

Specification for the book of courses

Study program		Electrical Engineering and Computer Science		
Module		Electron Devices and Microsystems		
Type and level of studies		Undergraduate Academic Studies		
The name of the course		Digital TV Systems and Services		
Lecturer (for lectures)		Marković V. Vera		
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	The course provides fundamental knowledge in the field of digital television, transmission and reproduction of television content to the users. Digital TV technologies are being processed within the DVB standard, focusing on the architecture and design of software for digital TV.			
Course outcomes	Students will be able to analyze devices receiving and reproducing digital TV content. In the context of practical work, students analyze the real set-top box. They will fully understand all of the broadcasting phases, as well as solutions for content reproduction and control of the processing of all components of digital TV content.			
Course outline				
Theoretical teaching	The main advantages and disadvantages of digital transmission; Digital broadcasting and receiving techniques; Standards in DTV - DVB; Digital TV Transmitter Architecture; Architecture of digital TV receivers; Input level; Transceiver Processor; Decoder; Output interfaces; Communication between integrated circuits; Digital TV software; Architecture of TV applications; System integration and practical aspects; Components of DTV receivers; DTV middleware; Convergence in Television and interactivity; Hybrid television; Television over IP; Internet Television and Over-The-Top Services; Current standards.			
Practical teaching (exercises, OFE, study and research)	Practical exercises involve solving problems in areas that are covered by the content of the subject. Laboratory exercises through practical work include the characterization of the receiver and measurement of the digital TV signal transmitter			
Textbooks/references				
1	Benoit, H., Digital Television - Satellite, Cable, Terrestrial, IPTV, Mobile TV in the DVB Framework, Focal Press, 2008			
2	Fischer, W. Digital Video and Audio Broadcasting Technology - A Practical Engineering Guide, Springer-Verlag, 2010. 3. Benoit, H. "Digital Television - Satellite, Cable, Terrestrial, IPTV, Mobile TV in the DVB Framework", Focal Press, 2008			
3	U. Reimers, DVB - The Family of International Standards for Digital Video Broadcasting, Springer, 2005.			
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	1	0	0
Teaching methods	Lectures, exercises, practical work in the laboratory, consultations			
Grade (maximum number of points 100)				
Pre-exam duties	Points	Final exam		Points
Activity during lectures		Written exam		40
Exercises	20	Oral exam		20
Colloquia				
Projects	20			