

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

**MLSP 259**

(Serology)

Spring Semester 2019-20

<b>Name</b>	Rolla Al-Khatib	<b>Course Credits:</b>	1 credit
<b>Office Hours:</b>	M.W.F. 10:00 a.m. – 11:00 a.m.	<b>Meeting Location</b>	Van Dyck
	<b>or by appointment</b>		
<b>Office Location:</b>	Van Dyck, Rm 322	<b>Meeting Time:</b>	M :1:00 p.m. – 1:50 p.m. Rm 101
<b>Extension</b>	4696		
<b>E-mail</b>	<a href="mailto:ra03@aub.edu.lb">ra03@aub.edu.lb</a>		

**Course Description:**

This is an introductory course in Serology that is designed to introduce students to the basic serological principles, including antigen – antibody reactions. Special emphasis will be placed on the study of specific serological methods 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 diseases.

**COURSE SYLLABUS**

	Topic	Activities	Reading
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**WEEK 1**

M JAN 27	* Introduction * Characteristics of antigen antibody reactions		Moodle (lecture)
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**WEEK 2**

M FEB 3	* Kinetics of the immune response * Factors affecting AgAb reactions * Affinity and avidity * Cross reactivity		Moodle (Lecture)
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**WEEK 3**

M FEB 10	<ul style="list-style-type: none"> <li>* Specificity and sensitivity</li> <li>* Types of immunological reactions <ul style="list-style-type: none"> <li>• Primary</li> <li>• Secondary</li> <li>• Tertiary</li> </ul> </li> <li>* Two phase examination</li> <li>* Serial dilutions</li> <li>* Titers</li> </ul>		Moodle (Lecture)
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**WEEK 4**

M FEB 17	<ul style="list-style-type: none"> <li>* Basic Immunologic procedures</li> <li>* <b>Precipitation reactions</b> <ul style="list-style-type: none"> <li>• Precipitation in test tubes</li> <li>• Precipitation in capillary tubes</li> <li>• Precipitation in Gel <ul style="list-style-type: none"> <li>- Oudin single diffusion</li> <li>- Radial immunodiffusion</li> <li>- Ouchterlony double diffusion</li> </ul> </li> </ul> </li> </ul>		Moodle (Lecture)
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**WEEK 5**

M FEB 24	<ul style="list-style-type: none"> <li>* Electrophoretic techniques: <ul style="list-style-type: none"> <li>• Rocket immunoelectrophoresis</li> <li>• Countercurrent immunoelectrophoresis</li> <li>• Immunoelectrophoresis</li> </ul> </li> </ul>		Moodle (Lecture)
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**WEEK 6**

M MAR 2	<ul style="list-style-type: none"> <li>* <b>Agglutination reactions:</b> <ul style="list-style-type: none"> <li>• Direct agglutination</li> <li>• Direct hemagglutination</li> </ul> </li> </ul>		Moodle (lecture)
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**WEEK 7**

M MAR 9	<ul style="list-style-type: none"> <li>* <ul style="list-style-type: none"> <li>• Indirect agglutination</li> </ul> </li> <li>* <ul style="list-style-type: none"> <li>• Indirect hemagglutination</li> </ul> </li> </ul>		Moodle (lecture)
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**WEEK 8**

M MAR 16	* <b>Midterm</b>		
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**WEEK 9**

M MAR 23	<ul style="list-style-type: none"> <li>* <b>Neutralization reactions</b></li> <li>* <b>Floculation reaction</b></li> <li>* <b>Complement fixation</b></li> </ul>		Moodle (lecture)
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**WEEK 10**

M MAR 30	* RIA * ELISA		Moodle (Lecture)
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**WEEK 11**

M APR 6	* Immunofluorescence * Monoclonal antibodies		Moodle (Lecture)
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**WEEK 12**

M April 13	* Vacation		Moodle (Lecture)
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**WEEK 13**

M April 20	* Vacation		Moodle (Lecture)
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**WEEK 14**

M APR 27	* Revision		
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**EVALUATION**

Mid Term:	45 %	(meets objective 1)
Final:	50 %	(meets objective 2)
Evaluation	5 %	

**COURSE POLICY**

1. **Attendance:** 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. *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.
3. **Withdrawal date:** Please observe withdrawal dates set by the Registrar's Office.
4. **Academic integrity:** any act of cheating or plagiarism is a violation of academic integrity and will not be tolerated. Kindly refer to the student handbook or refer to AUB Polices and Procedures on academic integrity. <http://pmp.au.edu.lb/university/handbook/158010044.html>.
5. **Special needs:** if you have documented special needs and anticipate difficulties with the content or format of the course due to a physical or learning disability,

please contact me and/or your academic advisor, as well as the Counseling Center in the Office of Student Affairs (Ext. 3196), as soon as possible to discuss options for accommodations. Those seeking accommodations must submit the Special Needs Support Request Form along with the required documentation.

6. **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](http://www.aub.edu.lb/titleix). **To report an incident**, contact the University's Title IX Coordinator Mitra Tauk at 01-350000 ext. 2514, or [titleix@aub.edu.lb](mailto:titleix@aub.edu.lb). An anonymous report may be submitted online via Ethics Point at [www.aub.ethicspoint.com](http://www.aub.ethicspoint.com).