

## Specification for the book of courses

<b>Study program</b>		Communications and Information Technologies		
<b>Module</b>		Communications and Information Processing		
<b>Type and level of studies</b>		Master studies		
<b>The name of the course</b>		Cognitive Radio		
<b>Lecturer (for lectures)</b>		Nikolić B. Zorica, Milošević D. Nenad		
<b>Lecturer/associate (for exercises)</b>		Panajotović S. Aleksandra		
<b>Lecturer/associate (for OFE)</b>				
<b>Number of ECTS</b>	4	<b>Course status (obligatory/elective)</b>	Elective	
<b>Prerequisites</b>				
<b>Course objectives</b>	Introduce students to the principles of cognitive radio and improvements made by cognitive radio in terms of more efficient use of spectrum and better user experience.			
<b>Course outcomes</b>	Students will be able to understand and implement basic techniques for testing the occupancy of the spectrum, as well as to understand the importance of software radio and cognitive approach in the field of radio technology.			
<b>Course outline</b>				
<b>Theoretical teaching</b>	Evolution to cognitive radio. Basic principles of cognitive radio. An ideal cognitive radio. Structure of cognitive radio. Dynamic use of spectrum in cognitive radio. Multidimensional spectral space. Techniques of spectrum availability analysis in cognitive radio. Techniques for determining and analyzing the location in cognitive radio. Applications of cognitive radio.			
<b>Practical teaching (exercises, OFE, study and research)</b>	Laboratory exercises in the field of testing spectrum occupancy.			
<b>Textbooks/references</b>				
1	X. Fernando, A. Sultana, S. Hussain, L. Zhao, Cooperative Spectrum Sensing and Resource Allocation Strategies in Cognitive Radio Networks, Springer International Publishing, 2019			
2	S. Haykin, P. Setoodeh, Fundamentals of cognitive radio, Wiley, 2017			
3	A. Bagwari, J. Kanti, G. Tomar, Introduction to cognitive radio networks and applications, Chapman and Hall/CRC, 2017			
4				
5				
<b>Number of classes of active education per week during semester/trimester/year</b>				
<b>Lectures</b>	<b>Exercises</b>	<b>OFE</b>	<b>Study and research work</b>	<b>Other classes</b>
2	1	0	0	0
<b>Teaching methods</b>	Lectures, calculus and laboratory exercises, colloquiums and exams.			
<b>Grade (maximum number of points 100)</b>				
<b>Pre-exam duties</b>	<b>Points</b>	<b>Final exam</b>	<b>Points</b>	
<b>Activity during lectures</b>	10	<b>Written exam</b>		
<b>Exercises</b>		<b>Oral exam</b>	30	
<b>Colloquia</b>	20			
<b>Projects</b>	40			