Specification for the book of courses

Study program	Communications and Information Technologies		
Module	Communications and Information Processing		
Type and level of studies	Master studies		
The name of the course	Telecommunications and information technologies in telemedicine		
Lecturer (for lectures)	Đorđević T. Goran, Milović M. Daniela, Milić N. Dejan		
Lecturer/associate (for exercises)	Cvetković M. Aleksandra		
Lecturer/associate (for OFE)			
Number of ECTS	4	**Course status (obligatory/elective)**	Elective
Prerequisites			
Course objectives	Acquiring knowledge in the field of application of telecommunication and information technologies applying in Telemedicine.		
Course outcomes	Students will learn to model wireless networks "on" and "in" the human body and will know which error correction codes can be applied in these channels. Students will be able to realize data transmission between sensors related to humans and gates. They will be introduced to the basic standards in the digitization of medical signals. Students will be informed of which basic statistical algorithms are used to make decisions about patients' condition based on available data in the data center.		
Course outline			
Theoretical teaching	Development of Telemedicine. Medical signals and their digitization. Standards for communication, storage and use of digital images in Medicine. Systems for archiving and exchange of medical data. External and internal wireless networks in the context of the human body. Internet intelligent facilities in the health care system. Communication techniques for the information transmission on a relationship: "sensor-gateway-access network-data center" - channel modeling, modulation and demodulation techniques, error correction codes, crypto-protection. Safety of medical data. Basic statistical algorithms for data analysis and decision in data storage centers.		
Practical teaching (exercises, OFE, study and research	Exercises will be organized from all method units from lectures.		
Textbooks/references			
1	I. Reljin, A. Gavrovska, Telemedicine, Akademsak misao, Belgrade, 2013.		
2	J. Wang, Q. Wang, Body Area Communications: Channel Modeling, Communication Systems, and EMC, John Wiley & Sons, Singapore, 2013.		
3	F. H. P. Fitzek, M. D. Katz, Mobile Clouds: Exploiting Distributed Resources in Wireless, Mobile and Social Networks, Wiley, 2014.		
4			
5			

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	1	0	0	0
Teaching methods	Lectures. Exercises. Consultations.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	5	**Written exam**	20
Exercises	5	**Oral exam**	30
Colloquia	30		
Projects	10		