Specification for the book of courses

Study program	Electrical Engineering and Computer Science		
Module	Control Systems		
Type and level of studies	Undergraduate Academic Studies		
The name of the course	Mechatronics		
Lecturer (for lectures)	Perić Lj. Staniša, Antić S. Dragan		
Lecturer/associate (for exercises)	Sibinović D. Vladimir		
Lecturer/associate (for OFE)	Sibinović D. Vladimir		
Number of ECTS	6	**Course status (obligatory/elective)**	Obligatory
Prerequisites			
Course objectives	As a multidisciplinary science, mechatronics has found various applications in many areas, especially in automation and production. The aim of the course is to familiarise students with basic components of mechatronic systems and provide them with practical experience in designing simple mechatronic systems.		
Course outcomes	At the end of this course, students will have basic knowledge about the components of mechatronic systems and will be trained in designing simple control structures.		
Course outline			
Theoretical teaching	Introduction to mechatronic systems. System responses and behaviour. Motion dynamics. Sensors in mechatronics. Signal processing. Actuators in pneumatic, hydraulic, mechanical and electrical systems. The concept of modelling of different types of dynamical systems. Feedback concept. Microprocessor and microcontroller systems. Programmable logic controllers. Examples of designing of mechatronic systems. Intelligent systems.		
Practical teaching (exercises, OFE, study and research	Practical work with electric DC motors, RC Servo motors and step motors. Work with motion sensors - encoders, as well as with other sensors used in mechatronic systems. Demonstration of various mechatronic systems with and without feedback.		
Textbooks/references			
1	Robert H. Bishop, "The Mechatronics Handbook", CRC Press, 2002.		
2	Clarence W. De Silva, "Mechatronics: An Integrated Approach", CRC Press, 2005.		
3	Sabri Cetinkunt, "Mechatronics", John Wiley & Sons Inc., 2007.		
4	David G. Alciatore, Michael B. Histand, "Introduction to Mechatronics and Measurement Systems", McGraw-Hill, 2012.		
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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; Practical exercises; Laboratory exercises; Computer exercises; Consultations			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	10	**Written exam**	
Exercises	20	**Oral exam**	40
Colloquia			
Projects	30		