



Paitaxt Private Technical Institute
Department of Laboratory Disease Analysis

Course Book of clinical chemistry 2
Second Stage/Second semester

Academic Year: 2023-2024

Course Book

1. Course name	<i>Clinical Chemistry 2</i>
2. Lecturer in charge	
3. Department/ College	<i>Medical Laboratory Technology Department</i>
4. Contact	
5. Time (in hours) per week	Theory: 2 Practical: 2
6. Office hours	4 hour during the week
7. Course code	
8. Teacher's academic profile	1. B.Sc. degree in chemistry science Department /Musil University19951996 2. M.Sc. in chemistry science Department/Sutchu-imam University /Turkey 2013. 3. Lecturer in Erbil Medical Laboratory Technique- Hawler Polytechnic.
9. Keywords	<i>Diabetes mellitus, lever function, kidney function</i>
10. Course overview: <i>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..</i>	
11. Objective of the lesson: Upon completion of the course students will 1. Have advanced knowledge on the methodology of clinical chemistry. 2. Be able to understand the synthesis of laboratory kits. 3. Have advanced skills in blood treatment, analysis and disease diagnosis.	
12. Student's obligation 1-The student attention in all theoretical and practical lectures in academic year. 2- Completion of all tests. 3- Attendance in exams 4. Write or prepare reports.	
13. Forms of teaching <i>Lecture –Main aim-highlight the problem, make sure students understand information, stimulate interest to the subject. Dialogue form of classroom work on one of the topics Use of power point presentations, boarding, conferences.</i> <i>Practice – working out skills on the basis of theoretic knowledge.</i>	

14. Student learning outcome:

- *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.*

15. Course Reading List and References:

□ Text book of Clinical Chemistry and Molecular Diagnostics Seventh Edition Carl A . Burits , David E .Bruns

16. The Topics: Clinical chemistry syllabus (Theory)

weeks	Subjects
1	Body fluid and electrolyte, Intracellular fluid compartment
2	Extracellular fluid compartment, Electrolytes
3	Electrolytes are in inside and outside of the cell
4	Methods of distribution of the electrolytes inside and outside of the cells
5	Electrolyte function of Sodium
6	Electrolyte function of Potassium
7	Electrolyte function of Bicarbonate CO ₂
8	Electrolyte function of Chloride
9	The Liver
10	liver function tests
11	Bilirubin
12	Direct and indirect bilirubin

Practice

weeks	Subjects
1	Creatinine Test
2	Blood Urea Nitrogen (BUN)
3	examination
4	Electrolyte test (in chemical methods)
5	Electrolyte test (in instrument)
6	liver function tests :Alanine transaminase (ALT) test or(GPT)
7	Aspartate aminotransferase (AST) test or(GOT)
8	Alkaline phosphatase (ALP) test
9	Albumin test
10	Bilirubin test
11	examination
12	Review

17. Student evaluation:					
Allocation of marks					
Student performance	First examination	Final exam	Total annual marks		
Written theoretical test	50%	50%	100%		

18. Examples of exams:

Q1/Writ the differences of the following.

B.urea	Creatinin

Osmtic pressure	Diffusion property

Q2 / Define the following.

1-GOT

2-Alkaline phosphates

3. Filtration:

4-Hypertonic solutions:

5- Hypernatremia:

Q3/ Fill the blanks of the following sentences by suitable words.

1-The blood sugar level is the amount of ----- in the blood, and normally levels stay limits morning to -----mg/dl .

2- Extracellular fluid contain ----- and ----- ions, while intracellular fluid contain ----- and ----- ions.

3-ALT is used by the body to metabolize ----- and its normal value in the blood is -----

4-Diffusion methods depending to transferring molecules and ions from-----
- to----- .