

## (Module Name) Course Catalogue

### 2022-2023

<b>College</b>	Erbil Medical Technical Institute	
<b>Department</b>	Medical Laboratory Technology	
<b>Module Name</b>	Immunology	
<b>Module Code</b>		
<b>Semester</b>	3	
<b>Credit</b>		
<b>Module type</b>	Prerequisite, Core, Aassist.	
<b>Weekly hours</b>	4	
<b>Weekly hours (Theory)</b>	( 2 )hr Class	( 3 )hr Workload
<b>Weekly hours (Practical)</b>	( 2 )hr Class	( 1 )hr Workload
<b>Lecturer (Theory)</b>	Sevan Hassan Bakir	
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<b>Lecturer (Practical)</b>	Sevan Hassan Bakir	
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## Course Book

### - Course overview:

This course, which consists of (2) hours lecture theory & (2) hours laboratory lecture per week for (12) weeks, is an introduction to immune system its function and types of immunity responses and explain the including of the immune system of cells and organs and how the cellular basis responses if foreign substance enter the body and how the antibody produced because of antigen enter the body and some autoimmune disease and in the practical part doing many of important tests that are done in hospitals due to the presence of these types of diseases.

### - Course objective:

At the conclusion of this course the student should be able to demonstrate through written examinations, quizzes, and oral discussion the following achievements:

- 1- Demonstrate and understanding of basic immunology system concepts that relate to Human body.
- 2- Explain the types of immune responses.
- 3- Explain the structure and types of antibody and knowing the origin of antigens and the antigen-antibody reactions.
- 4- Explain immune mechanism in protecting against the diseases.
- 5- Explain some clinical immunology such as autoimmune diseases and hypersensitivity (Allergy).
- 6- Being able to do some important serological tests in laboratory.

### 12. Student's obligation

The students should be attendance and complete of all tests, exams and assignments

### - Forms of teaching

lecture halls with data show equipment for lecture presentations, white board, overhead projector, posters

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**- Assessment scheme**

- 6% Mid. Theory exam
- 10% Mid. practical exam
- 4% Quiz
- 40% Activity
- 25% final practical
- 15% final theory

**- Specific learning outcome:**

On successful completion of this program, graduates will be able to

- 1- Identify evaluate and types of immune responses in human immune system.
- 2- The differences between innate and adaptive immunity.
- 3- The antigen and antibody reaction types.
- 4- How to knowing different mechanisms of immune systems about their ability to protect against different forging substance and different type and mechanisms of the immune systems.
- 5- The cellular basis responses in immunity.
- 6- The mechanisms of humoral immunity and cell-mediated immunity.
- 7- Identify some diseases types of autoimmune disease.

**- Course Reading List and References:**

- 1- **Medical Microbiology, Jawetz, Melink and Adelberg 's, (2019).**
- 2- **KAPLAN, Immunology and Microbiology, (2013).**
- 3- **Review of Medical Microbiology and Immunology, (2014).**
- 4- **Clinical laboratory immunology, 2006.**

<b>- Course topics (Theory)</b>	<b>Week</b>	<b>Learning Outcome</b>
<b>Immunity : Innate immunity Adaptive immunity</b>		<b>Definition of immunity to knowing the two types of immunity innate and adaptive.</b>
<b>Cellular basis of the immune response and immune organs</b>		<b>Be able to knowing all organs and cells of immune system and their function and cells origin.</b>
<b>Cytokines</b>		<b>Be able to knowing the types and function of the most important cytokines.</b>
<b>Antibody and Antigen</b>		<b>Be able to knowing the structure and types of</b>

		<b>antibodies and different types of antigens and who cause disease</b>
<b>Humoral immunity</b>		<b>Be able to knowing the types of immune response by producing antibody.</b>
<b>Cell –mediated immunity</b>		<b>Be able to knowing the types of immune response by differentiated the different types of cells.</b>
<b>Complement system</b>		<b>Be able to knowing the function and the types of pathways of complement system.</b>
<b>Antigen-antibody reactions in the laboratory</b>		<b>Be able to knowing different types of antigen-antibody reactions.</b>
<b>Tolerance and Autoimmune Disease</b>		<b>Be able to knowing what is mean of the tolerance an autoimmune disease and some types of autoimmune diseases</b>
<b>Hypersensitivity (Allergy)</b>		<b>Be able to knowing the mean of hypersensitivity (allergy) and different types of hypersensitivity</b>
<b>Immunodeficiency</b>		<b>Be able to knowing what is the immunodeficiency and the conditions lead to immunodeficiency.</b>
<b>Tumor Immunity</b>		<b>Be able to knowing what is the tumor immunity.</b>
<b>- Practical Topics (If there is any)</b>	<b>Week</b>	<b>Learning Outcome</b>
<b>Introduction to immunity laboratory and antigen-antibody preparation.</b>		<b>Knowing the basis rules in immune laboratory and preparation of antigen and antibody.</b>
<b>C-reactive protein test (CRP test) and high sensitive C-reactive protein test</b>		<b>Knowing how to done CRP test and hs-CRP test.</b>

(hs-CRP test).		
<b>Rheumatoid factor test (RF test) and anti-streptolysin O test (ASO test)</b>		<b>Knowing how to do RF test and ASO test.</b>
<b>Helicobacter pylori test (H. pylori test).</b>		<b>Knowing how to do the H. pylori test.</b>
<b>Salmonella test (Widal test).</b>		<b>Knowing how to do Widal test.</b>
<b>Brucella test.</b>		<b>Knowing how to do Brucella test.</b>
<b>HIV test and herpes simplex virus test</b>		<b>Knowing how to do HIV test and herpes simplex virus test.</b>
<b>Hepatitis test.</b>		<b>Knowing how to do hepatitis test and its virus's causative agents.</b>
<b>Toxoplasmosis test.</b>		<b>Knowing how to do Toxoplasmosis test.</b>
<b>rubella test</b>		<b>Knowing how to do rubella test.</b>
<b>cytomegalovirus</b>		<b>Knowing how to do cytomegalovirus test.</b>
<b>Rotavirus test</b>		<b>Knowing how to do Rotavirus test</b>
<p><b>- Examinations (question design):</b></p> <p><b>Q1: Answer the following questions with enumeration only? (12Marks)</b></p> <p><b>A- Physical barrier in innate immunity?</b></p> <p><b>B- Enumerate the 4 types of hypersensitivity?</b></p> <p><b>C- classify antigen according to their basic origin</b></p>		
<p><b>Q2: Define the following: (6 Marks)</b></p> <p><b>1- Antigen</b></p> <p><b>2- Epitope</b></p> <p><b>3- Hapten</b></p>		

- **External Evaluator**