

Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Department of Medical Laboratory Sciences
First Semester 2006/ 2007

Course Information	
Course Title	Clinical Immunology and Serology
Course Number	LM333
Prerequisites	M232
Course Website	/
Instructor	Dr. Raymond Batchoun
Office Location	
Office Phone	23761
Office Hours	Sun, Thu. 1-2
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Teaching Assistant	Ra'ad Obeidat
Course Description	
This course is applied clinical immunology and serology for clinical laboratory practice	

Text Book	
Title	Clinical Immunology
Author(s)	Noel Rose and Herman Friedman
Publisher	American society of microbiology
Year	2004
Edition	Most recent
Book Website	/
References	Medical immunology, large medical books. +internet clinical immunology and serology teaching resources.

Assessment Policy		
Assessment Type	Expected Due Date	Weight
First Exam	7 th week of semester	20%
Second Exam	12 th week of semester	20%
Final Exam	Assigned by university registrar	40%
Assignments	Lab reports, Quizzes, Exams.	20%

Course Objectives		Weights
1. give the basic principle of antigen antibody reaction, precipitation, agglutination, CF,RIA, ELISA, and fluorescent antibody technology.		30%
2. application of immunological technique in the diagnosis of bacterial infection, viral infection, parasitic infection, as well as immunological diseases		50%
3. laboratory assessment of cell medical immunity		20%

Teaching & Learning Methods

- Lecture And Discussion
- Laboratory Experimentation And Demonstration
- Exams Theoretical And Practical

Learning Outcomes: Upon successful completion of this course, students will be able to

Related Objective(s)	Describe the principles of Ag-Ab reactions and their usage in clinical laboratories.	Reference(s)
	Perform seroidentification of bacteria, Widal test, Brucella test, blood grouping, cold agglutinines, and Paul Bunnell test.	
	Perform CRP, RA, Pregnancy, Meningo test, IHA for hydatid, and HbsAg.	
	Utilize precipitation tests to do Lancefield grouping of Streptococci, double diffusion, Immunoelectrophoresis and immunofixation, RID to quantitate Ig, C3, C4, Haptoglobin etc.	
	Use CFT for antibodies detection to viruses, bacteria, and parasites, as well as tissue typing.	
	Utilization of RIA and ELISA technology to detect hepatitis markers, total IgE, allergen specific IgE, BHCG, TORCH, etc.	
	Use DIF for detection of Chlamydia, Treponema, Viruses, and immune complexes in tissues. Use IFTA to detect ANA, AMA, ASMA, anti-dsDNA, APCA, ANCA, and antibodies to parasites.	
	Perform E-rosette count, B-cell count, LTT, and evaluate skin test results.	

Useful Resources

- Jordan University of Science & Technology library.
- Internet resources (clinical immunology teaching resources)

Course Content

week	Topics	Chapter in Text (handouts)
1	1-Agglutination reactions: A-Direct agglutination reactions: -Serological identification of bacteria. -Widal test.	

2	<ul style="list-style-type: none"> -Brucella agglutination test. -Blood grouping- ABO-Rh test. -Cold agglutinines and Heterophile antibodies. B-Passive agglutination or indirect agglutination. -C-reactive protein.tests. -RA-latex test 	
3	<ul style="list-style-type: none"> test. -Menengo-latex test. C-Passive haemagglutination tests: <ul style="list-style-type: none"> -Hepatitis B surface Antigen(HbsAg). -Echinococcus granulosus antibodies(Hydatid cyst). -Monospot test and Paul-Bunnell test. 	
4	<ul style="list-style-type: none"> 2-Precipitation reactions: <ul style="list-style-type: none"> A-Tube precipitation reactions: <ul style="list-style-type: none"> -Ascoli test –Anthrax. -Lancefield grouping of Streptococcus. B- Gel precipitation reactions: <ul style="list-style-type: none"> -Double diffusion – Antigen identification and relation. 	
5	<ul style="list-style-type: none"> -Radial immunodiffusion: Immunoglobulins, Complement, 	
6	<ul style="list-style-type: none"> Ceruloplasmin,Haptoglobulins, Transferin. Immunoelectrophoresis and Immunofixation. 	
7	<ul style="list-style-type: none"> 3- Complement fixation tests: <ul style="list-style-type: none"> -Antibodies to viruses,bacterial antigens, parasites. 	
8	<ul style="list-style-type: none"> -Microcytotoxicity tests. 4-Neutralization reactions: <ul style="list-style-type: none"> -Anti Streptolysin O test. -Virus infectivity tests. 	
9+10	<ul style="list-style-type: none"> 5-Radioimmunoassay : <ul style="list-style-type: none"> -Hepatitis markers -Total serum IgE-Prest. -Allergen specific IgE –RAST. 	
11+12	<ul style="list-style-type: none"> -BHCG. 6-ELISA: <ul style="list-style-type: none"> -TORCH test. -HIV test. -BHCG 	
13+14	<ul style="list-style-type: none"> -Total and specific IgE. 7-Flourescent Antibody technology: <ul style="list-style-type: none"> -Detection of Antigens: Chlamydia, Bhstrep.A, Treponema. -Detection of immunecomplexes in tissues. -Detection of Antibodies: ANA,AMA,ASMA,AntiDNA, APCA,ANCA -Detection of Ab to Toxoplasma, Trichinella, Amoeba. 	
15	<ul style="list-style-type: none"> 8-Assessment of Cellular Immunity: <ul style="list-style-type: none"> -T-cellcount – E-Rossette. -B-Cell count. -T-cell function: Lymphocyte transformation test. -Skin tests. 	
16	<ul style="list-style-type: none"> 9)New methods used in clinical immunology and serology. 	

Additional Notes

Assignments	
Exams	MCQs, Matching
Cheating	
Attendance	Absolute for all lectures and labs
Workload	
Graded Exams	First, Second exam 20% each + final 40%
Participation	
Laboratory	20%
Projects	/