



Course Specifications

Course Title:	Immunology
Course Code:	BIO430
Program:	Bachelor of Science in Biology
Department:	Department of Biology
College:	Faculty of Science
Institution:	University of Tabuk

Table of Contents

A. Course Identification	3	
6. Mode of Instruction (mark all that apply)		3
B. Course Objectives and Learning Outcomes	3	
1. Course Description		3
2. Course Main Objective		3
3. Course Learning Outcomes		4
C. Course Content	4	
D. Teaching and Assessment	5	
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods		5
2. Assessment Tasks for Students		6
E. Student Academic Counseling and Support	6	
F. Learning Resources and Facilities	6	
1. Learning Resources		6
2. Facilities Required		6
G. Course Quality Evaluation	7	
H. Specification Approval Data	7	



A. Course Identification

1. Credit hours:	3 (2 Theoretical + 1 Practical) hours		
2. Course type			
a.	University <input type="checkbox"/>	College <input type="checkbox"/>	Department <input checked="" type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>	Others <input type="checkbox"/>
3. Level/year at which this course is offered:	Level 7/ First semester/ Fourth year		
4. Pre-requisites for this course (if any):	General Microbiology (BIO231)		
5. Co-requisites for this course (if any):	None		

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	50%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other (lab works)	2	50%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	26
2	Laboratory/Studio	26
3	Tutorial	
4	Others (specify)	
	Total	52

B. Course Objectives and Learning Outcomes

1. Course Description

- The course describes the basic structure of the immune system, development of the immune system, organs of the immune system, cells of the immune system, molecules of the immune system, innate immunity, acquired immunity and immune responses to bacteria and viruses.

2. Course Main Objective

By the end of this course, the students should be able to:

- To learn the history of immunology.
- To learn the structure of the immune system.
- To be able to distinguish between innate and acquired immunity (Humoral & Cellular)..
- To learn the differences between active, passive and adoptive immune vaccination.
- To be familiar with the antigen processing and presentation, Complement system, Antibodies and Antigens.
- To be familiar with hypersensitivity responses, immune deficiencies and autoimmunity.
- Describe the hypersensitivity responses, immune deficiencies, and autoimmunity.
- Follow scientific literature on the topics covered by the course.



3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Describe the structure and function of immune system.	K1
1.2	Recognize the related diseases and vaccine importance.	K2
2	Skills :	
2.1	Analyze the immune cells and their interaction with vaccinology.	S1
2.2	Differentiate between innate and adaptive immunity responses.	S2
2.3	Compare between different applications of monoclonal antibodies.	S3
3	Values:	
3.1	Work independently and as part of a team.	V1
3.2	Show ability to manage resources, time and other members of the group and write results of work to others.	V2

C. Course Content

No	List of Topics	Contact Hours
1	Overview of the course and definition of immunology, Innate and acquired Immunity, Components of the immune system	2
2	Origin, development, and differentiation of immune cells	2
3	Innate immunity receptors, and cytokines secretion.	2
4	Phagocytosis and antigens recognition	2
5	Complement activity pathways	2
6	Immunogens and Antigens	2
7	Antibody Classes, Functions, and regulation of their production	2
	Midterm Exam	
8	The molecular and genetic basis for antibody diversity	2
9	MHC Molecules Variability of MHC Genes & Products	2
10	Biology of T and B cells Differentiation and their receptor	2
11	Immunodeficiency diseases, Allergy, Transplantation and Grafts, Blood Transfusion	2
12	T Cell Receptors: Structure – Functions, Accessory Molecules	2
13	Immune responses to bacteria and virus, revision	2
	Final Exam	
Total		26

No	(List of Topics (Laboratory part	Contact Hours
1	Introduction and Lab Safety	2
2	Examination of Blood Grouping	2
3	Examination of Blood Grouping	2
4	Lymphoid organ of Chicken	2
5	Lymphoid organ of Chicken	2
6	Study Rocket Immuno-electrophoretic	2



7	Study Rocket Immunoelectrophoretic	2
	Midterm practical Exam	2
8	Evolution of Rocket Immunoelectrophoretic	2
9	Study of Leucocytes Types	2
10	Study of Leucocytes Types	2
11	Sandwich ELISA	2
12	Sandwich ELISA	2
13	Sandwich ELISA	2
	Final Practical Exam	
Total		26

