

Study program: Industrial engineering			
Course title: Sensoring Systems			
Professor/assistant: Dejan Blagojevic /Milan Pavlovic			
Type of course: compulsory			
ECTS credits: 6			
Pre-requisites: -			
Aims of the course: Prepare the student to: <ul style="list-style-type: none"> • acquire the principles of integrated sensor systems based on the principles of converting energy from one form to another, • apply the acquired knowledge in future practice in the field of information exchange with the environment, including technological systems, • integrate sensor devices into control systems, • apply integrated solutions of sensors systems in control and management processes in waste processing plants, • prepare students for work in multi- /inter- disciplinary areas and research. 			
Learning outcomes: The outcomes of the course are to enable students to work in 2D and 3D environments and do drawings (basics, longitudinal sections, cross sections, details) for high-rise, low-rise and hydraulic structures, and to create the basis for calculation works for the construction of a building, road or liner hydrographic structure.			
Syllabus			
<i>Theoretical part</i>			
Classification of sensors and systems for kiting, transmission and processing of information in measuring and anti-burglary systems, sensory techniques, classification of sensory materials, micro and nano electro-mechanical systems, intelligent and integrated sensor systems in the process of waste processing and management. Pressure sensors of nano and other sizes (fluid flow, temperature, humidity), bio-sensors. Configuration of sensing elements, integration of sensors and PID systems.			
<i>Practical part:</i>			
Classification of sensors and systems for kiting, transmission and processing of information in measuring and anti-burglary systems, sensory techniques, classification of sensory materials, micro and nano electro-mechanical systems, intelligent and integrated sensor systems in the process of waste processing and management. Pressure sensors of nano and other sizes (fluid flow, temperature, humidity), bio-sensors. Configuration of sensing elements, integration of sensors and PID systems.			
Literature			
1. Stanković D. Fizičko tehnička merenja - senzori, 2001, Stankovic D. Physical technical measurements - Sensors, 2001.			
2. Popović M., Senzori i merenja, Zavod za udžbenike i nastavna sredstva, I. Sarajevo 2004., Popovic M. Sensors and Measurements, Institute for textbooks and teaching aids, and. Sarajevo 2004.			
3. Clarence W. de Silva, Sensor Systems: Fundamentals and Applications 2016 by CRC Press.			
4. J. Fraden (2010). Handbook of Modern Sensors, Physics, Designs and Applications, Springer-Verlag.			
Number of active classes			Other forms of teaching:
Lectures: 2	Practical classes: 1	Research work: 1	
Teaching methods Combined, interactive approach with practical problem solving.			
Grading system (maximum 100 points), grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.			
Pre-exam obligations	points	Final exam	points
activity during theoretical lectures	10	written exam	70
practical training	20	oral exam	
colloquium(s)/seminar papers			
Sum	30	Sum	70