



**AMERICAN
UNIVERSITY OF BEIRUT**
FACULTY OF MEDICINE

American University of Beirut
Faculty of Medicine
Department of Experimental Pathology, Immunology and Microbiology
Course Number (MBIM 223) - Diagnostic Parasitology
Semester Spring- Academic Year 2023-2024

Course Director	
Name:	Hiba El Hajj
Academic Title:	Associate Professor
Department:	Experimental Pathology, Immunology and Microbiology (EPIM)
Faculty:	Medicine
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Course Instructors and Teaching Assistants

Name	Rank	Department	E-mail
Hiba El Hajj	Associate Professor	EPIM	he21@aub.edu.lb
Nabil Haddad	Senior lecturer	Division of Health Professions, Medical Laboratory Sciences Program	nh167@aub.edu.lb
Habib Kalamouni	Laboratory instructor	EPIM	ha236@aub.edu.lb
Dalal Jaber	Laboratory instructor	EPIM	dj13@aub.edu.lb

Course Details

Course Number	<i>MBIM 223</i>
Course Title	<i>Diagnostic Parasitology</i>
Number of Credits	<i>4</i>
Course Venue	<i>Virtual lab room 205 (DTS second floor)</i>
Course Scheduled Days	<i>Tuesdays and Thursdays 8:00-10:00 a.m.</i>
Course Scheduled Timing	<i>(hour, mins, a.m., p.m.) or Insert Refer to Course Outline</i>

I. Course Description

A diagnostic parasitology 4 cr. course offered to MLSP junior students in spring semester of each academic year. The purpose of the course is to provide the basic principles and concepts of parasitic diseases and their laboratory diagnosis. Emphasis is placed on life cycles, pathogenesis, preventive measures and in-depth laboratory identification of the parasites.

II. Course Learning Objectives/Outcomes

At the end of this course, students will be able to:

- Describe the parasites' characteristics, pathogenesis, diseases produced, and symptoms generated.
- Identify in the laboratory the parasites' stages, cell morphology and cell structures.
- Relate the parasites' laboratory diagnostic features to the patients' clinical presentation.
- Perform all the steps required for semen analysis and examination and interpret the results.
- Describe all microscopic & biochemical investigations of urine specimens.
- Learn the methods for collection, transfer and handling of stool samples and samples for the recovery of parasites from other body sites.
- Present case studies in relation to parasitic infections.

III. Course Resources/References

- o Lectures and Laboratory PowerPoint Presentations: On Moodle.
- o Textbook: Practical guide to diagnostic parasitology. Lynne Garcia. ASM Press, 1999, Washington D.C
- o Medical Microbiology, 6th edition, Murray, Rosenthal and Pfaller

IV. Teaching Strategies and Technology Tools

- o Didactic lectures
- o Laboratory sessions
- o Assignments
- o Presentations
- o Laboratory discussions/Videos

V. Assessment Tools

- o Exams
- o Assignments
- o Presentations
- o Laboratory Reports
- o Quizzes

VI. Assignment/Presentation Grading Rubrics (if applicable)

- One mid-term and one final laboratory exam
- One mid-term and one final theoretical exam
- Laboratory reports & drop quizzes

VII. Grading Criteria

Course Grading Criteria

Learning Assessment Tool(s)	Percentage
Mid-term laboratory exam	10%
Mid-term theoretical exam	30%
Final laboratory exam	15%
Students presentations	5%
Final theoretical exam	40 %
Total	100%

Passing Grade

Grade: 60

VIII. Course Policies

- Students are expected to attend and participate in the lectures and labs and contribute to forum group-work.
- Students are also expected to abide by the lab safety and lab requirements distributed in their first lab session.
- Any breach of the lab rules & regulations will be dealt with accordingly.
- **Students will be dropped from the course if they do not attend 3 lecture hours per semester or miss 2 lab sessions per semester.**

IX. University Rules and Regulations *(Add Updated Policies and Links)*

ATTENDANCE: Attendance is mandatory; students are responsible for all information discussed during the lectures and laboratory sessions.

