Study programme(s): Computer Science

Level: bachelor

Course title: Computer Organisation

Lecturer: Milan F. Vidakovic

Status: obligatory

ECTS: 7

Requirements: none

Learning objectives

Acquiring basic knowledge and skills in digital electronic components and computer hardware, as well as in low level programming languages.

Learning outcomes

Minimum: a student will be able to comprehend basic principles of digital electronic components and computer organisation and architecture.

Desirable: a student will be able to understand advanced component architectures, advanced computer architectures, and multiprocessor architecutres.

Syllabus

Theoretical instruction

Computer. Computer organisation and functioning. System and application software. Numbers. Boolean algebra. Computer arithmetics. Hardware implementation of boolean functions. Processor. Memory. Cache memory. Bus. Input-output subsystem. Peripherals.

Practical instruction

Modern processors and organisation. Machine language and assembler programming. Using assembler, linker and debugger. Combinatory and sequential circuits simulation.

Literature

Recomended

1. William Stallings, Организација и архитектура рачунара: Пројекат у функцији перформанси, превод седмог издања, CET, 2006.

Weekly teaching load				
Lectures: 2	Exercises: 1	Practical Exercises: 1	Student research: 0	Other: **0**

Teaching methodology

Lectures are presented using classical teaching methods and supported by beamer presentations. Exercises are used to practice and analyse low level programming as well as to demonstrate and practice digital circuits using a simulator. The abillity of application of theoretical knowledge is checked through independent solving of exercises on one colloquia and three projects. The final exam is oral and a student is supposed to demonstrate general understanding of the presented theoretical material.

Grading method (maximal number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	**60**	Oral exam	40