

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 and Bioelectronic Measurement Technique		
Lecturer (for lectures)		Simić M. Milan		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS		10	Course status (obligatory/elective)	Elective
Prerequisites	No			
Course objectives	Systematization and acquiring of knowledge from the field of medical and bioelectronic measurement technique.			
Course outcomes	Students ability to design medical and bioelectrical measurement instrumentation, as for practical application of this specific measurement devices.			
Course outline				
Theoretical teaching	Introduction to biomedical measurement instrumentation. Sources of bioelectric potentials. Biopotential amplifiers and signal processing. Electrostimulation. ECG, EEG, EMG, ERG. Ultrasonic medical devices. Electrotherapy. Defibrillators. Pacemakers. Surgical instrumentation. Instruments for the making of medical images based on electromagnetic radiation and on the basis of nuclear magnetic resonance.			
Practical teaching (exercises, OFE, study and research)				
Textbooks/references				
1	David Prutchi, Micahel Norris, "Design and Development of Medical Electronic Instrumentation", JOHN WILEY & SONS, New Jersey, 2005.			
2	Joseph Carr, John Brown, "Introduction to Biomedical Equipment Technology", Third Edition, PRENTICE HALL, New Jersey, 1998.			
3	D.Jennings, A.Flint, B.C.H.Turton and L.D.M.Nokes, "Introduction to Medical Electronics Application", EDWARD ARNOLD, London, 1995.			
4	John G. Webster, "Medical Instrumentation Application and Design, Second Edition", JOHN WILEY & SONS, 1995.			
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	Systematization of relevant publications in this field, analysis of selected chapters, making of seminar paper and participation in realization of project tasks. In specific areas within the defined project tasks students should take part in the process of preparing research papers for publishing in the conferences and journals.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures	0	Written exam		30
Exercises	0	Oral exam		30
Colloquia	0			
Projects	40			