

		Course title: <i>Electronic instruments for measurements</i>		
Course code	Course status	Semester	Number of ECTS credits	Lecture hours
PA1202	Mandatory	II	5	3P+1V+0.5L

Study program: Graduate academic studies, ELECTRICAL ENGINEERING, study program: Electronics, Telecommunications and Computer engineering (studies last for 4 semesters, 120 ECTS credits).	
Prerequisites: No prerequisites required.	
Course aims: Students will be introduced with the basic elements of electronic instruments for measurements: filters, differential amplifiers, amplifiers with voltage and current processing, digital-analog converters, voltage to frequency converters, current to frequency converters, resistance to frequency converters, capacitance to frequency converters.	
Teacher(s) first and last names: Prof. Dr Nikša Tadić	
Studying method: Lectures, exercises, laboratory exercises, individual work on practical tasks, consultations.	
Course synopsis:	
Preliminary week	Preparation and semester enrolment.
I week	Introduction: electronic instruments for measurements
II week	Transfer function of the Second order filter
III week	Active RC filters of second order based on the feedback with 2 integrators
IV week	Filters with switchj-hing capacitors
V week	G_{rr} -C filters
VI week	<i>I colloquiums</i>
VII week	Free week
VIII week	Differential amplifier
IX week	Insrtumental amplifier with voltage processing with 3 operational amplifiers
X week	Insrtumental amplifier with voltage processing with 2 operational amplifiers
XI week	Insrtumental amplifier with current processing
XII week	Digital-analog converters
XIII week	<i>II colloquiums</i>
XIV week	Analog-digital converter
XV week	resistance to frequency and capacitance to frequency converters
XVI week	<i>Final exam</i>
Final week	Administrative procedures.
Additional lessons, correction of the final exam and administrative procedures.	
STUDENT WORKLOAD	
<u>per week</u> 5 credits x 40/30 = 6 h and 40 min Working hours structure: 3 h for lectures 1 h for exercises 0,5 h for lab.exercises 2 h i 10 min for individual work including consultations	<u>per semester</u> Teaching and the final exam: (6 h 40 min) x 16 = 106 h 40 min Necessary preparation (before semester): 2 x (6 h i 40 min) = 13 h and 20 min Total work hours for the course: 5x30 = 150 h Additional hours for preparing correction of the final exam, including the exam taking: up to 30hours . Working hours structure: 106 h and 40 min. (Lectures)+13 h and 20 min. (Preparation)+30 h (Additional work)
Lessons attendance is mandatory for students, as well as doing homeworks and colloquiums, etc.	
Literature: N. Tadić, <i>Elektronski mjerni instrumenti</i> , script.	
The forms of knowledge testing and grading: - laboratory exercises- 10 points, - 2 colloquiums - 20 points (40 points in total) - Final exam - 50 points. Student gets the passing grade by collecting 50 points at least.	
Special remarks for the course :	
Teacher(s) who provided the information: Prof. Dr Nikša Tadić	
Note:	