Ample time is available for self-study and to review daily material and prepare for upcoming classes. Expectations from students include:

1. Reviewing the course materials before the lectures in order to fully grasp and deeply understand and appreciate the concepts presented
2. Adequately preparing for the laboratory sessions
3. Integrating the knowledge obtained in the didactic lectures and in the laboratory sessions
6. Professional behavior
8. Proper referencing of information is critical and plagiarism is not accepted

Academic Integrity (cheating and plagiarism):

IX. University Rules and Regulations

‘AUB strives to make learning experiences accessible for all. If you anticipate or experience academic barriers due to a disability (such as ADHD, learning difficulties, mental health conditions, chronic or temporary medical conditions), please do not hesitate to inform the Accessible Education Office. In order to ensure that you receive the support you need and to facilitate a smooth accommodations process, you

must register with the Accessible Education Office (AEO) as soon as possible: accessibility@aub.edu.lb; +961-1-350000, x3246; West Hall, 314’.

Title IX statement on non-Discrimination and anti-Discriminatory harassment, including Sexual harassment at AUB

In line with its commitment to the principle of equal opportunity in education and employment, AUB policies protect you from discrimination on the basis of protected characteristics, including discriminatory harassment and sexual harassment. Protected characteristics include: race, color, religion, age, national or ethnic identity, sex, gender or gender identity, sexual orientation, pregnancy, marital status, disability, genetic predisposition or carrier status, alienage or citizenship status, and political affiliation.

The policies are applicable to all the AUB Community including: officers, faculty, staff, academic appointees, students (including medical interns and residents), visiting students, alumni, trainees, visitors, contractors, subcontractors, suppliers, located on campus and at AUB Medical Center, Advancing Research Enabling Communities Center (AREC), or any other facility or program affiliated with the University. The “AUB community” also includes the dependents and domestic employees of faculty and staff dwelling on campus and at AREC.

If you think you have experienced discrimination, discriminatory harassment, or sexual harassment, we encourage you to inform the Equity/Title IX Coordinator, Mitra Tauk at 01-350000 ext. 2514, titleix@aub.edu.lb, report to a Title IX deputy at your faculty or at any other faculty (www.aub.edu.lb/titleix), or report online (www.aub.ethicspoint.com). Reports may be submitted anonymously or not. Please know that the University will maintain the confidentiality of the complaint and privacy of the persons involved to the greatest extent possible, consistent with its goal of conducting a thorough and complete investigation and to the extent permitted by law.

You need to also know that the University has designated academic and administrative department/unit heads, managerial level staff, academic advisors, protection officers, and residence hall staff/monitors, as responsible employees or “mandatory reporters”, and may designate others at its discretion. These individuals are obligated to report actual or suspected discrimination or discriminatory harassing conduct to the Equity/Title IX Coordinator, unless they are a “confidential” resource. The following have been designated as confidential resources: on campus counselors in the Counseling Center of the Office of Student Affairs and AUB Medical Center counselors, and healthcare providers at the University Health Services (UHS) and at the AUB Medical Center. Confidential resources are not required to report actual or suspected discrimination or harassment to appropriate university officials, except in cases of suspected abuse of a minor, in the event of an external investigation or prosecution, or in the event of imminent danger to the reporting party or others.

X. Grading System

Numeric Course Grade to Letter Course Grade

Starting with Numeric Course Grade /100	Corresponding Course Letter Grade
< 60	F
60	D

61–62	D+
63–65	C–
66–68	C
69–71	C+
72–74	B–
75–78	B
79–82	B+
83–86	A–
87–92	A
93–100	A+

Grade Conversion Chart

Course Letter Grade	Quality Points
A+	4.3
A	4.0
A–	3.7
B+	3.3
B	3.0
B–	2.7
C+	2.3
C	2.0
C–	1.7
D+	1.3
D	1.0
F	0.0

