Study program: Communication technologies /Modern computer technologies

Course title: Digital Electronics

Professor/assistant: Danijela A. Aleksić / Danijela A. Aleksić

Type of course: compulsory

ECTS credits: 6

Pre-requisites: Introduction to electronics

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

Theoretical part
Switching amplifiers (with load resistance, with capacitive and inductive load). Flip-flops (RS, D, JK). Logic circuits (TTL families, CMOS families). Open-collector and tristate outputs. Asynchronous and synchronous counters. Shift registers. Numerical indicators. Memories, (ROM, RAM, EPROM, EEPROM). D/A and A/D converters.

Practical part
Realization 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 board).

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
Research work methods of teaching. Combination of interactive approach with practical problems 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	**30+20**		
Sum	**70**	**Sum**	**30**