



A- COURSE TITLE, CODE, ACADEMIC YEAR:

Clinical Biochemistry (2) (MLT 411) 1438 – 1439 H

B- COURSE INFORMATION:

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT 411	Clinical Biochemistry (2)	3	2	1	7th	Clinical biochemistry (2) MLT 411
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 renal functions, liver functions, cardiac functions, GIT functions and endocrine functions; and abnormalities correlates with these systems. 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. Discuss physiology of kidney, mechanisms of fluid maintenance & electrolytes balance. And predict laboratory parameters in acute and chronic status.
2. Discuss physiology, synthetic, storage, excretory and detoxifying functions of liver. And predict laboratory findings of jaundice, hepatitis, cirrhosis, cholestasis and gall stone in chronic and acute status.
3. Discuss the lipids and lipoproteins profiles metabolism, disorders and correlation with cardiac abnormalities.
4. Recognize the correlation of troponin and myoglobin with myocardial infarction.
5. Discuss the malabsorption, lactose Intolerance and Occult Blood to assess GIT system, and assess pancreatic function.
6. Discuss classification and function of hormones and regulation assessing endocrine systems in health and diseases.
7. Use the different principles and techniques for testing of analytes.

E- THEORY TOPICS:

Week	Theory Topic	Contact Hours
1	Uses of Biochemical Tests & Units of Measure	2
2	Urinary System Function	2
3	GFR & Clearance of substance	2



4	NPN Substances	2
5	Renal Diseases	2
6	Evaluation of Renal Function	2
7	Liver Functions & Jaundice	2
8	Liver Diseases	2
9	Laboratory Diagnosis of Myocardial Infarction	2
10	Troponin & Myoglobin as Markers for MI	2
11	Malabsorption, Lactose Intolerance & Occult Blood	2
12	Glucose Tolerance Curves	2
13	Evaluation of Endocrine system function	2
14	Revision	2

F- PRACTICAL SESSIONS:

Week	Practical Session	Contact Hours
1	Creatinine clearance	2
2	Microalbumin & Cystatin C	2
3	Renal Function Test 1	2
4	Renal Function Test 2	2
5	Liver Function Test 1	2
6	Liver Function Test 2	2
7	GTT Curves	2
8	GTT Curves	2
9	HbA1c	2
10	Cardiac markers (Enzymes)	2
11	Cardiac Markers (Troponin & Myoglobin)	2
12	Hormonal Assay	2
13	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 15	30%
5	Final written examination	Week 16-17	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.