

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		Satellite Communication Systems		
Lecturer (for lectures)		Pronić-Rančić R. Olivera		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS	10	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	Introduction to the latest developments and research in the field of satellite communications systems.			
Course outcomes	Knowing principles of operation of modern satellite communication systems. Solving practical problems in the field of satellite system designing.			
Course outline				
Theoretical teaching	Configuration of a satellite communications system. Classification of satellites. Satellite orbits. Satellite hardware - satellite subsystems. Satellite link design. Modulation techniques in satellite communication systems. Multiple access techniques (FDMA, TDMA, CDMA). Earth stations. Communication satellites. Satellite telephony. Satellite television. Satellite data communication services. VSAT systems. Satellite navigation systems. GPS, GLONASS, GALILEO. Integration of GPS and geographic information systems. Remote Sensing Satellites. Weather Satellites. Military satellites.			
Practical teaching (exercises, OFE, study and research)				
Textbooks/references				
1	T. Pratt, C. Bostian, J. Allnutt, "Satellite Communications", J.Wiley & Sons, 2003.			
2	A. K. Maini, V. Agrawal, "Satellite technology – principles and applications", Second edition, J.Wiley & Sons, 2011.			
3	G.Taylor, G. Blewitt, "Intelligent Positioning - GIS-GPS Unification", John Wiley & Sons Ltd, 2006.			
4	G. Maral, M. Bousquet, "Satellite Communications Systems – systems, techniques and technology", fifth edition, J.Wiley & Sons, 2009.			
5	D. Minoli, "Innovations in satellite communications and satellite technology", J. Wiley & Sons, Inc., 2015			
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	Lectures. Projects. Consultations.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures		Written exam		
Exercises		Oral exam		50
Colloquia				
Projects	50			