Course Syllabus

1	**Course title**	Quality Control and Medical Laboratory Management
2	**Course number**	0308471
3	**Credit hours**	2 hrs
	Contact hours (theory, practical)	2 hrs (2 theory)
4	**Prerequisites/co-requisites**	0308344, 0308363, 03011311
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**	Fourth 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:
Office number:
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19 Course Description:

This course is designed to equip students with the essential knowledge and skills required by healthcare providers, including clinicians and laboratory staff, for the proper collection of human samples, efficient performance of tests, and acquisition of reliable and relevant data with the utmost benefit to patients and communities while minimizing risks to themselves. Throughout the course, students will receive a comprehensive overview of the methodologies employed to ensure quality patient management, encompassing quality assurance and quality control techniques. Additionally, the curriculum will cover healthcare organizational behaviors, essential for understanding the dynamics of healthcare systems, along with the requisite skills for assuming management roles.

20 Course aims and outcomes:

A- **Aims:**

This course is intended to teach the student the ways and means by which health care providers such as clinician and laboratory staff collect proper human samples, perform tests effectively and obtain reliable and relevant data with maximal benefit to the patient and community and minimal risk to themselves. The student will receive a complete overview of methods used to ensure quality patient management, quality assurance and quality control techniques. The course will also include health care organizational behaviors and the skills required for management roles, budget planning, safety precautions, sterilization and disinfection.

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.

SOL(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 (4)	SLO (9)
Knowledge	A1	To understand the basic principle of Q.C and the difference between Quality Control and Quality Assurance	X			
	A2	To understand the methodology of establishment of reference range		X		
Skills	B1	To plot the Q.C data and calculate mean and standard deviation and understand West Guard Rules			X	
	B2	To analyze the data of both internal and external Q.C and interpret the results with corrective action required			X	
Competence	C1	To be capable of comparing different methods and select the suitable one for the lab				X
	C2	To be capable of understanding the administrative issues of lab with emphasis on accreditation requirements in addition to apply panic values in lab and the methodology of rejected samples criteria and dealing with hemolyzed and lipemic samples				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	1.1	Introduction	A1,A2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
2	2.1	Facilities and safety	A1,A2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
3	3.1	Lab waste disposal	A1,A2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
4	4.1	Lab equipment, preventive maintenance and consumables	A1,A2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
5	5.1	Sample management	B1,B2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
6	6.1	Occurrence management	B1,B2,C1, C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
7	7.1	Quality Control for Quantitative tests	B1,B2,C1, C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
8	8.1	MIDTERM						
9	9.1	Quality assurance	B1,B2,C1, C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
10	10.1	Methods Evaluation	B1,B2,C1, C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
11	11.1	Documents and Records	C1,C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
12	12.1	Information management	B1,B2,C1, C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
13	13.1	Laboratory Requisitions and Reporting of Results	B1,B2,C1, C2	Fully Online	E-learning &	Synchronous	Assignment & Quiz	

					Microsoft Teams			
14	14.1	Assessment audit	C1,C2	Fully Online	E-learning & Microsoft Teams	Synchronous	Assignment & Quiz	
15	15.1	Norms and accreditation	C1,C2	Fully Online	E-learning &Microsoft Teams	Synchronous	Assignment & Quiz	
16	16.1	FINAL EXAM						

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	10			Every week	e-learning
Quizzes	10			Every week	e-learning
Mid Exam	30	1-7	All	Week 8	On campus
Final Exam	50	1-15	All	Week 16	On campus

23 Course Requirements

Students should have a computer, internet connection, webcam, account on a specific software/platform

24 Course Policies:

A- Attendance policies: attendance will be taken. No more than 15% of classes can be missed under any circumstances. The 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: NA

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: 20% assignments and quizzes, 30 % midterm exam and 50% final exam

F- Available university services that support achievement in the course: Textbook, computer, and internet access

25 References:

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

Quality Assurance in Medical Laboratory, Lecture Notes Prepared by Prof. Dr. Y. Bilto, Jordan university

B- **Recommended books, materials, and media:**

Laboratory Quality Management System Handbook. WHO Publications 2011.

Lab. Management and Accreditation, Lecture Notes Prepared by Prof. Dr.Y. Bilto, Jordan university.

Basics of quality assurance for intermediate and peripheral laboratories, 2nd edition, Eds. M. El-nageh, C.C, Heuck, W.Apple, J. Vandepitte, K. Engbaek and A. kallner. WHO Regional Publications, Eastern Mediterranean Series 2, Cairo, Egypt.

Principles of Management of Health Laboratories, eds. L. Houang and M. El-Nageh, WHO Regional Publications, Eastern Mediterranean Series 3. Alexandria, Egypt

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*	