Course: Introduction to Information Technologies Semester 1 - 60 hours

Prerequisites	-
Course aim and skills acquired	The aim of the course is to provide fundamental knowledge and develop basic skills in the field of computer science enabling participants to undertake studies. This includes a basic understanding of the logic of computer systems, the functioning of computers, the use of operating systems, and essential application software. The last part is designed to develop the skills of algorithmic thinking and the basics of programming.
Course contents	1. Computer science fundamentals 2. Arithmetic of numbers 1 3. Arithmetic of numbers 2 4. Computer components and peripherals 5. Using WWW as an information source 6. Text processing 1: basic operations 7. Text processing 2: advanced operations 8. Introduction to logic 9. Spreadsheet 1 – basic operations 10. Spreadsheet 2 – advanced operations 11. Spreadsheet 3 – numerical calculations 12. Virtual machines 13. Operating systems 1 – basic concepts, components and usage, virtual machines 14. Operating systems 2 – continued 15. Operating systems 3 – using shell 16. Test 17. Network – basic architectures, protocols and usage 18. Computer graphics – introduction to image manipulation programs 19. Vector and business graphics – charts and diagrams 20. Group work – tools and group work flow (1) 21. Group work – tools and group work flow (2) 22. Algorithms - problem solving, computational and algorithmic thinking 23. Algorithms – exercises 24. Programming fundamentals - Python 1 25. Programming fundamentals - Python 2 26. Programming fundamentals - Python 3 27. Programming fundamentals - Python 4 28. Final test 29. Revision 30. Retake test
Literature	1. E. Frick, Information Technology Essentials Volume 1: Introduction to Information Systems 2. V. Rajaraman, Introduction to Information Technology 3. Gimp tutorials: https://www.gimp.org/tutorials/ 4. Inkscape tutorials: https://inkscape.org/learn/tutorials/ 5. P. Barry, Head First Python: A Brain-Friendly Guide, O'Reilly, 2016 (new edition Dec. 2022)
Students input	60 hours of supervised teaching 60 hours of individual student's work (preparation for tests and homework)
Assessment criteria	There are three components: activity during classes and homework (40 points), the test (30 points), and the exam (40 points). The test covers the first part of the course material, and the final test (exam) covers the whole material. The total number of points is 100. To obtain a positive grade (passing the course) the student is required to achieve more than half of the points in total. The following conversion of points scored for the final grade is used:

Points	< 51	51-60	61-70	71-80	81-90	91-100
Final grade	2	3	3.5	4	4.5	5