

Course Overview

Diagnostic Immunology

1.	<u>The immune system in review</u> T-cell and B cell maturation, activation, and differentiation
Course code :	LMT405
Course title:	Diagnostic Immunology
Level/semester:	Forth Semester
Credit hours:4	Theoretical: 3
	Practical: 2
2.	<u>Immunogenetics</u> <ul style="list-style-type: none"> - Major histocompatibility complexes - Generation of antibody diversity - Generation of T-cell receptor diversity
3.	<u>Cytokine biology</u> <ul style="list-style-type: none"> - Types & properties - Signal transduction pathways - Biological functions
4.	<u>Antigen processing and presentation</u>
5.	<u>Diagnostic immunology - laboratory methods</u> <ul style="list-style-type: none"> a- Detection of antigens & antibodies <ul style="list-style-type: none"> - Immuno-precipitation techniques - Immun of luorescent technique (serum, immunohistochemical & cytochemical applications) - Enzyme immunoassays (serum, immunohistochemical & cytochemical applications) - Electrophoresis: types, applications. - Radioimmunoassay: types & applications. b- Detection of cellular immunity <ul style="list-style-type: none"> - Total / subsets of T cell estimation

	<p>including functional assays.</p> <ul style="list-style-type: none"> - Neutrophil function (NBT) tests - Macrophage function test (phagocytic & killing index) - Skin tests <ul style="list-style-type: none"> DTH test ITH test c- Histocompatibility testing <ul style="list-style-type: none"> - Microcytotoxicity assays - Mixed lymphocyte culture technique & cell-mediated lympholysis d- Advanced immunological techniques <ul style="list-style-type: none"> - Hybridoma technology - Polymerase chain reactions - Nephelometry & turbidometry - Luminometry
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PRACTICAL

A.	<p><u>Immunodiagnostic tests based on direct agglutination reaction:</u></p> <ul style="list-style-type: none"> - Widal test for typhoid / paratyphoid fever - Weil – Felix test for typhus fever - Slide agglutination test for brucellosis
B.	<p><u>Immunodiagnostic tests based on indirect (passive) agglutination reaction:</u></p> <ul style="list-style-type: none"> - C-reactive protein estimation by latex agglutination test - Latex agglutination test for determination of anti-streptolysin O titre (ASO-T) - Rheumatoid factor by latex agglutination method - Pregnancy test by latex agglutination or agglutination inhibition technique

C.	<p><u>Immunodiagnostic tests based on haem-agglutination reaction:</u></p> <ul style="list-style-type: none"> - Monospot (Paul–Bunel) test for diagnosis of infectious mononucleosis - Indirect haemagglutination (IHA) test for Echinococcosis / Toxoplasmosis - Haemagglutination inhibition test for rubella antibodies - Cold agglutination test for the diagnosis of primary atypical pneumonia
D.	<p><u>Syphilis serology</u></p> <p>VDRL / RPR slide test</p> <p>FTA test</p> <p>TPHA test</p>
E.	<p><u>Cellular immunology test</u></p> <ul style="list-style-type: none"> - T-lymphocyte estimation in the peripheral blood. - B-lymphocyte estimation in the peripheral blood