

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		Sensors and Actuators		
Lecturer (for lectures)		Vračar M. Ljubomir		
Lecturer/associate (for exercises)				
Lecturer/associate (for OFE)				
Number of ECTS	10	Course status (obligatory/elective)	Elective	
Prerequisites				
Course	Acquiring the knowledge for understanding and application of modern sensors and actuators.			
Course outcomes	Students obtain the in-depth knowledge about operational principles, fabrication and implementation of modern sensors and actuators.			
Course outline				
Theoretical teaching	Classification and terminology of sensors and actuators. Signal processing. Most important sensor types: magnetical, radiation, thermal, mechanical and chemical. Most important actuator types: linear and rotary electromechanical converters, displays, electrical converters. Interface methodologies and circuits. Integration aspects. Manufacturing techniques and material properties. Applications of sensors and actuators.			
Practical teaching (exercises, OFE, study and research)				
Textbooks/references				
1				
2	JACOB FRADEN, "HANDBOOK OF MODERN SENSORS: PHYSICS, DESIGNS, and APPLICATIONS" Third Edition, 2011, Springer-Verlag, In Jon S. Wilson (ed.), "Sensor Technology Handbook" Newnes, Elsevier Inc, 2005			
3				
4				
5				
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	Auditorial teaching, Laboratory exercise, student tutorials			
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures		10	Written exam	
Exercises			Oral exam	60
Colloquia				
Projects		30		