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Describe the structure and function of immune system	<ul style="list-style-type: none"> - Lectures. - Case studies and articles. 	<ul style="list-style-type: none"> - Quizzes. - Homework. - Final exam.
1.2	Recognize the related diseases and vaccine importance	<ul style="list-style-type: none"> - Case studies and articles. - Activities and homework. 	<ul style="list-style-type: none"> - Quizzes. - Homework. - Final exam.
2.0	Skills		
2.1	Analyze the immune cells and their interaction with vaccinology..	<ul style="list-style-type: none"> - Lectures. - Individual and small group tasks. - Short essay. - Individual presentation and working as a part of group. 	<ul style="list-style-type: none"> - Assessment of lab reports and practical examinations. - Individual and group presentation. - Case studies. - Demonstration through charts and posters.
2.2	Differentiate between innate and adaptive immunity responses.	<ul style="list-style-type: none"> - Lectures. - Individual and small group tasks. - Short essay. - Individual presentation and working as a part of group. 	<ul style="list-style-type: none"> - Assessment of lab reports and practical examinations. - Individual and group presentation. - Case studies.



			- Demonstration through charts and posters.
2.3	Compare between different applications of monoclonal antibodies.	<ul style="list-style-type: none"> - Lectures. - Individual and small group tasks. - Short essay. - Individual presentation and working as a part of group. - Lab demonstration and working as a part of group. 	<ul style="list-style-type: none"> - Assessment of lab reports and practical examinations. - Individual and group presentation. - Case studies. - Demonstration through charts and posters.
3.0	Values		
3.1	work independently and as part of a team	<ul style="list-style-type: none"> - Essay writing. - Lab demonstration. - Individual presentation. 	<ul style="list-style-type: none"> - Oral and written scientific report. - Interactive discussion and participation.
3.2	Show ability to manage resources, time and other members of the group and write results of work to others	<ul style="list-style-type: none"> - Essay writing. - Lab demonstration. - Individual presentation. 	<ul style="list-style-type: none"> - Oral and written scientific report. - Interactive discussion and participation.

2. Assessment Tasks for Students

#	*Assessment task	Week Due	Percentage of Total Assessment Score
1	Activities and Short Quizzes	1-13	10%
2	Midterm Theoretical Exam	8	25%
3	Midterm Practical Exam	8	10%
4	Final Practical Exam	14	15%
5	Final Theoretical Exam	15	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- Office hours 10 hr/week -help sessions 1hr/week aided by two faculty members.

F. Learning Resources and Facilities



1. Learning Resources

Required Textbooks	- Abbas AK, Lichtman AH Cellular and Molecular Immunology. 6th edition. J Malley, H Krehling (eds), Saunders, Philadelphia. - Immunology at a Glance. 7th edition. J.H.L. PLAYFAIR and B.M. CHAIN. Blackwell Science Ltd.
Essential References Materials	- Immunology at a Glance. 7th edition. J.H.L. PLAYFAIR and B.M. CHAIN. Blackwell Science Ltd.
Electronic Materials	- Websites on the internet those are relevant to the topics of the course.
Other Learning Materials	- Multimedia associated with the textbook and the relevant websites.

2. Facilities Required

Item	Resources
Accommodation Classrooms, laboratories, demonstration (rooms/labs, etc)	- Lecture room with at least 30 seats.
Technology Resources AV, data show, Smart Board, software, (etc)	- Power point, Videos related to the subject.
Other Resources Specify, e.g. if specific laboratory equipment is required, list requirements or (attach a list)	- None.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching	Students	Indirect - Questionnaires.
2. Extent of achievement of course learning outcomes	Program committee. - Staff members. - Students.	Direct - Questionnaires. - Reports. - Meetings
3. Quality of learning resources	Program leaders. - Peer Reviewer	Direct & Indirect - Questionnaires. - Reports. - Meetings

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)



H. Specification Approval Data

Council / Committee	Biology Department council
Reference No.	
Date	1/6/2022

