

Course title: Robotics and flexible generation systems				
Course code	Course status	Semester	Number of ECTS credits	Lecture hours
<i>PA4103</i>	Mandatory	<i>I</i>	4,5	2L+1E

Study program: Master studies, ELECTRICAL ENGINEERING, study program: Power systems and Control, department: Automatics (studies last for 10 semesters, 300 ECTS credits). Postgraduate studies, ELECTRICAL ENGINEERING, study program: Power systems and Control, department: Automatics (studies last for 8 semesters, 240 ECTS credits)	
Prerequisites: No prerequisites required.	
Course aims:	
Teacher(s) first and last names: <i>PhD Novak Jauković - professor</i>	
Studying method: Lectures, laboratory exercises consultations.	
Course synopsis:	
Preliminary week	Preparation and semester enrolment.
I week	Introduction.
II week	Manipulative robots.
III week	Kinematical model of manipulator.
IV week	Direct kinematical problem.
V week	Inverse kinematical problem.
VI week	<i>I colloquium</i>
VII week	Free week
VIII week	Dynamic model of manipulator.
IX week	Synthesis of trajectories and dynamic analysis.
X week	Robot control.
XI week	Executive, tactical and strategic level of control.
XII week	<i>II colloquium</i>
XIII week	Mobile robots.
XIV week	Multi robot systems.
XV week	Flexible generation systems.
XVI week	<i>Final exam</i>
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.
OPTEREĆENJE STUDENATA	
<u>per week</u>	<u>per semester</u>
Working hours: 6 credits x 40/30 = 6 hours.	Teaching and the final exam: (8hours) x 16 = 96hours.
Working hours structure: 2 hours for teaching 2 hour for exercises 2 hours for individual work, including consultations.	Necessary preparation (before semester): 2 x (8hours) = 12hours. Total work hours for the course: 135hours Additional hours for preparing correction of the final exam, including the exam taking: up to 27hours. Work hours structure: 96hours (lectures) + 12hours (preparation) + 27hours (additional work)
Lessons, exercises and laboratory exercises attendance is mandatory for students, as well as doing colloquiums.	
Literature: M.Vukobratović: Uvod u robotiku V.Potkonjak Robotika	
The forms of knowledge testing and grading: - I and II colloquium carries 25 points (50 points total). - Final exam carries 50 points	
Special remarks for the course	
Teacher(s) who provided the information: PhD Novak Jauković	
Note: -	