

Study program:	Electrical and computer engineering – Module: Computer engineering, Mechatronics, Information technologies, Engineering management			
Type and level of studies:	Undergraduate academic studies (first level of studies)			
Course unit:	Computer systems organization			
Teacher in charge:	Uros Pešović, teaching assistant Dejan Vujičić			
Language of instruction:	English			
ECTS:	6			
Prerequisites:	-			
Semester:	Winter			
Course unit objective				
Introduction to the organization of the classic von Neumann computer, its functional units and their features; identifying relationships between computer hardware and software; understanding the need to connect computers to computer networks as a method of sharing computer resources and optimizing their use; identifying the selection criteria for computers in the context of their application.				
Learning outcomes of Course unit				
The student is able to explain the basic organization of the computer, the functionality of its units and their characteristics; knows to demonstrate an understanding of the principle of information transfer among functional units of a computer; is able to show the interaction between the functional units of a computer within data processing; knows to explain the concept of connecting computers to computer networks; knows how to understand and apply the criteria for choosing computers according to their specific application.				
Course unit contents				
<i>Theoretical classes</i>				
Computer Science Review and History. Basic computer functional units.				
Processor: basic parts; data transmission and processing; program management.				
Memory organization: memory hierarchy; main memory; secondary memory; virtual memory; memory management.				
Organization of inputs / outputs: peripherals; interfaces; synchronous and asynchronous data transmission; ways of transferring data between computers and peripherals (programmed input / output, direct memory access, input / output processors); interrupt system.				
Computer networks: an introduction to computer networks; types of computer networks; computer connection techniques; communication media.				
<i>Practical classes</i>				
Practical application and testing of acquired knowledge through work with personal computers. Getting to know the practical aspects of connecting computers to peripherals. Gaining hands-on experience in connecting computers to computer networks.				
Literature:				
1.	Noam Nisan, Simon Schocken, The Elements of Computing Systems, The MIT Press			
2.	William Stallings, Computer organization and architecture, Prentice Hall.			
Number of active teaching hours				
Lectures: 2	Practice: 2	Other forms of classes: 0	Other classes	Independent work: Case study:
Teaching methods:				
Realization of lectures on the model of interactive teaching using the methods of practical work.				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures	5	oral examination	20	
Practical classes	15	written examination	20	
Colloquiums	30			
Seminars/homework	10			
Grading system				
Grade	No. of points:	Description		
10	91-100	Excellent		
9	81-90	Exceptionally good		
8	71-80	Very good		
7	61-70	Good		
6	51-60	Passing		
5	less than 50	Failing		