Course title: Computer Architecture and Operating Systems
Course code: 13041
ECTS credits: 4
Requirements: None
Basic information
Level of studies: Undergraduate applied studies
Year of study: 1
Trimester: 1
Goal: Acquiring knowledge related to theoretical basics, principles and application in the field of Computer Architecture and Operating Systems. Studying the architecture of computer systems in order to understand the impact of hardware on efficient use of computers, as well as the precondition for understanding operating systems. Acquiring knowledge about structure and concepts of operating systems.
Outcome: Students should be able to make evaluation of specific architecture and to apply basic theoretical and practical knowledge of computer architecture and operating systems in future everyday work, e.g. while making choice of hardware and system software.
Contents of the course
Theoretical instruction
1. Concept of computer system architecture
2. Configurationof the computer system
3. Computer components and their functions
4. Memory hierarchy and different types of memories
5. Input/Output
6. Instruction sets
7. Addressing modes
8. Processor structure and function, interrupts
9. Pipeline processing, RISC and CISC architecture
10. Control unit
11. Introduction to operating systems
12. Process scheduling
13. Memory management
14. File system management
15. Device management

Practical instruction (Problem solving sessions/Lab work/Practical training)	
1. Representation of numbers in the computer	
2. Operations with binary, octal and hexadecimal numbers	
3. Representation of instructions in the computer	
4. Structure and commands of Linux OS	
Textbooks and References	
1. J. William Stallings, Computer organization and Architecture - Designing for performance, Prentice Hall	
1. J. William Stallings, Operating Systems: Internals and Design Principles, Prentice Hall	
Number of active classes (weekly)	
Lectures: 2	
Practical classes: 2	
Other types of classes:	
Grading (maximum number of points: 100)	
Pre-exam obligations: Points	
Activities during lectures:	
Activities on practical exercises:	
Seminary work:	
Colloquium: 50	
Final exam: Points	
Written exam: 50	
Lecturer	
Nenad Teofilović, MSc	
Associate	