Graduate School of Health Sciences / Cardiovascular Perfusion M.S

2023 - 2024 Academic Year

CIRCULATORY SYSTEM BIOCHEMISTRY

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
CIRCULATORY SYSTEM BIOCHEMISTRY	PRFY1135670	Fall Semester	2+0	2	6

Prerequisites Courses	
Recommended Elective Courses	
Language of Instruction	Turkish
Course Level	Second Cycle (Master's Degree)
Course Type	Elective
Course Coordinator	Prof.Dr. Neslin EMEKLİ
Name of Lecturer(s)	Prof.Dr. Neslin EMEKLİ
Assistant(s)	
Aim	To teach the structural features of blood, blood plasma, serum and blood cells structure and funding.
Course Content	This course contains; 1-Structure and characteristics of blood,2-Structure and functions of erythrocytes / hemoglobin,3-Leucocyte structure and functions,4-Platelet structure and functions,5-Blood clotting and fibrinolysis,6-Biochemical mechanism of anemia in various states.,7-Lipoprotein metabolism,8-Hyperlipidemia and atherosclerosis biochemistry,9-Cardiac damage and markers,10-Serum lipids,11-Relationship between cholesterol and atherosclerosis,12-Functions and Metabolism of Thyroid Hormones,13-Functions and metabolism of pancreatic hormones,14-Kidney function tests / Urine.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
At the end of this course students	10, 11, 16, 19, 6, 9	A, D, E
1-Learn the importance and tasks of blood plasmas and blood cells.	10, 11, 16, 19, 6, 9	A, D, E
1.1.Describe the cellular properties and functions of the erythrocytes.	10, 11, 16, 19, 6, 9	A, D, E
1.4.Learn the function and structure of leucocyte	10, 11, 16, 19, 6, 9	A, D, E
1.5.Understand the importance of vitamins in anemia and health	10, 11, 16, 19, 6, 9	A, D, E
2.will be able to evaluate haemostasis biochemistry in terms of bleeding and thrombus.	10, 11, 16, 19, 6, 9	A, D, E
2.1.Understand the importance of vascular structure in hemostasis.	10, 11, 16, 19, 6, 9	A, D, E
2.2.Describe the relationship of platelets and clotting proteins in hemostasis.	10, 11, 16, 19, 6, 9	A, D, E
2.3.Experience hemodynamic evaluation of thrombocytes and clotting proteins in the laboratory.	10, 11, 16, 19, 6, 9	A, D, E
2.4.Associates the fibrinolytic system with other parameters of hemostasis.	10, 11, 16, 19, 6, 9	A, D, E
3-Discuss the interaction of hormone structure and action mechanisms with target cell associations.	10, 11, 16, 19, 6, 9	A, D, E
4-Discuss the importance of atherosclerosis and hyperlipidemia.	10, 11, 16, 19, 6, 9	A, D, E
4.1.Relation between atherosclerosis and hyperlipidemia.	10, 11, 16, 19, 6, 9	A, D, E
4.4.Understand the mechanisms of atherosclerosis, hyperlipidemia and thrombus association.	10, 11, 16, 19, 6, 9	A, D, E
5.Will be able to analyze the biochemistry of kidney and urine biochemistry.	10, 11, 16, 19, 6, 9	A, D, E
1.2. Decribe the relationship of Eritrocytes and hemoglobin	10, 11, 16, 19, 6, 9	A, D, E
1.3. Making measurements and interprets erythrocytes and hemoglobin in the laboratuary	10, 11, 16, 19, 6, 9	A, D, E
3.1. Learn the mechanism of action of steroid hormones.	10, 11, 16, 19, 6, 9	A, D, E
3.2. Learn the mechanism of action the adrenal hormones and target cells.	10, 11, 16, 19, 6, 9	A, D, E
3.3. Learn the mechanisms of action of thyroid and parathyroid hormones.	10, 11, 16, 19, 6, 9	A, D, E
3.4. Explains the mechanism of action of pancreatic hormones.	10, 11, 16, 19, 6, 9	A, D, E
3.5. Learn the effects and properties of catecholamines.	10, 11, 16, 19, 6, 9	A, D, E
4.2. Interprets hyperlipidemia and lipoproteins.	10, 11, 16, 19, 6, 9	A, D, E
4.3. Get the lab evaluation of hyperlipidemia.	10, 11, 16, 19, 6, 9	A, D, E
5.1. Define how biochemical measurements of renal function can be made.	10, 11, 16, 19, 6, 9	A, D, E
5.2. learn the activity of the kidney in the acid base balance.	10, 11, 16, 19, 6, 9	A, D, E

Teaching Methods	10: Discussion Method, 11: Demonstration Method, 16: Question - Answer Technique, 19: Brainstorming Technique, 6: Experiential Learning, 9: Lecture Method
Assessment Methods	A: Traditional Written Exam, D: Oral Exam, E: Homework

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	1-Structure and characteristics of blood	1 numaralı kaynak
2	2-Structure and functions of erythrocytes / hemoglobin	1 numaralı kaynak
3	3-Leucocyte structure and functions	1 numaralı kaynak
4	4-Platelet structure and functions	1 numaralı kaynak
5	5-Blood clotting and fibrinolysis	1 numaralı kaynak
6	6-Biochemical mechanism of anemia in various states.	1 numaralı kaynak
7	7-Lipoprotein metabolism	1 numaralı kaynak
8	8-Hyperlipidemia and atherosclerosis biochemistry	1 numaralı kaynak
9	9-Cardiac damage and markers	1 numaralı kaynak
10	10-Serum lipids	1 numaralı kaynak
11	11-Relationship between cholesterol and atherosclerosis	1 numaralı kaynak
12	12-Functions and Metabolism of Thyroid Hormones	1 numaralı kaynak
13	13-Functions and metabolism of pancreatic hormones	1 numaralı kaynak
14	14-Kidney function tests / Urine	1 numaralı kaynak

Evaluation Methods	**Weight(%)**
Midterm Exam	50

General Exam	50

Resources
1) The books of Prof.Dr. Nesrin Emekli and Doç. Dr. Türkan Yiğitbaşı Other books on biochemistry