



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

Immunology and Serology

0308361

By

Dr. Suzan Matar

1	Course title	Immunology and Serology
2	Course number	0308361
3	Credit hours (theory, practical)	Theory 2 hours , Practical 1 hour
	Contact hours (theory, practical)	Theory 2 hours , practical 3 hours
4	Prerequisites/corequisites	0308242 and 0308251
5	Program title	Bachelor Biological sciences
6	Program code	0304
7	Awarding institution	The University of Jordan
8	Faculty	Science
9	Department	Clinical laboratory sciencies
10	Level of course	3
11	Year of study and semester (s)	3 years equivalent to 6 semesters
12	Final Qualification	Clinical Laboratory Scientist
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	3 rd /July/2018

16. Course Coordinator:

Office numbers: B 104

Office hours: 1-2 Sundays-Wednesdays

Phone numbers: 5355000

Email addresses: s.mattar@ju.edu.jo

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

None

18. Course Description:

This course covers the science of immunology and serology through the study of theories and processes related to natural body defenses. Included are basic antigen-antibody reactions, complement action, humoral and cellular immune response and the basic serological procedures used to aid in the detection of certain diseases.

Throughout this course, special emphasis is placed on correlating of laboratory results with the patient's probable condition. The goals we aim to achieve are: developing a working knowledge of the principles and procedures of serology, producing accurate, skilled clinical laboratory workers with strong ethical and professional values, promoting respect and understanding of allied health professionals through renewed understanding of the clinical laboratory technician's role as a member of the allied health care team.

19. Course aims and outcomes:**A- Aims:**

The aim of this course to provide understanding of the basic aspects of immunology. The first few weeks the focus will be on innate immune response and inflammation. Next, the course will be on acquired immunology covering the cellular and molecular immunology. Finally, the main area of study will be about immunity and disease and the diagnostic methods.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

1. Demonstrate an understanding of the concepts of nonspecific and specific immunity.
2. Describe the immunologic responses involved in preventing and combating infections.
3. State the principle of the routine serologic procedures performed in the clinical laboratory.
4. Read and correctly follow the instructions in reagent package inserts, as needed, to obtain valid results
5. Evaluate laboratory test outcomes and determine the validity of the test results obtained.
6. Recognize the limitations of each laboratory procedure performed and describe how these may affect the results of the testing performed.
7. Perform and evaluate quality control results as required by the procedure and use the results to evaluate the patient results obtained.
8. Correlate test results with patient condition(s).
9. Maintain a safe laboratory environment by putting away all reagents/supplies, washing laboratory glassware/slides, disinfecting work area upon completion of duties, and putting full biohazard bags in designated area.
10. Demonstrate improvement in the affective traits of organizational skills, work habits, attitude, interpersonal skills, and problem-solving ability.

20. Topic Outline and Schedule:

1.					
Topic	Weeks	Instructor	Achieved ILOs	Evaluation Methods	Reference
An Overview of Immunology	1	Dr. Suzan Matar	1,2	Examination	Ch 1
Antigens and Antibodies	2	Dr. Suzan Matar	1,2,3	Examination	Ch2
Cells and Cellular Activities of the Immune System: Granulocytes and Mononuclear Cells	3	Dr. Suzan Matar	1,2,3	Examination	Ch3
Cells and Cellular Activities of the Immune System: Lymphocytes and Plasma Cells	4,5	Dr. Suzan Matar	1,2,3	Examination	Ch4

