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		Free-space Optical Telecommunications		
Lecturer (for lectures)		Milić N. Dejan, Milović M. Daniela		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS	10	**Course status (obligatory/elective)**	Elective	
Prerequisites				
Course objectives	Students will be introduced to details about free-space optical systems in modern optical telecommunications and to the critical review of the methods used in analysis of such systems.			
Course outcomes	Acquired knowledge enables understandig of the modern trends in free-space optical communications, provides a background for estimating a practical usability of such trends, and introduces the students to academic research in the field of optical wireless communications.			
Course outline				
Theoretical teaching	Basics of free-space optical telecommunication technologies. Integration of FSO in optical networks. Long range communications, satellite optical communications. Optical wireless technologies in closed spaces. Coherent and incoherent detection. Characteristics, modulation techniques and propagation efects. Optical components for FSO. Signal processing in optical an electrical domain. Diversity reception with different combining strategies.			
Practical teaching (exercises, OFE, study and research				
Textbooks/references				
1	W. Heinz, Free Space Optics, Sams, 2001.			
2	S. Hranilović, Wireless Optical Communication Systems, New age publishers, 2006			
3	M. Katzman, Laser Satellite Communication, Prentice Hall, New York, 1991			
4	K. Iizuka, Elements of Photonics, Volume II, , John Wiley & Sons 2002			
5	A. Papoulis, Probability, Random Variables and Stochastic Processes, McGraw Hill, 1991			
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	Theory classes, consulatations, study and research work.			
Grade (maximum number of points 100)				
Pre-exam duties		**Points**	**Final exam**	**Points**
Activity during lectures		5	**Written exam**	30
Exercises		15	**Oral exam**	20
Colloquia		30		
Projects				