



A- COURSE TITLE, CODE, ACADEMIC YEAR:

Clinical Biochemistry 1 (MLT 312) 1437-1438 H

B- COURSE INFORMATION:

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT-312	Clinical Biochemistry (1)	3	2	1	6th	MLT-311
Course Coordinator		Extension		Email Address		
Dr. Walaa Mohammedsaeed		3755		wmohammedsaeed@taibahu.edu.sa		

C- COURSE DESCRIPTION:

By the end of this course, the students have to improve his knowledge about the diabetes mellitus and abnormalities correlates, plasma protein and protein electrophoresis, lipoproteins, enzymes, tumor markers, acid-base balance and acid-base imbalance. The student should be able to use the equipment in the laboratory to get accurate results enable him easily interpret the results of the parameters in the laboratory.

D- COURSE OBJECTIVES:

1. Discussing abnormal blood glucose levels and diabetes complications.
2. State the classification of, diabetes types, enzymes and tumor markers.
3. Defining plasma protein parts according to electrophoresis separations.
4. Using different principles and techniques for testing analytes.
5. Arranging the lipoprotein classes, function and relation to disorders.
6. Predicting the laboratory findings related to enzymes and hormonal disorders.
7. Discussing the normal and abnormal blood homeostasis.

E- THEORY TOPICS:

Week	Theory Topic	Contact Hours
1	Abnormal blood glucose levels	2
2	Diabetes Mellitus (DM) and complications	2
3	Plasma proteins	2
4	Plasma Lipoproteins	2
5	Lipoproteins and disease correlations	2
6	Introduction to Clinical Enzymology	2
7	ALP, ACP	2
8	AST, ALT	2
9	CK, LDH	2



10	α-amylase, lipase	2
11	Enzymes profile	2
12	Tumor markers	2
13	Acid-base balance	2
14	Acid-base disorders	2
15	Revision	2

F- PRACTICAL SESSIONS:		
Week	Practical Session	Contact Hours
1	Estimation of different glucose levels	2
2	Estimation of fasting & 2HPP	2
3	Determination of albumin	2
4	Determination of total protein	2
5	Determination of serum cholesterol & triglyceride	2
6	Determination of HDL-cholesterol & LDL-cholesterol	2
7	Determination of plasma lipid profiles	2
8	Determination of serum alkaline phosphatase	2
9	Determination of serum acid phosphatase	2
10	Determination of Serum AST& Serum ALT	2
11	Determination of serum creatine kinase	2
12	Determination of serum lactate dehydrogenase	2
13	Determination of Serum α-amylase	2
14	Determination of serum lipase	2
15	Revision	2

G- ASSESSMENT TASKS:			
#	Type of assessment task	Week	Total Grades
1	Continuous assessment	Weeks 1-13	10%
2	Midterm examination (written)	Week 8	15%
3	Assignment submission	Week 10	5%
4	Final practical exam	Week 16	30%
5	Final written examination	Week 17-18	40%



H- LEARNING RESOURCES:

1- Required textbook:

1- Michael L. Bishop et.al. (2014) Clinical chemistry principles, procedures, correlations. Lippincott.

2- Essential references:

1- Manye, Zilva (2009) Clinical chemistry; Mosby.

2- Carl A. Burtis; Edward R. Ashwood. (1996) Tietz fundamentals of clinical chemistry. 4th edition. Saunders.

Notes:

- Assignments topics and requirements shall be announced by the end of Week-1, the deadline for submission is 12pm Thursday of Week-10 (each semester).
- Assignments and written assessment tasks must be verified against plagiarism, the maximum acceptable percentage is determined by the department (according to each level).
- Continuous assessments may include quizzes, internet searches, home-works, exercises, class activity, scratch cards, presentations, group work, etc.
- Practical exams may contain hands-on experiments, laboratory work, simulations, or demonstrations.
- Written exams will include multiple-choice questions (MCQ), short essay questions, and long essay questions.