

Study program: Communication Technologies			
Course title: Introduction to electronics			
Professor/assistant: Danijela A. Aleksić			
Type of course: compulsory			
ECTS credits: 6			
Pre-requisites: none			
Aims of the course: The aim is to provide basic knowledge of the theory of amplification and equip students for the design and practical implementation of the amplifier.			
Learning outcomes: The outcome of the course is to prepare students for the adaption and application of new knowledge in realization of amplifier and applications, thyristors and triacs circuits.			
Syllabus			
<i>Theoretical part</i> Semiconductor physics. n-type and p-type semiconductors. p-n junction in forward and reverse direction. Diodes (rectifier, Zener, varicap, Schottky). Applications of rectifier diodes (half-wave and full wave rectifier circuits, voltage doubler and multiplier circuits). Bipolar transistors. Mode of operation of npn and pnp transistors. Setting and stabilizing the working point. Basic transistor configurations (construction and mode operation characteristics). MOSFETs (construction and mode operation, characteristics). Basic FET configurations (common – source, common – drain, and common gate configuration). Thyristors and triacs (construction and mode operation, triggering methods, phase control).			
<i>Practical part:</i> Measuring direct and alternating voltage with multimeter and oscilloscope. Characteristic curves of diodes and transistors. Amplifiers with bipolar and unipolar transistors (measuring input and output resistance and gain).			
Literature 1. Litovski Vančo, Lazović Slobodan, "Elektronika I, prvi deo", Naučna knjiga, Beograd, 1989. 2. Nikolić Aleksandar, Osnovi elektronike, Punta, Nis, 2006.			
Number of active classes 60			Other forms of teaching:
Lectures: 30	Practical classes: 15+15	Research work:	
Teaching methods Theoretical and practical teaching in combination with interactive teaching 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	20	written exam	30
practical training	30	oral exam	
colloquium(s)/seminar papers	20		
Sum	70	Sum	30