✓	✓	✓	✓	✓	Analyze Microbe-Immune System Interactions: Develop the ability to analyze and explain the intricate interactions between



							microorganisms and the immune system, recognizing how pathogens evade or trigger immune responses and the consequences for health.
3.		✓	✓	✓	✓	✓	Evaluate the Immune System Function in Health and Disease: Assess the role of the immune system in maintaining health and its dysregulation in various diseases. Understand the mechanisms underlying immune-related disorders and the pharmacological agents used to modulate immune responses.
4.		✓	✓	✓	✓	✓	Identify and Host - Pathogens interaction: Identify and characterize important medical pathogens, including bacteria, viruses, fungi, and parasites, with a focus on the diseases they cause, transmission routes, and epidemiological significance



5.		✓	✓	✓	✓	✓	Apply Knowledge to Clinical Scenarios: Apply immunological knowledge to clinical scenarios, demonstrating the ability to diagnose, select appropriate treatments, and understand the impact of immunopathology on patient health
6.		✓	✓	✓	✓	✓	Explain Laboratory Techniques in Immunology: Describe the techniques and methods commonly used in microbiology and immunology laboratories, including microscopy and serologic testing

23. The matrix linking the intended learning outcomes of the course -CLO's with the intended learning outcomes of the program -PLOs:

Program ILOs ILOs of the course	CLO (1)	CLO (2)	CLO (3)	CLO (4)	CLO (5)	CLO (6)	Descriptors**		
							A	B	C
PLO (1)	✓						✓		
PLO (2)		✓	✓					✓	



PLO (3)				✓					✓
PLO (4)					✓		✓		
PLO (5)						✓		✓	
PLO (6)									✓
PLO (7)							✓		
PLO (8)									✓

***Linking each course learning outcome (CLO) to only one program outcome (PLO) as specified in the course matrix.**

****Descriptors are determined according to the program learning outcome (PLO) that was chosen and according to what was specified in the program learning outcomes matrix in clause (21).**

24. Topic Outline and Schedule:

Week	L e c t u r e	Topic	Student Learning Outcome (SLO)	Descriptor(s)	Learning Types (Face to Face/Blended/ Fully Online)	Lecturer	Synchronous / Asynchronous Lecturing	Evaluation Methods	Learning Resources
1	1.1	Introduction to Immunology	List the major components and basic functions of the immune system	K	Face to face	Anas	Synchronous Lecturing	Written exam	26. A
	1.2	Cells of the Immune System: Neutrophils and Mast Cells	Describe the structure, function, and effector mechanisms of neutrophils and mast cells	K, C	Blended	Anas	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.A
2	2.1	Cells of the Immune System: APCs and Lymphocytes	Compare the functions of antigen-presenting cells and lymphocytes in innate and adaptive immunity	K, C	Face to face	Anas	Synchronous Lecturing	Written exam	26.A



	2.2	Tissues of the Immune System	Identify and describe the structure and role of primary and secondary lymphoid organs	K	Blended	Anas	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.A
3	3.1	Pattern Recognition Molecules	Classify pattern recognition receptors (PRRs) and relate their structure to their immune functions	K, S	Face to face	Anas	Synchronous Lecturing	Written exam/ Online activities and assignments	26.A
	3.2	The Complement System	Identify major complement components, describe their activation pathways, and explain their biological roles	K, C	Blended	Anas	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.A
4	4.1	Antibodies	Explain the structure and functional diversity of immunoglobulin classes	K, C	Face to face	Anas	Synchronous Lecturing	Written exam/ Online activities and assignments	26.B
	4.2	Antigen Receptor Gene Rearrangement	Explain the molecular mechanisms of antigen receptor gene rearrangement and its significance in lymphocyte diversity	K, C	Blended	Anas	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.A, B
5	5.1	Immunity to Extracellular Pathogens	Explain the mechanisms of immune defense against extracellular pathogens	C	Face to face	Anas	Synchronous Lecturing	Written exam/ Online activities and assignments	26.A
	5.2	Immunity to Intracellular Pathogens and immune evasion strategies	Explain the mechanisms of immune defense against intracellular pathogens	C	Blended	Anas	Asynchronous Lecturing	Written exam	26.B
6	6.1	Antigen Recognition and Lymphocyte Development	Classify and describe different T-cell subsets and outline their development	K, C	Face to face	Nader	Synchronous Lecturing	Written exam	26.B
	6.2	Sepsis	Describe sepsis definitions,	C	Blended	Anas	Asynchronous Lecturing		



			pathophysiology, and treatments						
7	7.1	Immunological Tolerance and Autoimmunity	Explain mechanisms of central and peripheral tolerance and their failure in autoimmunity	C	Face to face	Nader	Synchronous Lecturing	Written exam/ Online activities and assignments	26.A
	7.2	Examples of Autoimmune Diseases	Discuss examples of autoimmune diseases and their underlying immunological mechanisms	K, C	Blended	Anas	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.A
8	8.1	B Cell Activation 1	Describe the stages and molecular signals involved in B-cell activation and antibody production	K, C	Face to face	Anas	asynchronous Lecturing	Written exam	26.A
	Midterm 22-11-2025								
9	9.1	Vaccine Immunology	Explain the principles of vaccine-induced immunity and types of vaccines used in clinical practice	K, C	Blended	Anas	Synchronous Lecturing	Written exam/ Online activities and assignments	26.B
	9.2	B Cell Activation 2	Describe the stages and molecular signals involved in B-cell activation and antibody production	K, C	Face to face	Anas	asynchronous Lecturing	Written exam	26.A
10	10.1	Overview of Immunoassays and Serological Reactions	Recognize common immunoassay methods and their clinical applications	S	Face to face	Esraa	Synchronous Lecturing	Written exam	26.A
	10.2	Secondary Immunodeficiencies	Identify causes and immunological characteristics of secondary immunodeficiencies	K, C	Blended	Esraa	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.B
11	11.1	Hypersensitivity Disorders I	Distinguish between immediate and delayed hypersensitivity reactions and their immunological basis	K, C	Face to face	Esraa	Synchronous Lecturing	Written exam	26.A
	11.2	Hypersensitivity Disorders II	Explain the immunological mechanisms of chronic and immune	C	Blended	Esraa	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.B



