

Study program: Multimedia Communications Technologies			
Course title: Terminal Multimedia Devices			
Professor/assistant: Zoran N. Milivojević. Ph. D.			
Type of course: elective			
ECTS credits: 7			
Pre-requisites: none			
Aims of the course: This course provides students with terminal multimedia systems, such as microphones, speakers, cameras, monitors, and touch-sensitive terminals.			
Learning outcomes: The student will be trained to select independently terminal multimedia devices when making the concept of a multimedia system. Also, student will be able to understand the parameters of electro-acoustic converters, image recording and image improving, as well as Touch sensors.			
Syllabus			
<i>Theoretical part</i> Multimedia signals. Multimedia systems. Terminal devices. Acoustic-electrical transducers. Microphones. Electrodynamic microphones. Capacitive microphones. Preamplifier. Electro-acoustic transducers. Loudspeakers. Electrodynamic loudspeaker. Low-frequency loudspeaker. Mid-frequency loudspeaker. High-frequency speaker. Loudspeaker box. Headphones. Electromagnetic headphones. Electrodynamic headphones. Cameras. Plumbicon. Vidicon. CCD sensors. Video monitor. CRT monitor. Cathode monitor. Touch terminals. Touch sensors. Capacitive Touch sensors. Resistive Touch sensors. Acoustic Touch sensors. Optical infra-red Touch sensors.			
<i>Practical part</i> Practical exercises follow theoretical lessons. Computer -aided exercises. Projects design.			
Literature			
<ol style="list-style-type: none"> Bojković, Z., Martinović, D., <i>Osnove multimedijalnih tehnologija</i>, Visoka škola elektrotehnike i računarstva, Beograd, 2011. Pravica, P., Drinčić, D., <i>Elektroakustika</i>, Visoka škola elektrotehnike i računarstva, Beograd, 2008. Milivojević, Z., <i>Informatika – komponente personalnih računara</i>, Punta, Niš, 2008. 			
Number of active classes			Other forms of teaching:
Lectures:	Practical classes:	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	20	written exam	30
practical training	10	oral exam	
colloquium(s)/seminar papers	20+20		
Sum	70	Sum	30