

Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	Koya Technical Institute		
Department	Medical Laboratory Technology (MLT)		
Module Name	Immunology		
Module Code	IMM 302		
Degree	Technical Diploma <input type="checkbox"/> *	Bachelor <input type="checkbox"/>	
	High Diploma <input type="checkbox"/>	Master <input type="checkbox"/>	PhD <input type="checkbox"/>
Semester	3 rd Semester		
Qualification			
Scientific Title	Lecturer		
ECTS (Credits)	7 ECTS		
Module type	Prerequisite <input type="checkbox"/>	Core <input type="checkbox"/>	* Assist. <input type="checkbox"/>
Weekly hours	4 Hrs		
Weekly hours (Theory)	(2)hr Class	()Total hrs Workload	
Weekly hours (Practical)	(2)hr Class	()Total hrs Workload	
Number of Weeks	12		
Lecturer (Theory)	Dr. Rezhna Adil Rasheed / (00964) 7701576772		
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Lecturer (Practical)	Nergz Omar Muhammad		
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Websites			

Course Book

Course Description	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 objectives	<p>As a conclusion of this course, through written examinations, quizzes, and oral discussion, the student should be able to demonstrate the following achievements:</p> <ol style="list-style-type: none"> 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). Being able to do some important serological tests in laboratory. 				
Student's obligation	The students should be attendance and complete of all tests, exams and assignments				
Required Learning Materials	lecture halls with data show equipment for lecture presentations, white board, overhead projector, posters				
Evaluation	Task	Weight (Marks)	Due Week	Relevant Learning Outcome	
	Paper Review				
	Assignments	Homework	5		
		Class Activity	2		
		Report	5		
		Seminar	5		
		Essay			
		Project			
	Quiz		8		
	Lab. report & activities		10		
	Midterm Exam		25		
	Final Exam		40		
Total		100			
Specific learning outcome:	<p>On successful completion of this program, graduates will be able to</p> <ol style="list-style-type: none"> 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- Detecting different mechanisms of immune systems about their ability to protect against different foreign substance and different mechanisms of the immune systems. 5- Basic cellular response in immunity. 6- The mechanisms of humoral immunity and cell-mediated immunity. 7- Identify some diseases types of autoimmune disease. 				

Course References:	1- 2-KAPLAN, Immunology and Microbiology, (2013). 3- Review of Medical Microbiology and Immunology, (2014). 4- Clinical laboratory immunology, 2006.	
Course topics (Theory)	Week	Learning Outcome
Immunity : Innate immunity Adaptive immunity	First	Definition of immunity to have knowledge about the two types of immunity, the innate and adaptive.
Components of immune system, 1st, 2nd, and 3rd line of immunity, immune response and immune organs	Second	Be able to know all organs and cells of immune system and their function and cells origin.
Immune response, phagocytosis, fever, and inflammation	Third	to have knowledge about the principle and mechanisms of immune response
Humoral immunity & Cell –mediated immunity	Forth	Be able to knowing differentiated different types of cells & producing antibody.
Antibody and Antigen	Fifth	Be able to knowing the structure and types of antibodies and different types of antigens and who cause disease
Antigen-antibody reactions in the laboratory	Sixth	Be able to know different types of antigen- antibody reactions.
Cytokines	Seventh	Be able to know the types and function of the most important cytokines.
Complement system	Eighth	Be able to know the function and types of pathways of complement system.
Major histocompatibility complex system (MHC)	Ninth	Be able to knowing what is mean of the tolerance an autoimmune disease and some types of autoimmune diseases
Hypersensitivity (Allergy)	Tenth	Be able to knowing the mean of hypersensitivity (allergy) and different types of hypersensitivity
Immunodeficiency and Tumor immunity	Eleventh	Be able to know what is the immunodeficiency and the conditions lead to immunodeficiency & what the tumor immunity is.
PCR & Corona virus	Twelfth	To have background about the cause of disease
Practical Topics	Week	Learning Outcome
Introduction to immunity laboratory and antigen-antibody preparation.	First	Knowing the basis rules in immune laboratory and preparation of antigen and antibody.
C-reactive protein test (CRP test) and high sensitive C-reactive protein test (hs-CRP test).	Second	Knowing how to done CRP test and hs-CRP test.
High-sensitive cardiac troponin test - (hs-cTnT).	Third	Knowing how to do (hs-cTnT) test and for what case use.
Helicobacter pylori test (H. pylori test).	Forth	Knowing how to do the H. pylori test.
Salmonella test (Widal test).	Fifth	Knowing how to do Widal test.
Brucella test.	Sixth	Knowing how to do Brucella test.

Rheumatoid factor test (RF test) and anti-streptolysin O test (ASO test).	Seventh	Knowing how to do RF test and ASO test.
Hepatitis test.	Eighth	Knowing how to do hepatitis test and its virus's causative agents.
TORCH test (toxoplasmosis, rubella, cytomegalovirus and herpes simplex virus)	Ninth	Knowing how to do TORCH test.
Rotavirus test.	Tenth	Knowing how to do Rotavirus test.
Antiphospholipid test and Systemic Lupus Erythematosus test (SLE test).	Eleventh	Knowing how to do Antiphospholipid test and SLE test.
Sexually transmitted pathogen: HIV test and Syphilis test.	Twelfth	Knowing how to do HIV test and Syphilis test.