Course name	Basics of Computer Science			
Course code	**Course status**	**Semester**	**Hours of instruction**	**ECTS**
1C16HOS1099	required	I	2+2	5
Teacher(s)	**Prof. Dragan Matić PhD**			

Prerequisite course(s)	Entry requirements
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Course goals

The aim of this course is to introduce basic concepts of Computer Science and ICT: modern tools for data processing, computer networks, database management systems, information and multimedia systems.

Learning outcomes

Student will be able to

- analysis the role of ICT in everyday life
- Independently accesses the Internet, searches for information and uses reliable Internet resources
- Analyzes the impact of hardware components on system performances.
- Analyzes the way data is presented in digital notation.
- Defining the role of system and application software.
- Compares different computer networks according to architecture and principle of operation
- Uses a variety of external storage media and cloud services for data storage
- Uses file manipulation operations (copy, move, delete, rename)
- Uses programs for text editing and tabular data processing for creating documents related to various student activities
- Distinguishes types of graphic objects and different ways of representing colors on a computer
- Explains the organization of HTML pages, includes various elements on the page and creates a simple web presentation

Course content

Information technology. Definitions and contents. Information technology as a strategic resource.
Computer systems. Basic computer components. Hardware and Software
Models of computer systems. Von Neumann model of a computer system. Computer CPU.
Memory. Classification, capacity, RAM, ROM, CD, DVD.
System software. Operating systems. Utilities.
Computer communications and networks. The role and tasks of computer networks. Computer network architecture. Connectivity, LAN, WAN, Internet, TCP / IP, domains
Analog and digital recording. Digital presentation of text. Permutation of bits
Data presentation: simple and complex types. ASCII code
Computer graphics. Classification of programs for working with graphics
Vector representation of graphics. Raster representation of graphics
Resolution, pixels, colors. Basic image formats. Ways to present color images: RGB, CMY, CMYK
Internet and e-business. Internet and its services. Internet search. Security of networked systems.
Basics of HTML language. Tables, graphics and video in html
CSS, role and uses.

Dynamic website programming. JavaScript programming language			
Teaching methods			
Lectures, computational and laboratory exercises, team work, presentation, group presentation			
Books and other learning materials			
Brookshear, Glenn Glenn, and J. Glenn Brookshear: **Computer science: an overview.** Addison-Wesley Longman Publishing Co., Inc., 2002. Robert Sedgewick, Kevin Wayne: **An Introduction to Computer Science**, Princeton University			
Course activities and grading method			
Colloquia, Tests, writing exam. Oral exams, Seminar paper, Presentation, The results of these tests are included in the final grade only if they exceed 50% of the points for a given form of test during the semester.			
Activity	**10**	**Tests**	**50**
		Final exam	**40**
Additional course notes			
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Name of the teacher who prepared this form	prof. Dragan Matić, PhD		

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