هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Immunology & Serology**
Course Code:	**ZOOL354**
Program:	**Biology**
Department:	**Biology**
College:	**Science**
Institution:	**Jazan University**
Version:	**4**
Last Revision Date:	**18 October 2020**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	2				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered: 9th Level/ 3rd Year					
4. Course general Description • The immunology course provides an in-depth understanding of how the immune system responds to pathogens, including viruses, bacteria, and fungi. Students will learn about defense mechanisms, immune responses, and recognition and response mechanisms, such as innate and adaptive immunity, B and T cells, cytokines, immunodeficiencies, and autoimmune diseases.					
5. Pre-requirements for this course (if any): ZOOL 351 (Animal Physiology); MICR 232 (Virology).					
6. Co- requirements for this course (if any):					
7. Course Main Objective(s) 1. This course aims to provide students with a foundational and comprehensive understanding of the immune system and its responses to different pathogens. 2. By the end of the course, students should be able to distinguish between and compare humoral and cell-mediated immune responses. 3. Students will also be able to differentiate between and compare innate and adaptive immunity. 4. The course will explore the significance of the Major Histocompatibility Complex in terms of immune responses and transplantation. 5. In addition to theoretical knowledge, students will develop practical laboratory skills, including the use of various immunization methods, serum and plasma preparation, and the detection of antigen-antibody interactions using different immunological assays					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	33	100%
2.	E-learning	--	
3.	Hybrid • Traditional classroom • E-learning	--	
4.	Distance learning	--	

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	11
2.	Laboratory/Studio	22
3.	Field	0
4.	Tutorial	0
5.	Others (specify)	0
	Total	33

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define all principals, concepts, theories and aspects concerning with immunology.	K1-1	Interactive lectures. Classroom discussions Tutorials. Self-learning activities.	MCQs. Short answer questions. True/False. Quizzes. Midterm. Final.
1.2	Differentiate (Compare) between different mechanisms, functions, practices and aspects related to immunological sciences.	K2-1	Interactive lectures. Classroom discussions Tutorials. Self-learning activities.	MCQs. Short answer questions. True/False. Quizzes. Midterm. Final.
1.3	Interpret by using your knowledge and understanding some of immunological phenomena	K3-2	Interactive lectures. Classroom discussions Tutorials. Self-learning activities.	MCQs. Short answer questions. True/False. Quizzes. Midterm. Final.
2.0	Skills			
2.1	Examine theoretically or practically the slides, photos, diagrams or statements of immunological aspects.	S1-3	Interactive lectures. Classroom discussions Tutorials. Self-learning activities.	MCQs. Short answer questions. True/False. Quizzes. Midterm. Final.
2.2	Argue different immunological approaches in laboratory or field or even theoretically.	S2-2	Interactive lectures. Classroom discussions Tutorials. Self-learning activities.	MCQs. Short answer questions. True/False. Quizzes. Midterm. Final.
2.2	Design immunological experiment and procedures in laboratory or in the field or even theoretically.	S3-1	Interactive lectures. Classroom discussions Tutorials. Self-learning activities.	MCQs. Short answer questions. True/False. Quizzes. Midterm. Final.

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Access multiple sources of information, capture essential information, and distinguish it from extraneous data.	V1-3	Individual assignments. Group discussion. Lab-work. Self-learning activities. Micro-Project Presentation (individual and teamwork)	Lab work assessment, Short Answer Question, MCQs,
3.2	Illustrate awareness of risk assessment and safety observation when dealing with various equipment at various fields.	V2-1	Individual assignments. Group discussion. Lab-work. Self-learning activities. Micro-Project Presentation (individual and teamwork)	Lab work assessment, Short Answer Question, MCQs,

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction: Overview of the Immune System, Cells and Organs of the Immune System, self and non-self-theory.	1
2.	Antigen: Antigens and Immunogens definitions, General Properties of Immunogens, Antigen classification, Epitopes, Hapten, Cross reaction, Antigen receptors, Clusters of Differentiation (CD), Major Histocompatibility Complex (MHC), Tolerance.	**2**
3.	Antibodies: Structure of the Immunoglobulin (Ig), Antibodies Isotypes, Antigen-Antibody Interactions.	1
4.	Innate Immunity: Non-Specific Defense Mechanisms	1
5.	Cell-Mediated Immunity (CMI): Antigen-Presenting Cells (APCs), Antigen Processing and Presentation, Activation of T helper (T_H) Cells, Activation of T cytotoxic (T_C) Cells, Activation of Suppressor T Cells.	2
6.	Antibody Production: Humoral Immune Response.	1
7.	Immunohematology: Blood Group Antigens, Blood Group Systems, The ABO Blood Group System, Isoantibodies.	1
8.	Hypersensitivity (Allergy): Types of Hypersensitivity, Skin Test, Desensitization.	1
9.	Autoimmunity& Immunodeficiency: Autoimmune Diseases, Classification of Autoimmune Diseases, Classification of Immunodeficiencies.	1
Total		11

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Theoretical quiz	4	5
2.	Mid-term exam	6	10
3.	Practical quiz	5	5
4.	Practical assignment	6	5
5.	Final practical exam	11	20
6.	Final Exam	12	50

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	• D. M. Weir , John Stewart (1997) Immunology. Churchill Livingstone; (Translation in Arabic Dr. Maher Al Bassiouni Hussein. Publisher: king Saud University- Riyadh (2004) • Peter J. Delves, Seamus J. Martin, Dennis R. Burton, Ivan M. (2017) Roitt's Essential Immunology, 13th Edition.
Supportive References	• Helen Chapel, Mansel Haeney, Siraj Misbah, Neil Snowden (2014) Essentials of Clinical Immunology, Includes Wiley E-Text, 6th Edition • Richard Coico, Geoffrey Sunshine (2015) Immunology: A Short Course, 7th Edition • William E. Pual (2013) Fundamental Immunology, 7th Edition.
Electronic Materials	http://www.roitt.com/default.asp
Other Learning Materials	PowerPoint presentations given by the instructors practical and theoretical

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	1 Lecture room(s) for groups of 25 students. 1 Laboratory for group of 15 students.
Technology equipment (projector, smart board, software)	Internet connection, data show or smart board
Other equipment (depending on the nature of the specialty)	Light microscopes, glassware, chemicals, consumables, dissection tools.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer to peer Reviewer, students	Indirect (Surveys)
Effectiveness of students assessment	Program quality committee, Program leader, peer reviewer	Direct (Cross Check), Indirect (Surveys)
Quality of learning resources	Students	Indirect (Surveys)
The extent to which CLOs have been achieved	Course coordinator	Excel sheet of CLOs assessment (direct), Surveys (indirect)
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	BIOLOGY PROGRAM BOARD
REFERENCE NO.	BIO2214
DATE	20/9/2022AD

Course coordinator: **Dr. Mabrouk AboZaid Mabrouk**

Signature:

Head of Department

Name: **Dr. ABDULLAH YAHYA MASHRAQI**

Signature: