



## Course Syllabus

1	Course title	Clinical Chemistry 1	
2	Course number	0308343	
3	Credit hours	3 hrs.	
	Contact hours (theory, practical)	(2 theory, 3 practical)	
4	Prerequisites/corequisites	Biochemistry	
5	Program title	Bachelor of Clinical Laboratory Sciences	
6	Program code	0308	
7	Awarding institution	University of Jordan	
8	School	Science	
9	Department	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		
13	Main teaching language	English	
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
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	25/2/2024	

### 17 Course Coordinator:

<b>Name:</b> Abeer AlQatati <b>Office number:</b> 1 <sup>st</sup> Floor-Biology building <b>Email:</b> a.alqatati@ju.edu.jo	<b>Contact hours:</b> <b>Phone number</b> 0797994080
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### 18 Other instructors:

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

This course describes the principles of clinical biochemistry in the management of diseases. The scope of this course covers the type of requested diagnostic tests, normal and abnormal carbohydrates, lipids and proteins metabolism. The outcome of abnormal metabolism on the development of diabetes, dyslipidemia, atherosclerosis, obesity, and metabolic disorders. Further knowledge will be obtained on kidney function, liver function, electrolytes and vitamins.



## 20 Course aims and outcomes:

### A- Aims:

This is an introductory course which can provide the student with some basic knowledge on routine biochemical tests and the objectives of their request.

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

For purposes of mapping the course SLOs to the MLS program SLOs, upon the successful completion of the 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 (3)	SLO (4)	SLO (5)
Knowledge	A1	Acquiring knowledge about the diagnostic tests commonly used in clinical settings, their methodologies, and interpretation.			X
	A2	Obtaining knowledge of organ functions, particularly the kidneys and liver, and their role in maintaining biochemical balance.		X	
Skills	B1	Analyzing and interpreting complex biochemical data to identify patterns and abnormalities.		X	
	B2	Applying biochemical knowledge to diagnose and propose treatment plans for patients with metabolic disorders.			X
Competence	C1	Applying acquired knowledge and skills to real-world clinical scenarios, demonstrating an ability to make informed decisions in the management of diseases.			X
	C2	Recognizing the importance of staying updated on advancements in clinical biochemistry and maintaining a commitment to lifelong learning.	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 to clinical biochemistry	A1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	1.2	Introduction to clinical biochemistry	A1	Face to Face	Lecture Room	Synchronous	Written Exams	
2	2.1	Normal and abnormal carbohydrate metabolism	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	2.2	Normal and abnormal carbohydrate metabolism	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	

3	3.1	Regulation of glucose homeostasis in the blood	B1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	3.2	Regulation of glucose homeostasis in the blood	B1	Face to Face	Lecture Room	Synchronous	Written Exams	
4	4.1	Diabetes as a disorder of carbohydrate metabolism	B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	4.2	Diabetes as a disorder of carbohydrate metabolism	B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	
5	5.1	Lipids and lipoproteins metabolism	A1, B1, C1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	5.2	Lipids and lipoproteins metabolism	A1, B1, C1	Face to Face	Lecture Room	Synchronous	Written Exams	
6	6.1	Dyslipidemia as a disorder of lipid metabolism	B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	6.2	Dyslipidemia as a disorder of lipid metabolism	B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	
7	7.1	Atherosclerosis and plaque formation in cardiovascular diseases	B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	7.2	Atherosclerosis and plaque formation in cardiovascular diseases	B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	
8	8.1	Introduction to Kidney function	A1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	8.2	Kidney function tests	A2, B1	Face to Face	Lecture Room	Synchronous	Written Exams	
9	9.1	Kidney diseases	B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	9.2	Kidney diseases	B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	

10	10.1	Introduction to Liver function	A1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	10.2	Bilirubin metabolism	B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	
11	11.1	Liver diseases	B1, B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	11.2	Liver diseases	B1, B2, C1	Face to Face	Lecture Room	Synchronous	Written Exams	
12	12.1	Liver function tests	A2, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	12.2	Liver function tests	A2, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	
13	13.1	Electrolytes	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	13.2	Electrolytes	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	
14	14.1	Acid-base balance	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	14.2	Acid-base balance	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	
15	15.1	Vitamins	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	Clinical chemistry 7th ed by Bishop
	15.2	Vitamins	A1, B1, B2	Face to Face	Lecture Room	Synchronous	Written Exams	
16	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					
Quizzes					
Lab Reports	30	All lab experiments		A report each week, then final exam on week 14	In campus
First Exam					
Second Exam or (Mid Exam)	30	Introduction, carbohydrate metabolism, lipids and lipoproteins		8	In campus
Final Exam	40	All chapters		16	In campus

## 23 Course Requirements

**(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):** Students are directed and encouraged to use all possible resources:

- a) use the internet as a learning source.
- b) a series of short movies is needed.

## 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:

1. 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.
2. 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: Depends on the median value

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

## 25 References:

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

Clinical chemistry 7th edition by Bishop

B- Recommended books, materials, and media:

## 26 Additional information:

Name of Course Coordinator: **Dr. Abeer Al-Qatati**

Signature: *Abeer Al-Qatati* 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. Mu'ayyad Al Hseinat**

Signature: *Mu'ayyad Al Hseinat*

Dean: **Prof. Mahmoud Jaghoub**

Signature: *Mahmoud Jaghoub*