Soluble Mediators of the Immune System	6,7	Dr. Suzan Matar	1,2,3	Examination	Ch 5
Midterm 30% WEEK 8					
Basic Serologic Laboratory Techniques	8	Dr. Suzan Matar	3-10	Examination	Ch 8
- The Immune Response in Infectious Diseases - Streptococcal Infections - Vector-Borne Diseases - Viral Hepatitis	9	Dr. Suzan Matar	1,2,3	Examination	Chapter 15: Chapter 17: Chapter 19: Chapter 23:
A Primer on Vaccines	9	Dr. Suzan Matar	1,2,3	Examination	Chapter 16:
Acquired Immunodeficiency Syndrome	10	Dr. Suzan Matar	1,2,3,8,10	Examination	Chapter 25:
Acquired Immunodeficiency Syndrome	11	Dr. Suzan Matar	1,2,3,8,10	Examination	Chapter 25:
:Immunoproliferative Disorders	11	Dr. Suzan Matar	1,2,3,8,10	Examination	Chapter 27
-Autoimmune Disorders - Systemic Lupus Erythematosus -Rheumatoid Arthritis	12	Dr. Suzan Matar	1,2,3,8,10	Examination	Chapter 28: Chapter 29: Chapter 30:
Solid Organ Transplantation Chapter 32: Bone Marrow Transplantation	13	Dr. Suzan Matar	1,2,3,8,10	Examination	. Chapter 31:
Tumor Immunology	14	Dr. Suzan Matar	1,2,3,8,10	Examination	Chapter 33

21. Teaching Methods and Assignments:

Lectures and practical classes. Students are expected to use the material presented on e-learning system and to read the relevant sections of prescribed and recommended textbooks as well as references provided by lecturers.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

This course will be assessed in the following ways:

- **Laboratory reports contribute to the assessment in this course.**
- Midterm and end of semester examinations test a student's comprehension of the concepts and material presented in classes.

23. Course Policies:

A- Attendance policies:

Students are expected to attend class and to complete all the assignments. Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

B- Absences from exams and handing in assignments on time:

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for absence within 3 days of the last date of the absence. The excuse should be acceptable and approved by the Dean. If the absence is excused, the instructor must either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade by a date agreed upon by the student and instructor.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

A range of possible sanctions exist for cases of academic dishonesty. In addition to an academic penalty (determined by the faculty member), disciplinary sanctions may also be applied.

E- Grading policy:

Midterm Exam:	30%
Final Exam:	40%
Lab Final	20%
Lab Reports + Attitude	10%

F- Available university services that support achievement in the course:

Library and Internet resources

24. Required equipment:

Data show for theory and practical lectures.

Devices, kits, reagents and animals (rats and mice) for the practical Work.

25. References:

A- Required book (s), assigned reading and audio-visuels:

1. Immunology & Serology in Laboratory Medicine, 5th Edition by Mary Louise Turgeon

B- Recommended books, materials, and media:

1. Cellular and Molecular Immunology, 9th Edition by Abul Abbas
2. Essentials Of Immunology And Serology, 2002 by Jacqueline Stanley
3. Clinical Immunology and Serology: A Laboratory Perspective, 3rd Edition by Stevens

Journals:

Immunity
Annual Reviews of Immunology
Journal of Immunobiology

26. Additional information:

The practical Classes :

Practical work (10 Experiment)

Lab # 1.	The Immune System Organs and Cells (Histology and Anatomy).	
Lab # 2.	Agglutination Reactions I	
Lab # 3.	Agglutination Reactions II	
Lab # 4.	Protein Electrophoresis (Serum Protein Electrophoresis).	-Report 1
Lab # 5.	Enzyme Linked Immunosorbent Assay (ELISA).	
Lab # 6.	Double Immunodiffusion (Ouchterlony).	-Report 2
Lab # 7.	Isolation of Human Peripheral Blood Mononuclear Cells.	
Lab # 8.	Mixed Lymphocyte Reaction.	-Report 3
Lab # 9.	Flow Cytometry	
Lab # 10.	Monoclonal Antibody Technology	

Reference:

Current Protocols in Immunology

Online ISBN: 9780471142737

DOI: 10.1002/0471142735

Some of the experiments state the principle of the routine serologic procedures performed in the clinical laboratory. Student will be able to read and correctly follow instructions provided in reagent package inserts, as needed, to obtain valid results.

Attendance to practical classes is 100% compulsory

Name of Course Coordinator: **Dr. Suzan Matar** Signature: *Suzan Matar* Date: 3 /July/2018

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----

Copy to:

Head of Department
 Assistant Dean for Quality Assurance
 Course File