

Course title: PROJECT II – Microprocessor control				
Course code	Course status	Semester	Number of ECTS credits	Lecture hours
PA5103	Mandatory	I	4	1P+1L+1Proj.

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 c, department: Automatics (studies last for 8 semesters, 240 ECTS credits)

Prerequisites:
 No prerequisites required.

Course aims: Students will be introduced with basic knowledge about projects of supervisory and control systems in energetic.

Teacher(s) first and last names:
 PhD Milutin OSTOJIĆ, dipl. ing. - professor, MSc Boris MARKOVIĆ, dipl.ing. - assistant

Studying method:
 Lectures, laboratory exercises, individual work, practical assignments consultations.

Course synopsis

Preliminary week	Preparation and semester enrolment.
I week	<i>Introduction. Basic principles about projects of supervisory and control systems in energetic.</i> <i>Platforms for realization of supervisory and control systems.</i> <i>Application of PC as universal measurement device. (I homework)</i> <i>Sensors, signal conditioners, transmitters</i> <i>Acquisition cards (II homework)</i> I colloquium <i>Algorithms of digital data processing</i> <i>Realization of control systems. (III homework)</i> <i>System for DC motor control</i> <i>System for induction motor control</i> <i>System for brushless motor control (IV homework)</i> II colloquium <i>Principles of SCADA realization (V homework).</i> Determination of seminar works for final exam.
II week	
III week	
IV week	
V week	
VI week	
VII week	
VIII week	
IX week	
X week	
XI week	
XII week	
XIII week	
XIV week	
Final week	Final exam
XVI-XII week	Administrative procedures.
Additional lessons, correction of the final exam and administrative procedures.	

STUDENT WORKLOAD

<u>per week</u>	<u>per semester</u>
Working hours: 4 credits x 40/30 = 5 hours and 20 minutes. Working hours structure: 1 hours for teaching 1 hour for exercises 1 hour for project work 2 hours and 20 minutes for individual work, including consultations.	Teaching and the final exam: (5hours and 20 minutes) x 16 = 85 hours and 20 minutes. Necessary preparation (before semester): 2 x (5hours and 20 minutes) = 10hours and 40 minutes. Total work hours for the course: 120hours Additional hours for preparing correction of the final exam, including the exam taking: up to 24hours. Work hours structure: 85hours and 20 minutes (lectures) + 10hours and 40 minutes (preparation) + 24hours (additional work)

Lessons attendance is mandatory for students, as well as doing homework, laboratory exercises, colloquiums and seminar work.

Literature: CD with material and laboratory exercises

The forms of knowledge testing and grading:

- Homework 5x1 points,
- Colloquium 2x 22.5 points (total 45 points)
- Final exam 50 points.

Student gets the passing grade by collecting 51 points at least.

Mark	A	B	C	D	E
Number of points	90 - 100	80 - 89	70 - 79	60 - 69	51 - 59

Special remarks for the course: If needed, the course can also be taught in English..

Teacher(s) who provided the information: PhD Milutin OSTOJIĆ

Note: Additional information on <http://www.bm.users.cg.yu/>