Study program: Modern computer technologies

Course title: Architecture of Personal Computers

Professor/assistant: Mirko Kosanovic / Milos Kosanovic

Type of course: elective

ECTS credits: 5

Pre-requisites:

Aims of the course:
Acquisition of basic knowledge about the component parts of a PC.

Learning outcomes:
Enable students to self-assembly and repair a PC.

Syllabus

Theoretical part

Development of the personal computer and its components. Types of PC case and PC power. Motherboard types in PC and PC buses. Basic input/output system – BIOS. Micro-processors and their specifications. Memory in a PC IDE and SCSI interfaces. Principles of magnetic storage (floppy drives and hard drives). Principles of optical data storage (CD – ROM, DVD – ROM, Blu-Ray). Video and audio hardware (monitors, graphics and audio controllers). Types of interfaces for PC (serial, parallel, Ethernet, USB, FireWire).

Practical part

Component parts of PC. Mounting PC case. Types of power in PC, their frequent breakdowns, their maintenance and repair. Getting to know the different types of motherboards, their frequent breakdowns, their maintenance and repair. View the basic input/output system BIOS, its labeling, adjustment, replacement and `update`. Getting to know different microprocessors, their bases and the method for their mounting. Introduction to various memory modules, their plate and maintenance. Overview of IDE and SCSI interfaces, their connecting cables and connection methods. Introduction to the floppy drives and hard drives and their components. Setup, formatting and maintenance of HD. Introduction to the CD - ROM and DVD -ROM and their media. Getting to know different video controllers and monitors, their adjustment. Setting different interfaces with a PC (serial, parallel, Ethernet and USB) and introducing the appropriate cable for the interface. Introduction to keyboards and mice, maintenance and repair. Overview of input/output devices, the most common faults and their correction. Introduction to the diagnostic programs to detect performance of PCs. Testing and Maintenance of the PC.

Literature
1. *Nadogradnja i održavanje PC računara,* Mark Minasi, Mirko knjiga, 2005.
2. *Nadogradnja i popravka PC,* Scott Mueller, CET, 2000.
3. *Montaža i servisiranje računara,* Mirko Kosanović, interna skripta.
4. *PC priručnik za servisere:otkrivanje i otklanjanje kvarova,* Stephen J. Bigelow, Mikro knjiga, 2001.

Number of active classes			Other forms of teaching:
Lectures: 30	Practical classes: 30	Research work:	

Teaching methods

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	**20**	oral exam	**15**
colloquium(s)/seminar papers	**40**		
Sum	**70**	**Sum**	**30**