



**Jerash University
Faculty of Pharmacy**

Course Syllabus

Course Title: Clinical Biochemistry	Course code: 1101413
Course Level: 5th year	Course prerequisite: 1101215
Lecture Time:	Credit hours: 3

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Jalal Aljamal				

Course description:

This course discusses via case-study analyses the basic principles of quantitative analysis utilized in common clinical laboratory tests. An introduction to interpretation of abnormal clinical laboratory values is presented, and regulatory effects of various hormones are described.

Course objectives:

This course will familiarize the student with the principles, limitations, and interpretation of certain clinical diagnostic procedures, and emphasize the biochemical mechanisms of specific disease states.

Course components

- **Books**

Clinical Chemistry: Principles, Procedures, Correlations by Michael L. Bishop, Edward P. Fody, Larry E. Schoeff Publisher: Lippincott Williams & Wilkins;

Teaching methods:

Lectures, discussion groups.

Learning outcomes:

- Knowledge and understanding

This course should enable the student to:

1. Interpret physicians order for:
 - a. Biochemical diagnostic assays
 - b. Endocrine function tests/therapy
2. Identify biochemical diagnostic agents or tests useful in:
 - a. Diagnosis
 - b. Monitoring response to therapy
3. Define, interpret, or apply biochemical terminology as it relates to:
 - a. Disease state
 - b. Metabolic functions (or organs)

- c. Endocrine function
- 4. Interpret the clinical significance of biochemical lab test results

- Cognitive skills.

Thinking and analysis skills will be developed through solving case studies.

- Communication skills.

In lecture, worksheets are given to students to enable them to develop team work and help them to improve their communication skills.

- Practical skills.

Practical skills will be developed through students' presentations and case studies discussions.

Assessment instruments

- Quizzes, short reports and/ or presentations.
- Examination

<u>Marks</u>	
Assessment Instruments	Mark
First examination	20%
Second examination	20%
Final examination	40%
Reports, Quizzes.	20%
Total	100

Course academic calendar

week	Basic and support material to be covered	quizzes and their due dates
(1)	Introduction Amino acids & Proteins Electrophoresis techniques	
(2)	Immunochemical techniques Review of routine lab test.	2 nd week
(3)	Hematology	
(4)	Isoenzymes Acetylcholinesterase and Cholinesterase -LDH isozymes Creatine kinase.	4 th week
(5)	Isoenzymes Alanine and Aspartate Aminotransferase Amylase Gamma glutamyl transferase	
(6) First examination	Isoenzymes. Lipase-Colipase Acid/alkaline phosphatases	
(7)	Liver function Laboratory diagnosis of liver disease Jaundice and bilirubin, Hepatitis.	
(8)	Renal function Laboratory diagnosis of renal disease	8 th week

(9)	Lipid Metabolism Lipoproteins	
(10)	Triglycerides and Cholesterol Hypercholesterolemia -Atherosclerosis -Hyperlipoproteinemia	10 th week
(11) Second examination	Carbohydrates chemistry Carbohydrates intolerance -Diabetes Mellitus.	
(12)	Molecular Endocrinology Hormones.	
(13)	Hypothalamus and pituitary gland - Thyroid function Steroids -Catecholamines	13 th week
(14)	Pregnancy & birth	
(15)	Tumor markers.	
(16)	Final Examination	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books

Clinical Biochemistry: an Illustrated color text, by Allan Gaw, Robert Cowan, Denis O'Reilly, and Michael Stewart Edinburgh: Churchill Livingstone,

Clinical Chemistry, by William Marshall and Stephan Bangert, Edinburgh: Mosby,