

American University of Beirut
Faculty of Health Sciences
Medical Laboratory Technology Program

MLSP 259

(Serology)

Spring Semester 2023-24

Name	Rolla Al-Khatib	Course Credits:	1 credit
Office Hours:	By appointment	Meeting Location	VANDYK AUDT
Office Location:	Van Dyck, Rm 321	Meeting Time:	M:12:30 p.m. – 1:20 p.m.
Extension	4696		
E-mail	ra03@aub.edu.lb		

Course Description:

This is an introductory course in Serology that is designed to introduce students to principles of antigen-antibody reactions. Special emphasis will be placed on the study of specific serological procedures used for the diagnosis of diseases.

Specific Learning Outcomes:

Upon completion of this course, students should be able to:

1. Differentiate between the different types of reactions including, precipitation, agglutination, neutralization, flocculation and complement fixation.
2. Compare and contrast between the different labeled immunossays including RIA, ELISA and Immunofluorescent techniques.
3. Explain the various serological tools used in the serodiagnosis of infectious and noninfectious diseases.

COURSE SYLLABUS

	Topic	Activities	Reading
--	-------	------------	---------

WEEK 1

M JAN 22	* Introduction * Characteristics of antigen antibody reactions		Moodle (lecture)
----------	---	--	------------------

WEEK 2

M JAN 29	* Kinetics of the immune response * Factors affecting AgAb reactions * Affinity and avidity * Cross reactivity * Specificity and sensitivity		Moodle (Lecture)
----------	--	--	------------------

WEEK 3

M FEB 5 (2 sessions, instead of 1 to make up for the session scheduled on Saturday Feb 3)	<ul style="list-style-type: none"> * Specificity and sensitivity * Types of immunological reactions <ul style="list-style-type: none"> • Primary • Secondary • Tertiary * Two phase examination * Serial dilutions * Titers 	Applications	Moodle (Lecture)
--	--	--------------	------------------

WEEK 4

M FEB 12	<ul style="list-style-type: none"> * Basic Immunologic procedures * Precipitation reactions <ul style="list-style-type: none"> • Precipitation in test tubes • Precipitation in capillary tubes • Precipitation in Gel <ul style="list-style-type: none"> - Oudin single diffusion - Radial immunodiffusion - Ouchterlony double diffusion 		Moodle (Lecture)
----------	---	--	------------------

WEEK 5

M FEB 19	<ul style="list-style-type: none"> * Electrophoretic techniques: <ul style="list-style-type: none"> • Rocket immunoelectrophoresis • Countercurrent immunoelectrophoresis • Immunoelectrophoresis 		Moodle (Lecture)
----------	--	--	------------------

WEEK 6

M FEB 26	<ul style="list-style-type: none"> * Agglutination reactions: <ul style="list-style-type: none"> • Direct agglutination • Direct hemagglutination 		Moodle (lecture)
----------	--	--	------------------

WEEK 7

M MAR 4	<ul style="list-style-type: none"> • Indirect agglutination • Indirect hemagglutination 		Moodle (lecture)
---------	---	--	------------------

WEEK 8

M MAR 11	* Midterm		
----------	------------------	--	--

WEEK 9

M MAR 18	* Neutralization reactions * Complement fixation		Moodle (lecture)
----------	---	--	------------------

WEEK 10

M MAR 25	* Vacation		Moodle (Lecture)
----------	------------	--	------------------

WEEK 11

M APR 1	* Vacation		Moodle (Lecture)
---------	------------	--	------------------

WEEK 12

M APR 8	* Flocculation reaction * RIA		Moodle (lecture)
---------	----------------------------------	--	------------------

WEEK 13

M APR 15	* ELISA		Moodle (Lecture)
----------	---------	--	------------------

WEEK 14

M APR 22	* Immunofluorescence		Moodle (Lecture)
----------	----------------------	--	------------------

EVALUATION

Mid Term: 50 % (meets objective 1 & 3)
Final: 50 % (meets objective 2 & 3)

COURSE POLICY

1. **Attendance:** Attendance will be taken during each session. You are expected to attend all classes and participate in class activities. If you miss a class, it is your responsibility to make up for the material missed, and inquire about any announcements made. If you miss more than one fifth of class sessions, you are subject to withdrawing from the course with a-w-grade before the last day for course withdrawal. *Please refer to the AUB catalogue.*
2. **Exams:** Examinations must be taken as scheduled. Make up exams will not be given unless a valid excuse is given. Only authorized medical reports will be accepted. (AUBMC/ Infirmary).
3. **Withdrawal date:** Please observe withdrawal dates set by the Registrar's Office.
4. **E-mail communication:** I will be e-mailing you on regular basis throughout the

semester. You are required to check your e-mails regularly.

5. **Moodle:** The course material and assignments are posted on Moodle. Students are held accountable for checking the Moodle course on regular basis.
6. **Academic integrity:** Education is demanding and you need to properly manage your time. Do not hesitate to use the resources around you but do not cut corners. Cheating and plagiarism will not be tolerated. Review the Student Code of Conduct and familiarize yourself with definitions and penalties. Cheating might earn you a failing mark on the assignment, at the very least. You might fail the course in which you cheated, be warned, suspended or expelled from University and a permanent mention of the disciplinary action might be made in your student records. If you're in doubt about what constitutes plagiarism, ask your instructor because it is *your* responsibility to know. Remember that the American University of Beirut has a strict anti-cheating and anti-plagiarism policy. Do not become a lesson to others. For further information, kindly visit AUB's Policies and Procedures or <http://pnp.aub.edu.lb/general/conductcode>.
7. **Students with Disabilities:** If you have a disability, for which you may request accommodation in AUB classes, consult the website for more information and make arrangements with the Coordinator (http://www.aub.edu.lb/sao/Pages/Students_20with_20Special_20Needs.aspx). Also, please see the instructor of this course privately in regard to possible support services that can be provided to you.
8. **Non-Discrimination – Title IX – AUB:**
AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University's non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University's Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at www.aub.edu.lb/titleix. **To report an incident**, contact the University's Title IX Coordinator Ms. Mitra Tauk at 01-350000 ext. 2514, or titleix@aub.edu.lb. An anonymous report may be submitted online via Ethics Point at www.aub.ethicspoint.com.