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| Course title |

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| **Introduction to Computer Systems**  |

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| Semester | Winter semester |
| Faculty / Department | Faculty of Computer Science  |
| Professor |

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| Professor Goran Slavković, PhD  |

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| ECTS credits | 7 |
| Language of instruction | English |
| Level of study | Bachelor |
| Content | History of computer hardware, software, networking, Computing pioneers, Definition of a computer, Digitalisation, Positional number systems, Bits, bytes and words, Numbers presentation and positional number systems, Systems with fixed and mobile point, Negative numbers with a sign and complete complement, Presentation of non-numerical data (character encoding, graphic data), Presentation of syllabus and sets, The basic organization of von Neumann's computer, Control unit, Issuing instructions, Decoding and execution, Instruction set and types (data manipulation, control, input /output), Programming in machine language and assembler, Concept of virtual machines, Virtual machines hierarchy, Languages of go-betweens, Comparison of interpreters and compilers, History of programming languages, Computer components. Practicing and understanding of positional number systems, binary numbers, full complement and exponential notation in IEEE754 format. Introducing computer components. |
| Learning outcomes | At the end of the course it is expected that a succesaful student through the demonstration shows a detailed understanding of all hardware aspects of the computer system as well as the knowledge of advanced computer systems architecture. |
| Length | One semester. |
| General information | Introduce students to the basic concepts of computer systems. The course is a hardware introductory course. |
| Restrictions to mobile students and availability before the signature of the learning agreement | There is no any restrictions. |