



Jordan University of Science and Technology
Faculty of Science & Arts
Applied Biological Sciences Department

BIO333 Immunology & Serology

First Semester 2017-2018

Course Catalog

3 Credit Hours. This course describes the immune systems of vertebrates that enable them to recognize and respond specifically to foreign substances. The molecular and cellular basis of immunity will be emphasized. The roles of antigens, antibodies and immunocompetent cells in pathogenesis and immunity to infectious diseases will be covered. Specific topics include antigens and antigenic determinants, antigen-antibody reactions, antibody structure and formation, anatomy and physiology of immunocompetent tissues, cellular immune responses, the complement system and other immune modulators, phagocytosis, monoclonal antibody formation, immunogenetics and the histocompatibility antigens, diseases of the immune system and immunopathology, tolerance, inflammation, allergies, and hypersensitivity reactions. The applications of immunology in the design of vaccines, immunotherapeutics, immunodiagnostics, and organ transplantation will be discussed, as well as the uses of immunology in biological research.

Text Book

Title	Immunology: A short course
Author(s)	Richard Coico and Geoffrey Sunshine
Edition	7th Edition
Short Name	Ref # 1
Other Information	The book is available at the book store and in the university library

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Roitt's Essential Immunology	Peter J. Delves, Seamus J. Martin, Dennis R. Burton and Ivan M. Roitt	10th Edition	13th edition is available
Ref # 3	Immunology for medical students	Roderick Nairn and Matthew Helbert	3rd Edition	
Ref # 4	Janeway's Immunobiology	Kenneth Murphy and Casey Weaver	9th Edition	

Instructor	
Name	Prof. Nizar Abuharfil
Office Location	PH1L1
Office Hours	Sun : 10:00 - 11:00 Mon : 10:30 - 11:30 Wed : 10:30 - 11:30 Thu : 09:30 - 10:30 Thu : 10:30 - 11:30 Thu : 11:30 - 12:30
Email	harfeil@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: SB19

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	INTRODUCTION AND OVERVIEW	
Week 1	ELEMENTS OF INNATE IMMUNITY	
Week 1	ACQUIRED IMMUNITY	
Week 2	IMMUNOGENES AND ANTIGENS	
Week 3	ANTIBODY STRUCTURE AND FUNCTION	
Week 4	THE GENETIC BASIS OF ANTIBODY STRUCTURE	
Week 5	BIOLOGY OF THE B LYMPHOCYTE	
Week 6	BIOLOGY OF T LYMPHOCYTE	
Week 7	THE ROLE OF THE MAJOR HISROCOMPATIBILITY COMPLEX IN THE IMMUNE RESPONSE	
Weeks 8, 9	ACTIVATION AND FUNCTION OF T AND B CELLS	
Week 10	CYTOKINES	
Week 11	AUTOIMMUNITY	
Week 12	TOLERANCE	
Week 13	COMPLEMENT	
Week 14	HYPERSENSITIVITY REACTIONS: ANTIBODY-MEDIATED (TYPE1) RACTIONS	
Week 14	IMMUNODEFICIENCY AND OTHER DISORDERS OF THE IMMUNE SYSTEM	
Week 15	TRANSPLANTATION IMMUNOLOGY	

Week 15	TUMOR IMMUNOLOGY	
Week 16	RESISTANCE AND IMMUNIZATION TO INFETIOUS DISEASE	

Mapping of Course Objectives to Program Student Outcomes ¹	Assessment method
Describe the basic principles of immunology including innate immunity, organs and tissues of immune system [2A, 1D]	
Describe the immunochemistry and immunogenetics of B cells and antibodies [1A, 2D]	
Describe the steps of immune response including development of B and T lymphocytes after antigen exposure [1A, 2D]	
Describe the immunobiology of the immune system including hypersensitivity, immunodeficiency, autoimmune diseases and tumor immunology [1A, 1F]	
Describe the immunity part of immune system including transplantation and vaccination [1A, 2D]	

Relationship to Program Student Outcomes (Out of 100%)					
A	B	C	D	E	F
43.33			41.67		15

Policy	
Class Attendance	Your class attendance is mandatory. Absences in excess of 20% of the total lecture hours will result in your being dropped from the course with a failing grade
Makeup Exams	Make-up exam appeals should be filed within one week of the missed exam
Cell Phones	Cell phones are prohibited during examinations and must be turned off during lecture. No incoming or outgoing calls or text messages are allowed
Cheating	Unethical conduct, including cheating during examintions, will result in punishment by the university administratino

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