Course Syllabus

1	**Course title**	Diagnostic Mycology
2	**Course number**	0308354
3	**Credit hours**	3 hrs (2 theory, 1 practical)
	Contact hours (theory, practical)	(2 theory, 3 practical) week
4	**Prerequisites/co-requisites**	General biology 1 (0304101)
5	**Program title**	BSc in Clinical Laboratory Sciences
6	**Program code**	0308
7	**Awarding institution**	The 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)**	Second semester 2023-2024
12	**Other department (s) involved in teaching the course**	NA
13	**Main teaching language**	English
14	**Delivery method**	■Face to face learning ☐Blended ☐Fully online
15	**Online platforms(s)**	■Moodle ■Microsoft Teams ☐Skype ☐Zoom ☐Others……
16	**Issuing/Revision Date**	2/2024

17 Course Coordinator:

Name: Dr. Dina Yamin	**Contact hours:** Monday, 10:00 – 13:00
Office number: Biology Building 202	**Phone number:** 22224
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18 Other instructors: None

Name:
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19 Course Description:

Diagnostic mycology is a distinct subspecialty of medical microbiology and infectious disease. The clinical laboratory scientist will gain knowledge about the etiologic agents, determinants of pathogenicity, laboratory detection, recovery and identification. The course will focus on infectious diseases caused by fungi including their **epidemiology**, **histopathology**, **diagnosis**, **and treatment**. Host-parasite interactions and the environmental and molecular factors that contribute to establishment of fungal disease in humans and animals

20 Course aims and outcomes:

A- **Aims:**

This course will introduce basic concepts including mycology terminology, identify the meaning of molds and yeast, describe the interaction of various kind of fungi and host, discuss how fungi cause diseases and demonstrate several types of human fungal infections.

B- **Students Learning Outcomes (SLOs):**

For purposes of mapping the course SLOs to the CLS 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.

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

SLO (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.

SLO (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.

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

SLO (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.

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

SLO (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 (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)
Knowledge	A1	Define mycology terminology, identify the meaning of molds and yeast						X			
	A2	Describe the basic structure and classification of pathogenic fungi	X		X	X	X	X			
	A3	Recognize the anatomical parts of fungal cells and their relation in Identification of fungi	X		X	X	X				
Skills	B1	Describe the interaction of various kind of fungi and host, discuss how fungi cause diseases				X	X		X		
	B2	Demonstrate knowledge and understanding of the pathogenesis of the various mycoses, their clinical manifestations, diagnosis and management				X	X	X		X	X
Competence	C1	Demonstrate several types of human fungal infections			X	X	X	X			
	C2	Apply relevant identification techniques and skills in any laboratory settings using molds or yeasts		X			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	Mon	Course Introduction	A1,A2	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	----------		Face to Face	Lab	Practical	Report	
	Wed	Introduction to fungi and terminology	A1,A2,A3	Online	e-learning	Asynchronous	Assignment	
2	Mon	The Fungal kingdom Classification and nomenclature	A1,A2,A3	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Safety rules and instructions	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Characteristics of fungi; fungal life cycles	A1,A2,A3	Online	e-learning	Asynchronous	Assignment	
3	Mon	Dynamic growth of Fungi	A1,A2,A3	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	KOH mount preparation	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Introduction to diagnostic laboratory methods	A1,A2,B1 ,B2	Online	e-learning	Asynchronous	Assignment	
4	Mon	Identification of yeast and mold		Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Lactophenol cotton blue staining	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Direct microscopy, culture and Histopathology	A1,A2,B1 ,B2	Online	e-learning	Asynchronous	Assignment	
5	Mon	Approaches to diagnosis of fungal diseases in different patient populations: Macroscopy & Microscopy		Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Scotch tape technique	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Immune system and fungal diseases: Antigen detection for fungal diseases, Antibody detection for fungal diseases	A1,A2,B1 ,B2	Online	e-learning	Asynchronous	Assignment	
6	Mon	Molecular diagnosis of fungal Diseases		Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Slide culture technique	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Antifungal susceptibility testing	A1,A2,B1 ,B2	Online	e-learning	Asynchronous	Assignment	
7	Mon	MIDTERM EXAM						
	Mon-lab	Subculturing	B1,B2	Face to Face	Lab	Practical	Report	

