TOROS ÜNİVERSİTESİ

Vocatıonal School
Medıcal Laboratory Techniques

Course Information

CLINICAL BIOCHEMISTRY I					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
TLT219	Fall	2	2	3	4

Prerequisites and co-requisites	
Language of instruction	Turkish
Type	Required
Level of Course	Associate
Lecturer	Lec. Meltem GÜNGÖR
Mode of Delivery	Face to Face
Suggested Subject	
Professional practise (internship)	None
Objectives of the Course	Course aim is that students learn definition, aim, significans of clinical biochemistry, work-flow, laboratory safety? quality control in clinical laboratory, principles and significans of analytical procedures and how to choose them and earn the ability of performing and interpreting clinical laboratory analyses.
Contents of the Course	Introduction to clinical biochemistry, Work-flow in clinical laboratory, Solutions, calculation of solution concentrations, buffer solutions, fluid-electrolyte metabolism, acid-base balance, Fluid-electrolyte metabolism (determination of Na, K, Cl, Mg) and tests for acid-base balance (blood gases), blood counts, analysis of urine, Techniques in clinical laboratory, Laboratory instruments and techniques, Proteins and tests for protein metabolism. Tests related to gastrointestinal system function, Tests for bone metabolism, Monitoring of therapeutic drug levels, Tumor markers. Clinical enzymology, Tests related to liver function, Lipids and tests for lipid metabolism. Tests for cardiac function, Nonprotein nitrogen and renal functions. Tests for urogenital system, Analyses of body fluids, Protein metabolism, clinical enzymology and tests for carbohydrate metabolism, Quality management in clinical laboratory

Learning Outcomes of Course

#	Learning Outcomes
1	Students have theoretical and practical knowledge in clinical laboratory structure, function and the content.
2	They know and apply knowledge of the ways to access this area.
3	Students gain adequacy of advanced tehnologies in the field of clinical biochemistry.
4	Using their advanced knowledge they can collaborate and ready to be a member of their own professional groups

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Introduction to clinical biochemistry	Lecture Experiment Drill and Practice
2	Solutions, calculation of solution concentrations, buffer solutions, fluid-electrolyte metabolism, acid-base balance.	Lecture Experiment Drill and Practice
3	Techniques in clinical laboratory	Lecture Experiment Drill and Practice
4	Proteins and tests for protein metabolism	Lecture Experiment Drill and Practice

5	Tests for bone metabolism	Lecture Experiment Drill and Practice
6	Tumor markers. Clinical enzymology.	Lecture Experiment Drill and Practice
7	Tests related to liver function	Lecture Experiment Drill and Practice
8	Mid-term exam	
9	Lipids and tests for lipid metabolism	Lecture Experiment Drill and Practice
10	Nonprotein nitrogen and renal functions.	Lecture Experiment Drill and Practice
11	Analyses of body fluids.	Lecture Experiment Drill and Practice
12	Quality management in clinical laboratory.	Lecture Experiment Drill and Practice
13	Laboratory errors	Lecture Experiment Drill and Practice
14	general review	Lecture Experiment Drill and Practice
15	Final Exam	
16		

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	Lippincott Biyokimya (P.C.Champe-R.A.Harvey-Türkçe çeviri)		
2	Clinical Chemistry /Lawrence A. Kaplan, Amadeo J. Pesce)		
3	ietz Klinik Kimyada Temel İlkeler (Carl. A. Burtis, Edward R. Ashwood-Türkçe Çeviri)		
4	Lehninger Principles of Biochemistry (David L. Nelson, Michael M. Cox-Türkçe çeviri)		

Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Students have theoretical and practical knowledge in clinical laboratory structure, function and the content.	1,5,6,7,8,9,10,12	1,2
2	They know and apply knowledge of the ways to access this area.	1,2,4,5,6,7,8,9,11,12	1,2
3	Students gain adequacy of advanced tehnologies in the field of clinical biochemistry.	1,2,3,4,5,6,9,10,12,13	1,2
4	Using their advanced knowledge they can collaborate and ready to be a member of their own professional groups	1,2,3,4,5,6,7,8,9,10,12	1,2

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	4	56
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	8	8
8	Midterm Exam	1	1	1
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	12	12
16	Final Exam	1	1	1
				120