			complex-mediated hypersensitivity						
12	12.1	Transplantation Immunology	Describe immunological mechanisms of graft rejection and tolerance induction	C	Face to face	Anas	Synchronous Lecturing	Written exam	26.A
	12.2	Primary Immunodeficiencies	Classify primary immunodeficiencies and explain the immunological defects involved	K, C	Blended	Anas	Asynchronous Lecturing	Written exam	26.A
13	13.1	Tumor Immunology and Immunotherapy I	Identify the immune mechanisms involved in tumor recognition and destruction	K, C	Face to face	Anas	Synchronous Lecturing	Written exam	26.A
	13.2	Tumor Immunology and Immunotherapy II	Describe major immunotherapeutic strategies used in cancer treatment	C, S	Blended	Anas	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.A
14	14.1	Immunopharmacology I	Identify major classes of immunosuppressive and immunomodulatory drugs and their mechanisms of action	K, C	Face to face	Malik Zihlif	Synchronous Lecturing	Written exam	26.A
	14.2	Immunopharmacology II	Relate pharmacological agents to their clinical immunological applications and adverse effects	K, C	Blended	Malik Zihlif	Asynchronous Lecturing	Written exam/ Online activities and assignments	26.B
** K: Knowledge, S: Skills, C: Competency									

25. Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:



Evaluation Activity	Mark	Topic(s)	SLOs	Descriptors**	Period (Week)	Platform
Midterm exam	40	Week 1-6	1.1/ 1.2/ 2.1/ 2.2/ 3.1/ 3.2/ 4.1/ 4.2/ 5.1/ 5.2/ 6.1/ 6.2/ 7.1/ 7.2	K S	8 th week	Paper-based exam
Final exam	60	Weeks 7-14	9.1/ 9.2/ 10.1/ 10.2/ 11.1/ 11.2/ 12.1/ 12.2/ 13.1/ 13.2/ 14.1/ 14.2	K S C	15 th -16 th week	Paper-based exam
** K: Knowledge, S: Skills, C: Competency						

* According to the instructions for granting a Bachelor's degree.

**According to the principles of organizing semester work, tests, examinations, and grades for the bachelor's degree.

Mid-term exam specifications table*

(Tables below are completed on separate forms by course coordinators prior to conduction of each exam according to Accreditation and Quality Assurance Centre procedures and forms))

No. of questions/ cognitive level						No. of questions per CLO	Total exam mark	Total no. of questions	CLO/ Weight	CLO no.
Create %10	Evaluate %10	analyse %10	Apply %20	Understand %20	Remember %30					
1	1	1	4	2	1	10	100	100	10%	1

Final exam specifications table

No. of questions/ cognitive level						No. of questions per CLO	Total exam mark	Total no. of questions	CLO Weight	CLO no.
Create %10	Evaluate %10	analyse %10	Apply %20	Understand %20	Remember %30					
										1
										2
										3



										4
										5

26. Course Requirements:

(e.g.: students should have a computer, internet connection, webcam, account on a specific software/platform...etc.):

- ✓ **Class room Lectures**
- ✓ **Internet connection**
- ✓ **Online educational material using Moodle platform (Electronic Videos and Activities)**



27. Course Policies:

A- Attendance policies:

Attendance will be monitored by the course coordinator. Attendance policies will be announced at the beginning of the course.

B- Absences from exams and handing in assignments on time:

Will be managed according to the University of Jordan regulations. Refer to <http://registration.ju.edu.jo/Documents/daleel.pdf>

C- Health and safety procedures:

Faculty Members and students must at all times, conform to Health and Safety rules and procedures.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this course and also integrity in your behavior in and out of the classroom. Students violate this policy would be subjected to disciplinary action according to University of Jordan disciplinary policies

E- Grading policy:

Grade-point average, Rules are preset by the Faculty and Department Councils

F- Available university services that support achievement in the course:

Availability of comfortable lecture halls, data show, internet service and E learning website <https://elearning.ju.edu.jo/>

28. References:

- Abbas, Abul K. Cellular and molecular immunology/Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai; illustrations by David L. Baker, Alexandra Baker. — 7th ed.
 - 26th or 27th or any other recent edition of *Jawetz, Melnick, & Adelberg's Medical Microbiology*.
 - 8th or 9th or any other recent edition of *Janeway's Immunobiology*.
- Reviews, articles, and videos referred to in-lecture.



Name of the Instructor or the Course Coordinator: Dr. Anas Abu-Humaidan	Signature: 	Date: 26 -10 -2025
Name of Head of Department Professor Abdel Qadir Batah	Signature:	Date:
Name of the Head of Quality Assurance Committee/ Department Dr. Enas Al-Zayadneh	Signature:	Date: 11/5/2025
Name of the Head of Quality Assurance Committee/ School or Center Professor Ayman Wahbeh	Signature:	Date:
Name of the Dean or the Director Professor Ayman Wahbeh	Signature:	Date: