

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Common		
Type and level of studies		Doctoral studies		
The name of the course		Medical Physics		
Lecturer (for lectures)		Ristić S. Goran		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS	10	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	Introduction to the use of ionizing and non-ionizing radiation in medicine, as well as the principle of basic methods of medical diagnostics.			
Course outcomes	Knowledge of diagnostic and therapeutic methods in medicine based on ionizing and non-ionizing radiation, as well as devices used for this purpose.			
Course outline				
Theoretical teaching	Medical diagnostics. X-rays and X-ray characteristics and their application in medicine. Radiography and fluoroscopy, mammography, X-ray, computer tomography. Digital Flat Panel X-ray Appliances. The production and the characteristics of ultrasound and its application in medicine. Principle of magnetic resonance, and its application in medical diagnostics. Use of radioisotopes in medical diagnostics and radiotherapy. PET diagnostics. Electrocardiography, Laser application in medicine. Application of radiofrequency and optical radiation in medical diagnostics and therapy. Radiotherapy devices.			
Practical teaching (exercises, OFE, study and research)				
Textbooks/references				
1	G. S. Ristic, Medical Physics, Script, Faculty of Electrical Engineering Nis (in Serbian)			
2				
3				
4				
5				
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
3	0	0	0	0
Teaching methods	Presentations on specific topics, seminars and projects			
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures			Written exam	
Exercises			Oral exam	70
Colloquia				
Projects		30		