Note: The GPA at AUB is capped at 4.0

I	P	PR	W	NP
Incomplete	Pass	In Progress	Withdraw	No Pass

XI. Course Outline

	Dates	Topic	Mode of Delivery*	Instructor
1	Tuesday January 23, 2024	General Characteristics and Classification of Parasites	Lecture	Dr. Hiba El Hajj
2	Tuesday January 23, 2024	Intestinal and Urogenital Protozoa: <i>Entamoeba histolytica</i> <i>Entamoeba coli</i> <i>Giardia lamblia</i> <i>Trichomonas vaginalis</i> <i>Balantidium coli</i>	Lecture	Dr. Hiba El Hajj
3	Tuesday January 30, 2024	Intestinal Protozoa: <i>Isospora belli</i> <i>Cryptosporidium parvum</i> <i>Microsporidia</i>	Lecture	Dr. Hiba El Hajj
4	Tuesday January 30, 2024	Blood Protozoa: <i>Plasmodium vivax</i> , <i>P. ovale</i> , <i>P. malariae</i> , <i>P. falciparum</i>	Lecture	Dr. Hiba El Hajj
5	Tuesday February 6, 2024	Tissue Protozoa: <i>Trypanosoma brucei</i> <i>Trypanosoma cruzi</i> <i>Leishmania donovani</i> <i>Leishmania braziliensis</i> <i>Leishmania tropica</i> <i>Toxoplasma gondii</i>	Lecture	Dr. Hiba El Hajj
	Tuesday February 13, 2024	MIDTERM THEORETICAL EXAM	TBD	
6	Tuesday February 20, 2024	Intestinal Nematodes: <i>Enterobius vermicularis</i> <i>Ascaris lumbricoides</i> <i>Trichuris trichiura</i> <i>Ancylostoma duodenale</i> <i>Necator americanus</i> <i>Strongyloides stercoralis</i>	Lecture	Dr. Hiba El Hajj
7	Tuesday February 20, 2024	Blood and Tissue Nematodes: <i>Trichinella spiralis</i> Filarial forms	Lecture	Dr. Hiba El Hajj
8	Tuesday February 27, 2024	Intestinal and tissue Cestodes: <i>Taenia saginata</i> <i>Taenia solium</i> <i>Hymenolepis spp.</i> <i>Diphyllobothrium latum</i> <i>Dipillidium caninum</i> <i>Echinococcus spp.</i>	Lecture	Dr. Hiba El Hajj
9	Tuesday March 5, 2024	Intestinal Trematodes: <i>Fasciolopsis buski</i>	Lecture	Dr. Hiba El Hajj

		<i>Heterophyes heterophyes</i>		
10	Tuesday March 5, 2024	Lung and Liver Trematodes: <i>Paragonimus westermani</i> (lung) <i>Fasciola hepatica</i> (liver) <i>Dicrocoelium dentriticum</i> (liver)	Lecture	Dr. Hiba El Hajj
11	Tuesday March 5, 2024	Blood Trematodes: <i>Schistosoma mansoni</i> <i>Schistosoma japonicum</i> <i>Schistosoma haematobium</i>	Lecture	Dr. Hiba El Hajj
12	Tuesday March 12, 2024	Parasites of body fluids (CSF, BAL, sputum, Lymph nodes aspirates,..) Characteristics of each fluid (physical and microscopic description) Sampling methods and preparation Associated parasites: observation/detection techniques	Lecture	Dr. Nabil Haddad
13	Tuesday March 19, 2024	Ecto-parasites and arthropods (vectors of diseases)	Lecture	Dr. Nabil Haddad
14	Tuesday March 26, 2024	Urine analysis: Biochemical examination Interpretation of urine test results Collection, transportation & macroscopic examination Microscopic examination (cells, casts, crystals and parasites)	Lecture	Dr. Nabil Haddad
15	TBD	Group Presentations I		D. Jaber H.Alkalamouni
16	TBD	Group Presentations I		D. Jaber H.Alkalamouni
	TBD	FINAL THEORETICAL EXAM		

Laboratory sessions

	Dates	Topic	Mode of Delivery*	Instructor
1	Thursday January 25, 2024	Phenotypic Identification of Parasites (Stool concentration, occult blood testing, fecal and blood smear preparation and examination)	Laboratory session	H.Alkalamouni
2	Thursday February 1, 2024	Intestinal Protozoa	Laboratory session	H.Alkalamouni
3	Thursday February 8, 2024	Blood and Tissue Protozoa	Laboratory session	H.Alkalamouni
4	Thursday February 15, 2024	Molecular Laboratory Identification (PCR, Real-time PCR, etc.)	Laboratory session	H.Alkalamouni
	TBD	MIDTERM LAB EXAM		

5	Thursday February 22, 2024	Intestinal, Blood & Tissue Nematodes	Laboratory session	H. Alkalamouni
6	Thursday February 29, 2024	Intestinal & Tissue Cestodes	Laboratory session	D. Jaber
7	Thursday March 7, 2024	Intestinal, Lung, Liver & Blood Trematodes	Laboratory session	D. Jaber
8	Thursday March 14, 2024	Semen Analysis and Examination (Assess liquefaction, count, and viability, calculation of motility and percent abnormality)	Laboratory session	D. Jaber
9	Thursday March 21, 2024	Macroscopic, Biochemical, and Microscopic Urine Examination (Reagent strip, slide identification of cells, casts, and crystals, etc.) + Stool Concentration and Occult Blood Testing	Laboratory session	D. Jaber
		<i>FINAL LAB EXAM</i>		