

		Course title: <i>Design of VLSI circuits</i>		
Course code	Course status	Semester	Number of ECTS credits	Lecture hours
<i>PA1101</i>	Mandatory	<i>I</i>	6	3L+1E+0.5Lab

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 concepts of circuit design with high level of integration: basic active electronic components, inverter, transmission gate, parameter estimation, circuit characterization, digital integrated circuits, analog integrated circuits.	
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: vrsta podloga, technologies and techniques of manufacturing, level of integration, design methodologies
II week	MOSFET, BJT
III week	CMOS inverter
IV week	Transmission gate
V week	Planarni proces
VI week	<i>I colloquium</i>
VII week	Free week
VIII week	Estimation of resistance and inductivity
IX week	Estimation of capacitance
X week	Distributed RC parameters, excitation of high capacitance
XI week	Dinamic characteristics
XII week	Power consumption, distribution of charge
XIII week	<i>II colloquium</i>
XIV week	Digital integrated circuits
XV week	Analog integrated circuits
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 = 8 hours.	Teaching and the final exam: (8hours) x 16 = 128hours.
Working hours structure: 3 hours for teaching 1 hour for exercises 0.5 hour lab exercises 3 hours i 30 min for individual work including consultations	Necessary preparation (before semester): 2 x (8hours) = 16hours. Total work hours for the course: 176hours Additional hours for preparing correction of the final exam, including the exam taking: up to 36hours. Work hours structure: 128hours (lectures) + 16hours (preparation) + 36hours (additional work)
Lessons attendance is mandatory for students, as well as doing colloquiums and laboratory exercises, etc.	
Literature: N. Tadić, <i>Projektovanje VLSI kola</i> , lecture notes.	
The forms of knowledge testing and grading: - laboratory exercises - 10 points, - 2 colloquiums – each carries 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: