
	UNIVERSITY OF BANJA LUKA FACULTY OF MEDICINE				
	UNDERGRADUATE STUDIES				
	Study Programme of	MEDICINE			
Course Unit Name		Medical physics			
Type of Course Unit		General Education			
Course Unit Code		Course Unit Status	Semester	Class Workload	Number of ECTS
		COMPULSORY	I	2L+1P (45)	3
Members of Staff		Assistant professor Goran Kolarević, dr. sc Dražan Jaroš			
Eligibility Requirements					Form of Requirements
There are no requirements for registration, attendance and examination					
Goals of the Course Unit					
Acquisition of knowledge on biophysical basics of physical appearances and physical and chemical processes that take place in biological systems, which is required for further study.					
Learning Outcomes (knowledge acquired):					
The student acquires knowledge in mechanics, molecular physics, thermodynamics, electricity, magnetism, optics, atomic and nuclear physics applied to biological systems. After completing the course unit, students will be capable of solving medical and biophysical problems. They will be able to solve problems which are applied to biological systems, and ultimately measure the basic physical parameters of biological systems.					
Contents of the Course Unit:					
The human organism as a system. Biomechanics of the human locomotory system Biomechanics of the cardiovascular system Thermodynamics of the human organism Transport processes in the human organism Bioelectrical processes in the human organism Bioacoustics Light in medicine – physics of the eye and its application Biomagnetism Atomic physics Nuclear physics and nuclear medicine					
Teaching Methods:					
Theoretical classes and laboratory practicals. Seminars and office hours					
Literature:					
1. Paul Davidovits. Physics in Biology and Medicine 5th Edition. Academic Press, 2018. 2. Irving P. Herman. Physics of the Human Body. Springer, 2016. 3. Muhammed Maqbool. An Introduction to Medical Physics. Springer, 2017. 4. J Štrajčić, D Mirjanić. Biofizičke osnove tehnike i medicine. ANURS, Banja Luka, 2012. 5. D Ristanović, J Simonović, J Vuković, R Radovanović. Biofizika. Medicinska knjiga Beograd, 1981. 6. S Stanković. Fizika ljudskog organizma. PMF Novi Sad, 2006. 7. N. Milosevic, M.Platisa , D.Zikic , N.Rajkovic, Biophysics in Radiology and Nuclear Medicine, Libri Medicorum, Medicinski fakultet Univerziteta u Beogradu, CIBID, Beograd, 2016.					
Examination Form:					
Pre-Exam Duties		Final Exam		Total Points	
Attendance		10	Oral / Written	50	100
Midterms		40			
Seminar paper					
Note for the Course Unit:					