



University of Split

Department of Professional Studies

ROBOTICS

COURSE SYLLABUS

COURSE DETAILS		
<i>Type of study programme</i>	Professional study - 180 ECTS	
<i>Study programme</i>	POWER ENGINEERING	
<i>Course title</i>	Robotics	
<i>Course code</i>	SEN033	
<i>ECTS (Number of credits allocated)</i>	5	
<i>Course status</i>	Core	
<i>Year of study</i>	Third	
<i>Semester</i>	Fifth (fall)	
<i>Course Web site</i>	http://www.oss.unist.hr/	
<i>Total lesson hours per semester</i>	Lectures	30
	Practices	
	Laboratory exercises & practical demonstration	30
<i>Prerequisite(s)</i>	None	
<i>Lecturer(s)</i>	Department of Electrical Engineering faculty: Predrag Đukić, Ph.D., College professor,	
<i>Language of instruction</i>	Croatian, English	

COURSE DESCRIPTION	
<i>Course Objectives:</i>	<ul style="list-style-type: none"> • understanding basic laws and phenomena in the area of robotics, • conducting experiments in laboratory and industrial environment.
<i>Learning outcomes</i> <i>On successful completion of this course, student should be able to:</i>	<ol style="list-style-type: none"> 1. explain fundamental physical and technical base of robotic systems, 2. describe basic laws and phenomena that define behaviour of robotic systems, 3. create analytical, design and development solutions for components, devices and equipment of robotic systems, 4. conduct experiments and measurements in laboratory and on real components, devices and equipment of robotic systems, 5. interpret the acquired data and results of experiments, 6. describe development and application of robotic systems
<i>Course content</i>	<p>Elements of interface between mechanical and electric/electronic components and devices (Sensors and actuators).</p> <p>Circuits for supply/actuation of electromechanical actuators.</p> <p>Circuits for data conditioning of electromechanical sensors, AD-DA conversion. Sensors of physical values. Robotic vision, navigation and decision making</p>

CONSTRUCTIVE ALIGNMENT – Learning outcomes, teaching and assessment methods

Alignment of students activities with learning outcomes		
Activity	Student workload ECTS credits	Learning outcomes
<i>Lectures</i>	30 hours/ 1 ECTS	1,2,3,4,5,6
<i>Laboratory work</i>	30 hours/ 1 ECTS	3,4,5
<i>Preparation, laboratory mid-term exam</i>	30 hours/ 1 ECTS	3,4,5
<i>Self-study</i>	45 hours/ 1.5 ECTS	1,2,3,4,5,6
<i>Office hours and final exam</i>	15 hours/ 0.5 ECTS	1,2,3,4,5,6
TOTAL:	150 hours / 5 ECTS	1,2,3,4,5,6

CONTINUOUS ASSESSMENT		
Continuous testing indicators	Performance A_i (%)	Grade ratio k_i (%)
<i>Class attendance and participation</i>	70 - 100	5
<i>Laboratory work</i>	100	10
<i>Laboratory mid-term exam</i>	50-100	30
<i>First mid-term exam</i>	50-100	15
<i>Second mid-term exam</i>	50-100	15
<i>Third mid-term exam</i>	50-100	15

FINAL ASSESSMENT		
Testing indicators – final exam (first and second exam term)	Performance A_i (%)	Grade ratio k_i (%)
<i>Practical exam (written)</i>	50 - 100	40
<i>Theoretical exam (written and/or oral)</i>	50 - 100	50
<i>Previous activities (include all continuous testing indicators)</i>	50 - 100	10
Testing indicators – makeup exam (third and fourth exam term)	Performance A_i (%)	Grade ratio k_i (%)
<i>Practical exam (written)</i>	50 - 100	50
<i>Theoretical exam (written and/or oral)</i>	50 - 100	50

PERFORMANCE AND GRADE		
Percentage	Criteria	Grade
50% - 61%	<i>basic criteria met</i>	sufficient (2)
62% - 74%	<i>average performance with some errors</i>	good (3)
75% - 87%	<i>above average performance with minor errors</i>	very good (4)
88% - 100%	<i>outstanding performance</i>	outstanding (5)

ADDITIONAL INFORMATION

Teaching materials for students (scripts, exercise collections, examples of solved exercises), teaching record, detailed course syllabus, application of e-learning, current information and all other data are available by MOODLE system to all students. (<https://moodle.oss.unist.hr/>).