



Course Syllabus

1	Course title	Diagnostic Parasitology	
2	Course number	0308353	
3	Credit hours	3 hrs (2 theory, 1 practical)	
	Contact hours (theory, practical)	3 theory, 3 practical / week	
4	Prerequisites/co-requisites	General Microbiology 0304251	
5	Program title	Clinical Laboratory Sciences	
6	Program code	0308	
7	Awarding institution	University of Jordan	
8	School	Science	
9	Department	Department of Clinical Laboratory Sciences	
10	Course level	Third Year	
11	Year of study and semester (s)	Fall 2023/ 2024	
12	Other department (s) involved in teaching the course	BSc	
13	Main teaching language	English	
14	Delivery method	Face to face learning	
15	Online platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date	2/2024	

17 Course Coordinator:

Name: Dr. Ibrahim Mosleh Office number: Biology Building 211 Email: i.mosleh@ju.edu.jo	Contact hours: Monday & Wednesday 10.00 – 11:00 pm Phone number:
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18 Other instructors:

Name: Office number: Phone number: Email: Contact hours:
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19 Course Description:

An important part of this course is the identification of parasites and their association with the diseases they cause. Knowledge of the mechanisms by which those diseases occur provides a basis for laboratory diagnosis. The goal of the lecture portion of this course is to familiarize the student with the characteristics of each of the clinically significant human parasites, including morphology, diseases caused, life cycle, route of infection, appropriate clinical specimens, pathogenesis, host immune response to infection, and prevention and treatment. This information serves as the basis for the laboratory identification of parasites.



20 Course aims and outcomes:

A- Aims:

This course will enable students to explore and gain further understanding of diagnostic parasitology through the introduction of different forms of parasites.

Provide students with a broad base of knowledge regarding diagnostic parasitology and its interaction with the human host and pathogenic outcomes:

B- Students Learning Outcomes (SLOs):

For purposes of mapping the course SLOs to the Clinical Laboratory Sciences program SLOs, at the successful completion of the CLS program, graduates are expected to be able to:

SLO(1). Understand and apply the theoretical foundations of medical laboratory sciences to accurately calibrate and operate advanced laboratory equipment.

SLO(2). Demonstrate knowledge of safety protocols, Ministry of Health regulations, and environmental preservation practices when handling samples of pathogens and chemical/biological risks.

SOL(3). Acquire in-depth technical knowledge to stay abreast of scientific advancements and actively participate in local and global applied research in the field.

SOL(4). Perform diverse analyses and effectively interpret results for various clinical samples across laboratory disciplines such as hematology, clinical chemistry, microbiology, urine analysis, body fluids, molecular diagnostics, and immunology.

SOL(5). Apply practical training to solve complex problems, troubleshoot issues, and interpret results, ensuring a connection between data and specific medical conditions for precise diagnosis.

SOL(6). Show effective communication skills to convey information accurately and appropriately in a laboratory setting.

SOL(7). Demonstrate a commitment to lifelong learning and innovation by applying modern techniques, critically analyzing information, and contributing to the creation and application of new knowledge in medical laboratory sciences which fulfil the requirements of national and international CBD.

SOL(8). Uphold professional behavior, ensuring the confidentiality of client information, and respecting client privacy throughout all aspects of laboratory work.

SOL(9). Apply managerial skills that align with quality assurance, accreditation, quality improvement, laboratory education, and resource management, showcasing competence in the effective administration of laboratory practices.

Descriptors	ILO/ID	Program SLOs				
		Course SLOs	SLO (1)	SLO (3)	SLO (4)	SLO (5)
Knowledge	A1	Get a broad knowledge of the important parasites of human and their life cycles.		X		
	A2	Recognize the various parasitic pathogens in relation to body system infections and in terms of their pathogenesis, transmission and diagnosis.	X			
Skills	B1	Be familiar with important techniques of examining these parasites from clinical specimens.			X	
	B2	Have the skills of specimen collection, storage, transport, acceptability and processing procedures.				X
Competence	C1	Describe immunologic and serologic identification techniques, the prevention and control of significant parasites.	X			
	C2	-Discuss and be familiar with new technology in current diagnosis of body system- parasitic diseases. -Choose the appropriate methods for the examination of parasitology specimens for definitive identification of parasitic pathogens. -Report and interpret the results of the testing to the clinician.		X	X	X

21. Topic Outline and Schedule:

Week	Lecture	Topic	Student Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1	Introduction to Parasitology -parasites and Parasitism	A1	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>
	2	Parasitic infections and diseases The Protozoa: classification and structure of protozoa of medical importance	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>
2-3	3-5	Amoebae: Pathogenic (dysentery) amoeba <i>Entamoeba histolytica</i> Non-pathogenic amoebae: <i>Entamoeba coli</i> <i>Endolimax nana</i> , <i>Iodameba buetschlii</i> Pathogenic free-living amoeba: <i>Naegleria fowleri</i> , <i>Acanthamoeba</i> sp.	A2, B1,B2, C1, C2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>
3-5	6-7	Intestinal and urogenital flagellates: <i>Giardia</i> sp. <i>Trichomonas</i> sp. Intestinal ciliates: <i>Balantidium coli</i>	A2, B1,B2, C1, C2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>
	8-10	Blood and tissues flagellates: <i>Leishmania</i> sp., <i>Trypanosoma</i> sp.	A2, B1,B2, C1, C2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>
6-7	11-12	Malaria Parasites: <i>Plasmodium</i> sp Coccidia: <i>Toxoplasma</i> sp	A2, B1,B2, C1,C2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>
7	13	Coccidia contd: <i>Isospora</i> , <i>Sarcocystis</i> <i>Cryptosporidium</i>	A2, B1,B2,C1	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Basic Clinical Parasitology by Neva</i>

