

## Specification for the book of courses

<b>Study program</b>		Electrical Engineering and Computer Science		
<b>Module</b>		Common		
<b>Type and level of studies</b>		Doctoral studies		
<b>The name of the course</b>		Digital Communications Over Fading Channel		
<b>Lecturer (for lectures)</b>		Milović M. Daniela		
<b>Lecturer/associate (for exercises)</b>				
<b>Lecturer/associate (for OFE)</b>				
<b>Number of ECTS</b>	10	<b>Course status (obligatory/elective)</b>	Elective	
<b>Prerequisites</b>				
<b>Course objectives</b>	The present course provides basics on digital communications over fading channel and diversity techniques for mitigation of fading effect.			
<b>Course outcomes</b>	Covered topics will train students to find and apply the solutions of engineering problems in digital communication over fading channel. Students will be able to analyze performances of modern wireless communication systems and to estimate its practical implementations.			
<b>Course outline</b>				
<b>Theoretical teaching</b>	Fading Channel Characterization and Modeling. Multipath fading. Log-normal shadowing. Frequency selective and nonselective fading. Flat fading channel modelling. Coherent detection Optimum receivers for fading channels. Diversity techniques for communication over fading channels (EGC, MRC, SC, GSC, T-GSC). MIMO systems. Optimum combining.			
<b>Practical teaching (exercises, OFE, study and research)</b>	Auditory exercises introduce students to fundamental concepts of digital communications over fading channel.			
<b>Textbooks/references</b>				
1	Marvin K. Simon, Mohamed-Slim Alouini, Digital Communications over Fading Channels, Wiley Series in Telecommunications and Signal Processing, Second Edition, 2005.			
2	A. Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill, 1991			
3				
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>
3	0	0	0	0
<b>Teaching methods</b>	Lectures, auditory exercises, homeworks, office hours.			
<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>			<b>Written exam</b>	
<b>Exercises</b>			<b>Oral exam</b>	50
<b>Colloquia</b>				
<b>Projects</b>		50		