

1.	Subject	<b>BIOPHYSICS WITH ERGONOMICS</b>			
2.	Code	DA – 123			
3.	Study program:	Three-year professional studies for graduate obstetricians			
4.	Conducted by	Department of Medical Physics Medical faculty			
5.	Degree of education (first or second cycle)	First cycle			
6.	Academic year/semester	First/II	7.	Credits	1.5
8.	Professor	Prof. Tomislav Stankovski			
9.	Prerequisite	None			
10.	Goals	<ul style="list-style-type: none"> <li>-Learn the basic physical laws which are used in medicine</li> <li>-Learn the basic laws of movement, acoustics, pressure and heat, electrical and magnetic characteristics, and the use of ultrasound.</li> <li>-Understand the basic physical phenomena in modern medical diagnostic, including the methods, such as: echocardiogram, Doppler ultrasound, endoscope, refractometer, polarizer, lasers, thermography, NIRS imaging, x-ray scan, mammography, computed tomography, SPECT, PET scan, electrophysiology (EKG, EEG, EMG), magnetic resonance</li> <li>-understand the basic physical phenomena in ergonomics</li> </ul>			
11.	Content summary:	<p>Theoretical lessons(30 classes):</p> <ul style="list-style-type: none"> <li>-Introduction to Biophysics, systems theory</li> <li>-Biomechanics</li> <li>-Ergonomics</li> <li>-Work and work routine</li> <li>-Bioacoustics</li> <li>-Optics and optical phenomena</li> <li>-Radiation therapy</li> <li>-Thermodynamics</li> <li>-Electrostatistics</li> <li>-Electro-magnetic occurrences</li> </ul> <p>Practical lessons (15 classes):</p> <ul style="list-style-type: none"> <li>-Optical methods</li> <li>-Sound methods</li> <li>-Electrical methods</li> <li>-Work and ergonomics</li> </ul>			
12.	Teaching methods:	Interactive lessons, practical lessons, seminars			
13.	Total classes:	80			
14.	Organization	35 theoretical lessons, practical lessons and seminars 45 learning at home			
15.	Types of teaching activities	15.1	Lessons: theoretical classes	20	
		15.2	Practical lessons, Seminars	15	
16.	Other types of activities	16.1	Practice	/	
		16.2	Self-supporting practice		

		16.3	Learning at home	45
17.	Knowledge assesment	Points		
	17.1-2	Mid-term exams/Final exam	Min.-max. 54 - 90	
	17.3	Paper/project (oral presentation)	Min.-max. No	
	17.4	Active participation	<b>Min. – max. 6 - 10</b>	
18.	Grading criterion (points/grades)	Up to 59 points	5 (five) F	
		From 60 to 68 points	6 (six) E	
		From 69 to 76 points	7 (seven) D	
		From 77 to 84 points	8 (eight) C	
		From 85 to 92 points	9 (nine) B	
		From 93 to 100 points	10 (ten) A	
19.	Requirements for obtaining a signature and attending the final examination	<p>To obtain a signature, the student must gain minimum points from attending and participating in the theoretical and practical lessons.</p> <p>The final grade for the subject is formed according to the table for grading, and is based on the sum of the points from all the activities.</p>		
20.	Language	Macedonian		
21.	Method of evaluating the quality of the lessons	Anonymous student evaluation of the subject, the professors and the collaborators who hold the lessons.		
22.	Literature			
	22.1	Mandatory literature		
		1.	T.Stankovski. Biophysics, Internal Medicine Handbook, Medical Faculty, Skopje, 2015.	
	22.2	Additional literature		
		1.	N.Andonovska. Biophysics, University Ss. Cyril and Methodius, Skopje, 2005 D. Gerashanovski. Biophysics, Handbook or CD version, Department of Physics, 2006	