



# Course Specifications

<b>Course Title:</b>	<b>Basic of Immunology</b>
<b>Course Code:</b>	<b>373239-3</b>
<b>Program:</b>	<b>Bachelor's in Clinical Laboratory Sciences (Level-7)</b>
<b>Department:</b>	<b>Clinical Laboratory Sciences</b>
<b>College:</b>	<b>Applied Medical Sciences</b>
<b>Institution:</b>	<b>Taif University</b>



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## A. Course Identification

<b>1. Credit hours: 3 hours</b>
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered: Level 4/Second Year</b>
<b>4. Pre-requisites for this course (if any): None</b>
<b>5. Co-requisites for this course (if any): None</b>

## 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4 hours /week= 60 hours/semester	100%
2	Blended	None	0%
3	E-learning	None	0%
4	Correspondence	None	0%
5	Other	None	0%

## 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	None
4	Others (specify)	None
	<b>Total</b>	<b>60</b>
<b>Other Learning Hours*</b>		
1	Study	58
2	Assignments	3
3	Library	None
4	Projects/Research Essays/Theses	None
5	Others(specify)	None
	<b>Total</b>	<b>61</b>

\*The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

This course provides the ground knowledge and skills to provide the student with a broad understanding of the immune system and its functions. Topics include activation and regulation of innate and adaptive immunity and the molecular basis of antigen specificity. Moreover, the course will also cover antibody structure and interaction with antigens, cytokines types, effects and complement activation pathways.

## 2. Course Main Objective

To study the basic immunological mechanisms in human body and analyze the body response as part of human defense system.

## 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge:</b>	
1.1	Identify innate and acquired immunity, the cellular basis of the immune response in normal and abnormal conditions.	K1
1.2	Recognize the significance of immunological markers, antigen-antibody reactions, and appropriate equipment for analysis.	K2
2	<b>Skills :</b>	
2.1	Explain the suitability of specimen for each immunological method and the appropriate instrumentation required.	S1
2.2	Interpret laboratory data and correlate it with the clinical manifestation of the diseases.	S2
3	<b>Competence:</b>	
3.1	Implement the methods required in the practice of immunology laboratory in a safe and effective way.	C1

## C (a) Course Content (Theory)

No	List of Topics	Contact Hours
1	Introduction to Host Immune Defenses	2
2	Lymphatic System	2
3	Innate and Acquired Immunity	4
4	Cytokines	2
5	Antigens and Immunogens	2
6	Cellular Basis of The Immune Response	2
7	The Major Histocompatibility Complex and Antigen Presentation to T Cells	2
8	Cell-Mediated Immunity	2
9	Humoral Immunity	4
10	The Genetic Basis of Antibody Structure and Function	2
11	Antigen–Antibody Interactions	4
12	The Complement System	2
<b>Total</b>		<b>30</b>

## (b) Course Content (Practical)

No	List of laboratory Topics	Contact Hours
1	Acceptance of request and samples	2
2	Introduction of Antigen-Antibody Interactions and Immunodiagnostic	2

3	Immuno-agglutination technique	2
4	Indirect hemagglutination test	2
5	Precipitation technique	2
6	ELISA technique	4
7	Serodiagnosis of Hepatitis B Virus and Hepatitis C Virus.	2
8	Serodiagnosis of Human Retrovirus.	2
9	Serological Diagnosis of Autoimmune Disorders and TORCH screening test	2
10	Immunofluorescent technique	4
11	Introduction of Flow cytometry and Its Application In Serology Lab.	2
12	Preparation and Staining of PBMC for FACS Analysis.	4
<b>Total</b>		30

## D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
<b>1.1</b>	Identify innate and acquired immunity, the cellular basis of the immune response in normal and abnormal conditions.	Lectures	- Exams
<b>1.2</b>	Recognize the significance of immunological markers, antigen-antibody reactions, and appropriate equipment for analysis.	- Lectures - Practical sessions	- Exams - Lab reports
<b>2.0</b>	<b>Skills</b>		
<b>2.1</b>	Explain the suitability of specimen for each immunological method and the appropriate instrumentation required.	- Lectures. - Practical sessions.	- Exams - Lab reports
<b>2.2</b>	Interpret laboratory data and correlate it with the clinical manifestation of the diseases.	- Lectures - Practical sessions. - Problem based learning (PBL).	Exams

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
3.0	<b>Competence</b>		
3.1	Implement the methods required in the practice of immunology laboratory in a safe and effective way.	- Lectures - Practical sessions	- Exams - Lab reports

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid-Term Exam	8 <sup>th</sup> Week	15%
2	Activity	Throughout the semester	5%
3	Practical Report	Throughout the semester	10%
4	Final Practical Exam	16 <sup>th</sup> Week	20%
5	Final Exam	17 <sup>th</sup> /18 <sup>th</sup> Week	50%
	<b>Total</b>		<b>100%</b>

\*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:

- Course instructors are available for individual consultation in their free time. They are usually full-time permanent members present on-campus from 8:00 am to 2:30 pm on all working days. Appointments can be made in person with the instructor through email etc. Days and time availability of each instructor are posted on their doors. Course instructors provide a range of academic and course management advice including course planning and its progression.
- Each student at the department of Clinical Laboratory Sciences has an academic adviser who is available for individual consultation and guidance. Appointments can be made in person with the instructor through email etc. Days and time availability of each adviser are posted on their doors. The academic adviser can provide support with time management, exam preparation, clarification of subject requirements, feedback on performance and dealing with personal issues as well.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Richard Coico and Geoffrey Sunshine, 2015, Immunology a Short Course 7 <sup>th</sup> edition, Wiley-Blackwell Todd, I., Spickett, G., & Fairclough, L. (n.d.). Lecture Notes: Immunology (7th ed.). Wiley
<b>Essential References Materials</b>	None

<b>Electronic Materials</b>	Saudi Digital Library, PubMed and Google Scholar
<b>Other Learning Materials</b>	Journals and Articles

## 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Laboratories
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Data show, Blackboard and A/V
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	ELISA Flowcytometry Class 2 Biological Safety Cabinets Antibodies and Immunological Kits.

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student's feedback on effectiveness of teaching and quality of courses.	Students	Indirect: Questionnaire Survey at the end of each semester.
Alignment map of course ILOs with that of program ILOs.	Development and accreditation committee	Direct: Student's Performance.
Availability of learning resources, facilities and equipments related to each course.	Students and faculty	Indirect: Questionnaire Survey at the end of each semester.
Evaluation of teaching	Peer evaluators	Direct: Peer evaluation
Standard of student achievement	Examination Committee	Direct: Students grades
Periodical review of course effectiveness and planning for its improvement.	Teaching staff/ Development and accreditation committee	Indirect: Review by Department Committee

**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

<b>Council / Committee</b>	Department Council
<b>Reference No.</b>	Meeting No.10
<b>Date</b>	10-9-1440

قسم المختبرات  
TU  
جامعة الطائف  
TAIF UNIVERSITY  
Laboratory Department