7-8	14-16	Introduction to Cestodes: Pseudophyllidean tapeworm <i>Diphyllobothrium latum</i> Cyclophyllidean tapeworm: <i>Taenia saginata</i> , <i>Taenia solium</i> .	A1, B1, B2, C1, C2	Lecture Room	Synchronous	Quiz, Exam	Face to Face	Basic Clinical Parasitology by Neva
9	17	<i>Taenia multiceps</i> , <i>Hymenolepis nana</i> , <i>Diphylidium caninum</i> , <i>Echinococcus granulosus</i> . Larval cestodes : cysticercus, hydatid cyst, coenurus, plerocercoid	A2, B1, B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva
9-10	18-19	Introduction to Nematodes (Nematoda) Intestinal worms: <i>Ascaris</i> sp., <i>Trichuris</i> sp <i>Enterobius</i> sp	A1, A2, B1, B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva
11-13	20-24	Hookworm, <i>Stroglyoides</i> sp Tissue worms: Filariae – <i>Wuchereria</i> sp, <i>Brugia</i> , <i>Loa loa</i> <i>Onchocerca</i> , <i>Dracunculus</i> sp., Larva Migrans	A1, A2, B1, B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva
13-14	25-26	Introduction to trematodes intestinal flukes: <i>Fasciolopsis buski</i> , <i>Heterophyes</i>	A1, A2, B1, B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva
	27	Hepatic flukes <i>Fasciola</i> , <i>Opisthorchis</i> , <i>Dicrocoelium dendriticum</i> Pulmonary flukes: <i>Paragonimus</i> sp.	A2, B1, B2, C1, C2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva
15	28	Indirect evidence of parasitic infection Arachnida	A1, A2, B1, B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva
	29-30	Insecta	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	Basic Clinical Parasitology by Neva

22 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	SLOs	Period	Platform
Assignments					
Quizzes	20			At the end of each topic	On campus
Lab Reports	10			Every week	
First Exam					
Mid Exam	30	Introduction, Protozoa, Cestoda	A1, A2, B1, B2, C1	Week 9	On campus
Final Exam	40	All required chapters	All SLOs	Week 16	On campus

23 Course Requirements

Students are directed and encouraged to use all possible resources:

- use the internet as a learning source.
- a series of short movies is promoted
- students are encouraged to learn a suitable software package as a learning tool.

24 Course Policies:

A- Attendance policies:

- Attend and participate in all classes: attendance will be taken. Class time will be used to discuss, elaborate, expand, etc., on the written modules. This may include formal/informal lectures, audio visual presentations, demonstrations, labs, etc.

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

- A student who has been absent for 15% or more of the total hours of any course, including absences for medical or compassionate reasons, may be required to withdraw from that particular course.
- Students who miss quizzes or examinations will automatically be assigned a mark of zero unless the respective instructor, or the Program Head, has been notified of the reason for absence *PRIOR* to the commencement of the exam. Acceptable reasons will be evaluated at the time (e.g., illness - medical certificate may be required, serious illness or death in the family, etc.). Supplemental examinations may be allowed in legitimate cases.



C- Health and safety procedures:

All students need to be immunized against hepatitis B, immunization certificate must be forwarded to the coordinator of the hospital training. Pregnancy affects immunization and it is the responsibility of the student to notify the health person as soon as possible of her pregnancy. If there are fees related to immunization, it is the responsibility of the student.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

Evaluation	Point %	Date
Assignments or Quizzes	20%	
Midterm Exam	30%	Will be announced in due time.
Lab. Reports	10%	
Final Exam including the laboratory (10%)	50%	Will be announced in due time.

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

1. The University Computer Lab.
2. The University Main Library.
3. The University e-library.

25 References:

1. Basic Clinical Parasitology 2007, Franklin A. Neva and Harold W. Brown., 9th ed., Prentice Hall Int.
2. Animal Agents and Vectors of Human Diseases, 1985. Paul C. Beaver and Rodney C. Jung, 5th ed., Lea & Febiger
3. Google image demonstrations of parasitic stages and life cycles

26 Additional information:

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Name of Course Coordinator: **Prof. Ibrahim Mosleh**

Signature: *Ibrahim Mosleh* Date: 2-2024

Head of Curriculum Committee/Department: **Dr. Suzan Matar**

Signature: *Suzan Matar*

Head of Department: **Ahmed Abu siniyeh**

Signature: *Ahmed Abu siniyeh*

Head of Curriculum Committee/Faculty: **Dr. Mu'ayyad Al Hseinat**

Signature: *Mu'ayyad Al Hseinat*

Dean: **Prof. Mahmoud Jaghoub**

Signature: *Mahmoud Jaghoub*