

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Communications and Information Technologies - System Engineering and Radio-Communications		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Broadcasting Systems and Technologies		
Lecturer (for lectures)		Pronić-Rančić R. Olivera, Maleš-Ilić P. Nataša		
Lecturer/associate (for exercises)		Joković J. Jugoslav		
Lecturer/associate (for OFE)		Joković J. Jugoslav		
Number of ECTS	5	Course status (obligatory/elective)	Elective	
Prerequisites				
Course objectives	Introduction to basic principles of production, transmission and reception of TV signals in broadcasting systems.			
Course outcomes	Knowledge of the broadcasting systems architecture. Understanding of standards for satellite, cable and terrestrial transmission, as well as network planning for TV signal distribution. Knowledge of the basic technical details and functionality of equipment for TV signals production, transmission and reception.			
Course outline				
Theoretical teaching	Broadcasting systems – types, frequency ranges, DTV system architecture. TV studio production – generating TV signal, additional services, TS, interfaces, TV programs multiplexing. Digital TV transmission (DVB) – satellite/cable/terrestrial - primary and secondary distribution, microwave links, transmitter architecture, parameters of TV transmission. Terrestrial broadcasting network planning - MFN and SFN, gap fillers, calculation of EM field level and service area of digital TV transmitter. Reception of digital TV signals - receiver architecture, quality of service and measurement of TV signal parameters.			
Practical teaching (exercises, OFE, study and research)	Auditory exercises.			
Textbooks/references				
1	E. P. J. Tozer, Broadcast Engineer's Reference Book, Focal Press, Oxford, 2004.			
2	J.C. Whitaker, Standard Handbook of Broadcast Engineering, McGraw-Hill, NY 2005.			
3	H. Benoit, Digital Television - Satellite, Cable, Terrestrial, IPTV, Mobile TV in the DVB Framework, Focal Press 2008.			
4	U. Reimers, DVB - The Family of International Standards for Digital Video Broadcasting, Springer, 2005.			
5	W. Ficher, Digital Video and Audio Broadcasting Technology, Springer, 2010.			
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	1	1	0	0
Teaching methods	Lectures. Auditory exercises. Laboratory work. Consultations.			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures	10	Written exam		30
Exercises		Oral exam		40
Colloquia	20			
Projects				