

Study program: Modern computer technologies			
Course title: Digital Electronics			
Professor/assistant: Danijela A. Aleksić			
Type of course: elective			
ECTS credits:			
Pre-requisites:			
Aims of the course: The course aims to provide basic knowledge of the theory of switching amplifiers, flip-flops, logic circuits, counters, shift registers, memories, D/A and A/D converters.			
Learning outcomes: The outcome of the course is to prepare students for the adaption and application of new knowledge in realization of switching amplifiers, flip-flops, logic circuits, counters, shift registers, memories, D/A and A/D converters.			
Syllabus <i>Theoretical part:</i> Switching amplifiers (with load resistance, with capacitive and inductive load). Flip-flops (RS, D, JK). Logic circuits (TTL families, CMOS families). Open-collector and tri-state outputs. Asynchronous and synchronous counters. Shift registers. Numerical indicators. Memories, (ROM, RAM, EPROM, EEPROM). D/A and A/D converters. <i>Practical part:</i> Realization of switching amplifiers and flip-flops. Realization counters and shift registers. All circuits have to be built before measurements according to a circuit diagram. Programming EEPROM. D/A and A/D converters (measurement on experimental boards).			
Literature 1. Živković Dejan, Popović Miodrag, Impulsna i digitalna elektronika, Nauka, Beograd, 1993. 2. Tesić Spasoje, Impulsna i digitalna elektronika, Naučna knjiga, Beograd, 1992. 3. Nikolić Aleksandar, Digitalna elektronika, Punta, Nis, 2005.			
Number of active classes			Other forms of teaching:
Lectures: 30	Practical classes: 30	Research work:	
Teaching methods Combination of interactive approach with practical problem solving.			
Grading system (maximum 100 points), grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.			
Pre-exam obligations	points	Final exam	points
activity during theoretical lectures	10	written exam	15
practical training	10	oral exam	15
colloquium(s)/seminar papers	50		
Sum	70	Sum	30