Graduate School of Health Sciences / Cardiovascular Perfusion M.S

2023 - 2024 Academic Year

CIRCULATORY SYSTEM BIOPHYSICS

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
CIRCULATORY SYSTEM BIOPHYSICS	PRFY1231150	Spring 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. Halil TÜRKOĞLU
Name of Lecturer(s)	Prof.Dr. Halil TÜRKOĞLU
Assistant(s)	
Aim	Understanding system mechanics, understanding the factors related to the general properties of fluids, learning the concepts of elasticity and surface tension, understanding the basic principles of perfusion, learning the laws of physics valid in perfusion.
Course Content	This course contains; General properties of fluids,Blood as a fluid and its properties,Factors affecting flow,Concept of resistance in flow,Circulatory system as flow system,General characteristics of veins,Laplace's law,Concept of surface tension,Working principles of artificial perfusion systems,General characteristics of living organ perfusion systems,External factors affecting perfusion,Techniques for recording and analyzing perfusion data,Techniques used in signal analysis.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
	10, 16, 6, 9	E
	10, 16, 6, 9	E
	10, 16, 6, 9	E
	16, 6, 9	E

Teaching Methods	10: Discussion Method, 16: Question - Answer Technique, 6: Experiential Learning, 9: Lecture Method
Assessment Methods	E: Homework

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	General properties of fluids	
2	Blood as a fluid and its properties	
3	Factors affecting flow	
4	Concept of resistance in flow	
5	Circulatory system as flow system	
6	General characteristics of veins	
7	Laplace's law	
8	Concept of surface tension	
9	Working principles of artificial perfusion systems	
10	General characteristics of living organ perfusion systems	
11	External factors affecting perfusion	
12	Techniques for recording and analyzing perfusion data	
13	Techniques used in signal analysis	

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

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