

Study program: Modern computer technologies			
Course title: Electrical Circuit Design			
Professor/assistant: Danijela A. Aleksić			
Type of course: elective			
ECTS credits: 6			
Pre-requisites: none			
Aims of the course: The purpose of the course is introducing students to the principals of design printed circuit boards intended for electronic devices in serial production. Students will be familiar with application software for design of printed circuits boards. Students will be trained to understand steps in production within modern companies specialized for electronic device development.			
Learning outcomes: After the course ends, students will be able to develop printed circuit boards independently by using a computer software.			
Syllabus <i>Theoretical part</i> Electronic device design. Phases of printed circuits design. Application software for design of printed circuits. Installation. Defining parameters. Defining project. Design of electrical scheme (SCH). SCH libraries. SCH component arrangement and its connections. Testing electrical scheme. Simulation. Time and frequency domain analysis. SCH document hierarchical analysis. PCB Update from SCH document. PCB component placement. Manual and automatic route. Placement points for testing. PCB document verification. PCB reports. Printing PCB reports. Development of electronic devices and printed circuit boards. Single and double sided circuit boards. Filling printed circuit boards. Manual and automatic filling. Component soldering. Apparatus for soldering. Testing and tuning device. <i>Practical part:</i> Laboratory exercises. The tour to the company for production of printed circuit boards and electronic devices.			
Literature 1. Zoran N. Milivojević: Projektovanje pomoću računara, Punta, Niš, 2003.			
Number of active classes			Other forms of teaching:
Lectures: 60	Practical classes: 30	Research work:30	
Teaching methods Methods of teaching 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	
practical training	20	oral exam	30
colloquium(s)/seminar papers	40		
Sum	70	Sum	30