Specification for the book of courses

Study program	Control Systems		
Module	Computer Control Systems and Measurement Techniques		
Type and level of studies	Master studies		
The name of the course	Wireless Sensors and Sensor Networks		
Lecturer (for lectures)	Dinčić R. Milan, Denić B. Dragan, Radenković N. Dragan		
Lecturer/associate (for exercises)	Pešić T. Miroljub, Jocić V. Aleksandar		
Lecturer/associate (for OFE)	Pešić T. Miroljub, Jocić V. Aleksandar		
Number of ECTS	5	**Course status (obligatory/elective)**	Elective
Prerequisites			
Course objectives	Basics of working principles of the sensors. Studying techniques for acquisition and data processing using wireless sensors and sensor networks. Getting acquainted with the applications of wireless sensors and sensor networks. Getting acquainted with hardware-software platforms for the realization of wireless sensor networks.		
Course outcomes	Students will acquire the necessary theoretical knowledge about different types of sensors as well as ways of data acquisition using wireless sensors and sensor networks. Students will obtain an insight into the numerous applications of wireless sensors and sensor networks, thus gaining the ability to solve specific problems in practice. Students will gain the ability to realize and use wireless sensor networks on their own.		
Course outline			
Theoretical teaching	Working principles of basic sensor types in wireless sensor networks. Intelligent wireless sensors. Definition, principle of operation and architecture of wireless sensor networks. Data acquisition using wireless sensors and sensor networks. Data processing and compression in wireless sensors and sensor networks. Protocols in wireless sensor networks. Application of wireless sensors and sensor networks in industry, military, construction, medicine, seismology, biology, agrosystems, etc. Hardware-software platform for realization of wireless sensor networks. Connecting wireless sensor networks to IoT systems.		
Practical teaching (exercises, OFE, study and research	Practice, laboratory exercises, realization of projects and seminar tasks		
Textbooks/references			
1	H. Ammari ed., "The Art of Wireless Sensor Networks", Springer, 2014.		
2	R. Budampati, S. Kolavennu, "Industrial Wireless Sensor Networks", Elsevier, 2016.		
3	Robert Faludi, "Building Wireless Sensor Networks", O'Reilly Media, 2010.		
4	Mohammad Matin, "Wireless Sensor Networks-Technology and Applications", In Tech 2012.		
5	A. Forster, "Introduction to Wireless Sensor Networks", Wiley, 2016.		

Number of classes of active education per week during semester/trimester/year

Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	1	1		
Teaching methods	Lectures; Practice; Laboratory exercises; Consultations; Realization of project tasks			

Grade (maximum number of points 100)

Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	5	**Written exam**	25
Exercises	20	**Oral exam**	25
Colloquia	25		
Projects			