COURSE DESCRIPTIONS

Faculty	Allied medical sciences				
Department	Medical laboratory sciences			**NQF level**	
Course Title	Clinical Biochemistry Lab 2	**Code**	902426	**Prerequisite**	902422
Credit Hours	1	**Theory**	0	**Practical**	1
Course Leader	M.Sc Sokiyna Ababneh	**email**	M.Sc Sokiyna Ababneh		
Lecturers	M.Sc Sokiyna Ababneh	**emails**	s.ababneh@jadara.edu.jo		
Lecture time	Sunday 1-4 PM	**Classroom**	D107	**Attendance**	
Semester	Second 2022/2023	**Production**	2022	**Updated**	2023

Short Description
This course discusses the general fundamentals and principles of clinical bio-analytical chemistry methods. This practical course covers testing procedures used in the clinical chemistry laboratory, including methods of analysis, practical skills, source of errors, quality control, and specific basic instrumentation in clinical chemistry laboratories. This practical course focuses on correlating clinical chemistry lab results with various pathologies or disorders and interpreting these results.
Course Objectives
1. To advance students' phlebotomy skills and to emphasize the application of safety procedures. 2. To introduce students to various laboratory analyses

Course Intended Learning Outcomes (CILOs)
A. Knowledge - Theoretical Understanding
a1. Define the principles of assays/ methods.
B. Knowledge - Practical Application
a2. Apply the procedure for assays and read the kit sheet
C. Skills - Generic Problem Solving and Analytical Skills
b1. Take part in analyzing and interpreting the results and correlate them with various pathological cases.
D. Skills - Communication, ICT, and Numeracy
b2. Prove the ability to Discuss scientific questions in the student field of study
E. Competence: Autonomy, Responsibility, and Context
c1. Adapt the knowledge gained from this course, to identify the source of errors and interfering factors in assays.

Teaching and Learning Methods
1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming 7. Case studies 8. Problems solving 9. Slides 10. References 11. Videos 12. Scientific articles
Assessment Methods
30% mid-term exam **10% quizzes** **10% lab reports** **50% final exam**

Course Contents					
Week	**Hours**	**CILOs**	**Topics**	**Teaching & Learning Methods**	**Assessment Methods**
1.	3	a1,a2	Oral glucose tolerance test	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods teaching	Quiz, Midterm, final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction
2.	3	a1,a2	Electrolytes determination of sodium and potassium by ion selective electrode	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods of teaching	Quiz, Midterm, Lab Reports, final exam Practical performance, Laboratory applications Discussion & Interaction
3.	3	a1,a2,b1	Electrolyte determination of serum calcium and phosphorous	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance	Quiz, Midterm, final exam Lab Reports, Practical performance,

				5. Laboratory applications 6. Brainstorming & other methods teaching	Laboratory applications Discussion & Interaction
4.	3	a1,a2,b1	Determination of serum iron and total iron binding capacity	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods teaching	Quiz, Midterm, final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction
5.	1	a1,b1,b2,c1	**Mid term exam**	Handout	
6.	3	a1,a2,b1,b2	Determination of Vanillylmandelic acid (VMA) in urine	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods teaching	final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction & others
7.	3	a1,a2,b1,b2,c1	Creatinine clearance test	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods teaching	final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction & others
8.	3	a1,a2,b1,b2,c1	Serum protein electrophoresis by cellulose acetate strips	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming &	, final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction

				other methods teaching	
9.	3	a1,a2,b 1,b2,c1	Enzyme linked immunosorbent assay (ELISA)	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods teaching	, final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction & others
10.	3	a1,a2,b 1,b2,c1	revision	1. Lecture with discussion 2. Demonstrations 3. Lab Reports 4. Practical performance 5. Laboratory applications 6. Brainstorming & other methods teaching	, final exam, Lab Reports, Practical performance, Laboratory applications Discussion & Interaction & others
11.	2	a1,b1,b 2,c1	**Final exam**	Handout	

Infrastructure	
Textbook	Clinical Chemistry-Techniques, Principles, and Correlations. M. Bishop et al. Lippincott's Williams and Wilkins. 2020
References	https://thepoint.lww.com/gateway other references: handouts
Required reading	1. Manual in clinical chemistry 2. Kit sheets 3. University library 4. Internet 5. Scientific Journals 6. Textbooks (i.e., Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics.Carl A, Burtis, David E. Burns.Saunders.8th-Edition 2020)
Electronic materials	Provided to the students through JU e-learning website.
Other	In addition to the above, the students will be provided with handouts by the lecturer.

Course Assessment Plan							
Assessment Method		**Grade**	**CILOs**				
			a1	**a2**	**b1**	**b2**	**c1**
First (Midterm)			13		5	10	2
Second (if applicable)							
Final Exam			15		10	10	15
Coursework							
Coursework assessment methods	Assignments						
	Case study						
	Discussion and interaction						
	Group work activities						
	Lab tests and assignments			10			
	Presentations						
	Quizzes				3		7
Total			28	10	18	20	24

Plagiarism
Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.