	Wed	Overview of fungal disease, Classification of Mycoses based on The primary site of pathology	All	Online	e-learning	Asynchronous	Assignment	
8	Mon	Superficial Mycoses	All	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Permanent slide preparation	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Pityriasis Versicolor, Tinea Nigra; Piedra	All	Online	e-learning	Asynchronous	Assignment	
9	Mon	Cutaneous Mycoses: Epidermophyton floccosum	All	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Chrom agar	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Microsporum spp., Trichophyton spp.,	All	Online	e-learning	Asynchronous	Assignment	
10	Mon	Subcutaneous mycoses:		Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Germ tube test + Cornmeal agar	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Chromoblastomycosis Phaeohyphomycosis Sporotrichosis	All	Online	e-learning	Asynchronous	Assignment	
11	Mon	Lobomycosis Rhinosporidiosis	All	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	API assimilation kit	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Systemic Opportunistic Mycoses:	All	Online	e-learning	Asynchronous	Assignment	
12	Mon	Blastomycosis Paracoccidioidomycosis	All	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Antifungal susceptibility testing	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Histoplasmosis Coccidioidomycosis	All	Online	e-learning	Asynchronous	Assignment	
13	Mon	Opportunistic Infections: Candidiasis Cryptococcosis	All	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Identification lab	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Pseudallescheriasis Aspergillosis; Zygomycosis	All	Online	e-learning	Asynchronous	Assignment	
14	Mon	Entomophthoromycosis; Geotrichosis and miscellaneous rare mycoses (including pneumonia caused by Pneumocystis carinii)	All	Face to Face	Classroom	Synchronous	Quiz	
	Mon-lab	Final Lab Exam	B1,B2	Face to Face	Lab	Practical	Report	
	Wed	Endemic Mycoses Caused by Dimorphic Environmental Molds	All	Online	e-learning	Asynchronous	Assignment	
15	Mon Wed	REVISION		Face to Face	Classroom	Synchronous	Quiz	
16		FINAL EXAM						

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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 (Week)	Platform
Assignments and Quizzes	10			Every lab	lab
Lab Reports	5			Every lab	lab
Lab final exam	15			Week 14	On campus
Mid Exam	30	1-6	All	Week 7	On campus
Final Exam	40	1-15	All	Week 16	On campus

23 Course Requirements

Students should have a computer, internet connection, webcam, account on a specific software/platform
Students are directed and encouraged to use all possible resources for theoretical and practical sections such as: Book library, E-library, computer labs, Mycology lab, Internet access…..etc

24 Course Policies:

A- Attendance policies: Attendance of lectures and lab sessions is obligatory. No more than 15% of classes can be missed under any circumstances. Students are supposed to be on time for each session

B- Absences from exams and submitting assignments on time: 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: Strict and are followed up, especially in the lab, PPE must be used.

D- Honesty policy regarding cheating, plagiarism, misbehavior: Any act of cheating or plagiarism is not tolerated and the students are clearly required to submit their own work

E- Grading policy: 70% theory, 30% practical

Theory (30 marks Midterm, 40 marks Final exam)

Practical (15 marks Assignments and Quiz, 15 marks Final Lab)

F- Available university services that support achievement in the course: Text books, laboratories, computers and internet access

25 References:

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

Fundamental Medical Mycology: Errol Resis, H. Jean Shadomy, G. Marshan Lyon Ill (2011). Wiley-Blackwell

B- Recommended books, materials, and media:

1- Medical Mycology, Arora, D.R. (2014), CBS publishers and Distributors

2. Practical laboratory mycology, Koneman (1985). Williams & Wilkins.

C- Internet resources

https://www.gfmer.ch/Medical_journals/Mycology.htm

26 Additional information:

Name of Course Coordinator: -**Dr. Dina Yamin**	Signature: *Dina Yamin*	Date: -2-2024
Head of Curriculum Committee/Department: - **Dr. Suzan Matar**	Signature: *Suzan Matar*	
Head of Department: - **Dr. Ahmed Abu siniyeh**	Signature: *Ahmed Abu siniyeh*	
Head of Curriculum Committee/Faculty: **Dr. Muayyad Al Hseinat**	Signature: *Muayyad Al Hseinat*	
Dean: **Prof. Mahmoud Jaghoub**	Signature: *Mahmoud Jaghoub*	