Specification for the book of courses

Study program	Electrical Engineering and Computer Science		
Module	Common		
Type and level of studies	Undergraduate Academic Studies		
The name of the course	Introduction to Engineering		
Lecturer (for lectures)	Petronijević P. Milutin, Jovanović D. Zoran, Milošević D. Nenad		
Lecturer/associate (for exercises)			
Lecturer/associate (for OFE)			
Number of ECTS	4	**Course status (obligatory/elective)**	Obligatory
Prerequisites	None		
Course objectives	Encourage students to study engineering sciences and participate in solving practical problems. Introducing the students with roles of the engineers and engineering approach to solving the problems and projects.		
Course outcomes	Students will gain insight into the actual knowledge from several technical areas that are important for rational use of energy resources, intelligent system control and information transfer.		
Course outline			
Theoretical teaching	Energy resources in the future - renewable and non-renewable sources. Fundamentals of energy conversion. Transmission and efficient use of electricity. Electrical energy application: smart grids, home installations, electric and hybrid vehicles. Importance of automatic control systems for different industrial branches. Fundamentals of the control systems without and with feedback. Basics of modern approach in system control. Mechatronic systems with the basics of robotics. Development and importance of information and communication technologies and systems. Communication system architecture and transmission media. Fundamentals of transmission and processing of information. Examples of modern digital systems: optical, radio, mobile and satellite systems. Application of the Internet and introduction to Internet of Things.		
Practical teaching (exercises, OFE, study and research			
Textbooks/references			
1	G. Rizzoni, J. A. Kearns, "Principles and Applications of Electrical Engineering",McGraw Hill, 2016.		
2	F. M. Vanek, L. D. Albright, "Energy Systems Engineering Evaluation and Implementation", McGraw Hill, NewYork, 2008.		
3	Milić Stojić,Continuous automatic control systems (in Serbian), EF Niš, 2005.		
4	Thomas R. Kurfess, Robotics and Automation Handbook, CRC Press, 2004, ISBN: 0849318041		
5	A. Huurdeman, The Worldwide History of Telecommunications, Wiley, 2003		

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	0	0	0	1
Teaching methods	Lectures with use of Power Point slides, animations and presentation of engineering projects and applications.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures		**Written exam**	
Exercises		**Oral exam**	40
Colloquia	60		
Projects			