



## Course Book

<b>Course Description</b>	This course aims to provide comprehensive theoretical knowledge in clinical chemistry including kidney, liver and limits for all chemical tests, diagnosis and disease treatment and advanced practical training in this diverse field.				
<b>Course objectives</b>	<p>Upon completion of the course students will</p> <ol style="list-style-type: none"> <li>1. Have advanced knowledge on the methodology of clinical chemistry.</li> <li>2. Be able to understand the synthesis of laboratory kits.</li> <li>3. Have advanced skills in blood treatment, analysis and disease diagnosis.</li> </ol>				
<b>Student's obligation</b>	<ol style="list-style-type: none"> <li>1. The student attention in all theoretical and practical lectures in academic year.</li> <li>2- Completion of all tests.</li> <li>3- Attendance in exams</li> <li>4. Write or prepare reports.</li> </ol>				
<b>Required Learning Materials</b>	Data show, lab. For practical part				
<b>Evaluation</b>	<b>Task</b>	<b>Weight (Marks)</b>	<b>Due Week</b>	<b>Relevant Learning Outcome</b>	
	Paper Review	1	1		
	Assignments	Homework	0.5	4	
		Class Activity	2	2	
		Report	1	1	
		Seminar	1	1	
		Essay	0	0	
		Project	0	0	
	Quiz	1	4		
	Lab.	2	12		
	Midterm Exam	1	2		
	Final Exam	1	3		
	Total				

<b>Specific learning outcome:</b>	On successful completion of this program, graduates will be able to: Identify, evaluate and apply major theoretical traditions in clinical chemistry studies. Understand how the human body work.	
<b>Course References:</b>	Text book of Clinical Chemistry and Molecular Diagnostics Seventh Edition Carl A . Burits , David E .Bruns	
<b>Course topics (Theory)</b>	<b>Week</b>	<b>Learning Outcome</b>
Introduction, Define the Clinical chemistry, Patient preparation	1	
Serum and plasma, and the differences between them, Blood clotting, Coagulation	2	
Carbohydrates, type of carbohydrates	3	
Diabetes mellitus, Classes of diabetes mellitus disease	4	
Several types of blood glucose tests	5	
Cholesterol, type of cholesterol	6	
Cholesterol Levels, The relation between LDL and HDL	7	
Types of lipid profile test	8	
Kidney Function, Symptoms of Kidney Problems	9	
Kidney problems	10	
Estimated Glomerular Filtration Rate (GFR)	11	
Types of Kidney Function Tests	12	
<b>Practical Topics</b>	<b>Week</b>	<b>Learning Outcome</b>
Spectrophotometer, calibration of the spectrophotometer	1	
Beer lambared law, and application in the clinical chemistry fields	2	
Centrifuge and applications	3	

Taken sample of the blood and how can the separation the plasma of the serum	4	
Blood sugar test	5	
HBA1c test	6	
blood sugar testes in strep	7	
examination	8	
Cholesterols test	9	
Try glycerides test	10	
HDL and LDL test	11	
Kidney function (Urinalysis)	12	

### Questions Example Design

- 1- The white blood cells very important role in ----- system, while the red blood cells involve in transportation of -----.
- 2- In plasma protein, the ratio of the globulin is -----, fibrinogen-----, and albumin-----
- 3- (FBS) is measures blood glucose after haven't eaten for at least ----- hours, while in cholesterol test haven't eaten for at least----- hours.
- 4- The urinalysis test screens of ----- and -----.

Q2// What are the conditions that require creatinine screening

Q3/ Choose the correct answer from the following:

1) The green top tube is containing -----.

A- Sodium heparin    B- EDTA    C- Potassium Oxalate    D- Sodium Citrate.

2) Cholesterol blood test taken after eaten for at least -----.

A- 12 hours    B- 2 hours    C- 8 hours    D- 6 hours

3) The changing the lifestyle to reduce cholesterol level.

A- Losing Wight.    B- Exercise    C- Smoking decreases    D- All of them

**Extra notes:**

**External Evaluator:**

**The outcome of course book evaluation is commonly more explicit and follows the principles and rules in general.**

**Sangar sabah sabir**

**Lecturer**