

# BIOPHYSICS

1	Course Title:	BIOPHYSICS	
2	Course Code:	FTR1007	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. Engin Sağdılek	
15	Course Lecturers:	Yok	
16	Contact information of the Course Coordinator:	esagdilek@uludag.edu.tr BUÜ Tıp Fak Biyofizik AD Tel: 54045	
17	Website:		
18	Objective of the Course:	The main aim of the course is to teach the students about the mechanics, electricity, magnetism and optics of physics. To establish the relationship between the basic fields of physics and biology.	
19	Contribution of the Course to Professional Development:	Students who master the physics-biology relationship will be more competent professionally.	
20	Learning Outcomes:		
		1	Gains knowledge of the subject and laws of mechanics.
		2	Understands the basic principles of electricity and magnetism.
		3	Explains the basic properties of light.
		4	Be aware of the importance and features of physics in human life.
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21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	What is biophysics? Why is physical science important in physical therapy?		
2	Measurement and unit systems		
3	Vector quantities and operations with vectors		
4	Biomechanics and basic principles		

5	Force, moment, mass, weight, balance concepts	
6	Simple machines and their examples in living things	
7	Motion, velocity, acceleration, momentum	
8	Basic principles of work, power, energy and thermodynamics	
9	Mechanical properties of matter	
10	Properties of liquids and gases	
11	Fluid mechanics	
12	Electricity and magnetism	
13	General properties of bioelectric potentials	
14	Biological signals	

22	Textbooks, References and/or Other Materials:	<p>1. Herman IP. Physics of the Human Body. Springer; 2006.</p> <p>2. Pehlivan F. Biyofizik. 2. baskı. Hacettepe-TAŞ: 2004.</p> <p>3. Çelebi G. Biyomedikal Fizik. 4. Baskı. İzmir; Barış Yayınları: 2008.</p> <p>4. Serway RA. Physics: For Scientists &amp; Engineers. Saunders; 1992.</p> <p>5. Waite L, Fine J. Applied Biofluid Mechanics. McGraw-Hill; 2004.</p>
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Activities		Number	Duration (hour)	Total Work Load (hour)
<b>TERM LEARNING ACTIVITIES</b>		<b>NUMBER</b>	<b>WEIGHT</b>	
Practicals/Labs		0	0.00	0.00
Self study and preparation		14	2.00	28.00
Homeworks		0	0.00	0.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		1	2.00	2.00
Contribution of Term (Year) Learning Activities to		14	2.00	28.00
Others		1	2.00	2.00
Final Exams		1	2.00	2.00
Contribution of Final Exam to Success Grade		1	2.00	2.00
Total Work Load				88.00
Total work load/ 30 hr				2.93
ECTS Credit of the Course				3.00

		Homework
24	<b>ECTS / WORK LOAD TABLE</b>	

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	3	3	0	0	0	3	0	0	0	3	2	0	0	0	0
ÖK2	0	3	3	0	0	0	3	0	0	0	3	2	0	0	0	0
ÖK3	0	3	3	0	0	0	3	0	0	0	2	2	0	0	0	0

ÖK4	0	4	3	0	0	0	3	0	0	0	3	2	0	0	0	0
ÖK5	0	4	4	0	0	0	4	0	0	0	3	2	0	0	0	0
LO: Learning Objectives    PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			