

## Module (Course Syllabus) Catalogue 2023-2024

College/ Institute	Erbil Technical Health College	
Department	Medical Laboratory Technology	
Module Name	Immunology II	
Module Code	IMU504	
Degree	Technical Diplon <input type="checkbox"/> Bachelo <input checked="" type="checkbox"/> High Diplom <input type="checkbox"/> Master <input type="checkbox"/> PhD <input type="checkbox"/>	
Semester	6	
Qualification		
Scientific Title	Assistant lecturer	
ECTS (Credits)	6	
Module type	Prerequisite <input type="checkbox"/> Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>	
Weekly hours	10	
Weekly hours (Theory)	(2)hrs/ Class	(24)Total hrs Workload
Weekly hours (Practical)	(2)hr/ Class	(24)Total hrs Workload
Number of Weeks	14	
Lecturer (Theory)	Liza Jamal Yousif	
E-Mail & Mobile NO.	<a href="mailto:m.liza.jamal@epu.edu.iq">m.liza.jamal@epu.edu.iq</a>	
Lecturer (Practical)	Liza Jamal and Zaid Nabeel Elia	
E-Mail & Mobile NO.	<a href="mailto:m.liza.jamal@epu.edu.iq">m.liza.jamal@epu.edu.iq</a> <a href="mailto:m.zaid@epu.edu.iq">m.zaid@epu.edu.iq</a>	
Websites		

# Course Book

<b>Course Description</b>	<p>The course discusses basic immunology including cellular and molecular processes that represents the human immune system ,receptors and cellular markers involved in immune cells interactions , antigen presentation (endogenous and exogenous), how immune system recognize and distinguish the self and non-self-antigens, mechanisms of immune tolerance, theories explaining development of autoimmune diseases, aetiologies and types of autoimmune diseases, Hypersensitivity, types of hypersensitivity reactions allergy and cancer immunity.</p>			
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>• demonstrate the basic knowledge of immunological processes at a cellular and molecular level</li> <li>• define central immunological principles and concepts</li> <li>• Students should describe the applied aspects of immunology such as defense mechanism, allergy and auto immunity.</li> <li>• Students should understand the cellular and molecular interaction of the immune responses.</li> <li>• Antigen presentation and structure and function of antigen- presenting molecules</li> <li>• understand the principles governing vaccination and the mechanisms of protection against infectious diseases</li> <li>• understand and explain the basis of immunological tolerance, autoimmunity and transplantation</li> <li>• understand and explain the basis of allergy and allergic diseases</li> <li>• understand and explain the immune system in cancer; tumor immunology and principles of immunotherapy</li> </ul>			
<b>Student's obligation</b>	<p>Students are expected to behave professionally. Regular attendance is critical for success, for each lecture hour the students need two hours studying and preparation, also to spend time outside the laboratory writing lab reports, studying for quizzes, home works, assignments and exams. The student is accountable for any missed works or exams due to absence or for missing the deadline for submitting them.</p>			
<b>Required Learning Materials</b>	<p>Powerpoint Presentations and White board for more explanation, 2. Texts and teaching materials</p>			
<b>Evaluation</b>	<b>Task</b>	<b>Weight (Marks)</b>	<b>Due Week</b>	<b>Relevant Learning Outcome</b>
	Paper Review			

	Assignments	Homework	10		
		Class Activity	2		
		Report	14		
		Seminar	14		
		Essay			
		Project			
	Lab. reports and activities	14			
	Quiz	4			
	Lab.				
	Midterm Exam	16			
	Final Exam	40			
	Total	100			
<b>Specific learning outcome:</b>	<p>On completion of this course the student should be able to:</p> <ol style="list-style-type: none"> <li>1) Know and understand the regulatory functions of cells, cell membrane proteins and cytokines in immunity.</li> <li>2) Describe the function of the MHC and its relevance for immune responses. Be able to compare and contrast the innate versus adaptive immune systems.</li> <li>3) Understand activation of lymphocytes and generation of effector mechanisms: B &amp; T lymphocytes Be able to distinguish and characterize CD4+, CD8+</li> <li>4) T helper cell lineages Th1, Th2, and regulatory T cell (Treg).</li> <li>5) Be able to distinguish and characterize Types of autoimmune diseases,</li> <li>6) Understand the significance of the Major Histocompatibility Complex in terms of immune response and transplantation.</li> <li>7) Be able to describe lymphocyte development and the expression of their receptors</li> <li>8) Be able to articulate immunodeficiency syndrome, types, and diseases related to it</li> <li>9) To recognize hypersensitivity and distinguish the types, the possible etiologies and treatment</li> <li>10) To describe cancer immunity, tumor markers and immunotherapy.</li> </ol>				
<b>Course References:</b>	<p>Abul Abbas Andrew H. Lichtman, Shiv Pillai, 2019. Basic Immunology, 6th Edition, Elsevier</p> <p>2- William E. Paul, 2012. Fundamental Immunology 7th Edition, Publisher: Lippincott Williams and Wilkins, Philadelphia,</p>				

	United States 3- Karen Carroll, Janet Butel, Stephen Morse, 2015. Jawetz Melnick & Adelbergs Medical Microbiology 27 E (Lange)McGraw-Hill Education / Medical. 4- Warren Levinson, 2014. Review of Medical Microbiology and Immunology 13 <sup>th</sup> Edition. Publisher: McGraw-Hill Medical.	
<b>Course topics (Theory)</b>	<b>Week</b>	<b>Learning Outcome</b>
The major histocompatibility complex – function and structure.	1	
Ontogeny of lymphocytes and generation of tolerance and the actual repertoire.	2	
The clonal adaptive receptor for antigen: B & T cells.	3	
Activation of lymphocytes and generation of effector mechanisms: B & T lymphocytes.	4	
Cytokines, their structure, Production, secretion and Function	5	
Autoimmunity and Autoimmune diseases	6	
Immunodeficiency Syndrome, Types, and diseases related to Immunodeficiency	7	
Hypersensitivity, etiology, types: Type I Hypersensitivity	8	
Type II, Type III and IV Hypersensitivity Reactions	9, 10	
Transplantation Immunity, graft antigens	11	
Host versus Graft reactions, and Graft versus Host reactions	13	
Cancer immunity, Tumor markers, and immunotherapy	14	
<b>Practical Topics</b>	<b>Week</b>	<b>Learning Outcome</b>
Definition and Application of Immunology	1	

Plasma and serum	2	
Preparation of antigen)	3	
Preparation of antibody	4	
Complement fixation test	5	
C- Reactive protein test	6	
Widal test for salmonella	7	
Rose bengal test for brucella	8	
Rheumatoid Factor test	10	
A.S.O. test	11	
Pregnancy test	14	

### Questions Example Design

Exams will contain essay questions, short answers, problem solving, matching questions, filling blanks or tables, take home questions, and multiple choice. In addition to the questions in which the student is asked to describe or illustrate specific immune responses or reactions

**Extra notes: The course is about 16 weeks, including midterm and final exams**

### External Evaluator

