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	Basics of Optics		
Lecturer (for lectures)	Golubović M. Snežana, Živanović N. Emilija		
Lecturer/associate (for exercises)	Golubović M. Snežana, Živanović N. Emilija		
Lecturer/associate (for OFE)	Živanović N. Emilija		
Number of ECTS	6	**Course status (obligatory/elective)**	Obligatory
Prerequisites			
Course objectives	To introduce the students into basic properties of light and recognize appropriate laws. Acquiring theoretical and practical knowledge necessary to understand the basic idea of geometrical, wave and quantum optics, as well as the principles of optoelectronic device operation.		
Course outcomes	Acquired theoretical and practical knowledge based on basic idea and the physical processes in geometrical, wave and quantum optics. Laws of geometrical optics, flat and spherical mirrors, lenses and optical systems and instruments. Interference, diffraction and polarization of light. Photoelectric and Compton effect. X-rays. The principle of operation of optoelectronic devices.		
Course outline			
Theoretical teaching	Teaching Program Geometrical optics Introducing students to the physical processes based on the laws of geometrical optics (reflection of light - the mirrors, refraction of light - the lens and plane parallel plate , dispersion of light on the optical prism and the principle of optical instruments operation. Wave optics Interference, and light interferometers.Diffraction of light. Polarization of light. Applications. Coherent light and the principle of laser operation (classification and application). Physical items photoelectric effect, Compton effect. X-ray radiation. The principle of operation of optoelectronic devices.		
Practical teaching (exercises, OFE, study and research	Practical exercises contain computer and laboratory exercises connected with above mentioned field of optics.		
Textbooks/references			
1	Raymond A. Srway and John W. Jewett, „Physics for Scientist and Engineers with Modern Physics”, 9th Edition, Brooks/Cole, Cengage Learning, USA, 2014.		
2	Thomas L. Floyd and David M. Buchla, „Electronics Fundamentals: Circuit, Devices and Applications“, 8th Edition, Prentice Hall, Pearson, USA, 2010.		
3	Momcilo M. Pejović, "General course of physics: oscillations, mechanical waves and optics", University of Nis, Faculty of Electronic Engineering, Niš, 1996. (in Serbian)		
4	E. Zivanovic,Laboratory exercises practicum with examples of problems in course "Basics of optics", University of Nis, Faculty of Electronic Engineering, Niš, 2018. (in Serbian)		
5			

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	2	1	0	0
Teaching methods	Lectures, auditory and laboratory exercises, seminars.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	5	**Written exam**	15
Exercises	10	**Oral exam**	15
Colloquia	30		
Projects	25		