INFORMATION TECHNOLOGIES AND PROGRAMMING FUNDAMENTALS

Title of Study Programme and Code	Type (compulsory/optional)	Cycle	Year of study when the component is delivered (if applicable)
Information Systems Engineering 6531EX043	Compulsory	1st	1st year
Semester/trimester when the component is delivered	**Number of ECTS credits allocated**	**Language of instruction**	**Mode of delivery (face-to-face/e-learning/…)**
1st	6 ECTS	English	Face-to-face/e-learning

Learning outcomes		Study methods	Assessment methods
After completion of the study subject, a student should be able to:		Demonstration; Interactive lecture; Demonstration; Discussion; Practical tasks; Group work; Literature studies; Problem based learning; Case study.	Assessments of practical tasks; Assessment of the activity during the practice, and group work presentation; Assessment of group work and its presentation.
LO 1	Know the purpose and the main parameters of the computer components.		
LO 2	Know and be able to describe the basic functions of computer system software, will know the purposes of the applications and the main possibilities of the applications, and will be able to properly organize the computer work environment.		
LO 3	Know the software development stages and tools.		
LO 4	Know the principles of information safety, laws of information protection and copyright and will be able to apply them in practice.		
LO 5	Foresee potential sources of information, to find, select and transfer the newest information by using worldwide computer network, will be able to search information in the scientific databases and the web.		
LO 6	Know the principles and tools of textual, numerical, graphical information and multimedia elements management and will be able to apply them creatively.		
LO 7	Expertly to create text documents blanks and to use automation tools.		
LO 8	be able to independently and creatively		

	apply text, graphic and digital information processing tools.		
LO 9	Prepare documents for printing and copying.		
LO 10	Know the algorithm conventions and the most popular algorithms imaging techniques.		
LO 11	Read, explain and write the algorithms.		
LO 12	Know features of C ++ syntax.		
LO 13	Develop simple programs in C ++ programming language.		
LO 14	Be interested in information technology innovation, and will be able to track trends.		
LO 15	Understand computer terminology in English.		

Prerequisites
(these courses must be sucessfully completed prior to taking this particular course)

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Course content

1. Information and information technology. Computing systems. The computer in everyday life.
2. An overview of computers, computer systems and their software. Health and safe working environment.
3. Organization of information services. Information technology security. Information security. Copyright. Information technology innovation and development trends.
4. Information technology applications for text, numeric, graphical information and multimedia processing. Technological aspects of preparing and presenting of the reports. Document preparation, data processing, systematization, analytical calculations and visualization.
5. Internet technology and cloud computing.
6. Concept of programming. An overview of modern programming languages. Integrated development environments for C ++ and its comparison. Algorithm, types of algorithms.
7. The main elements of C ++ language. Program Structure.
8. C ++ structures for linear, branched and cyclic algorithms.
9. Arrays.
10. Functions.

Recommended or required reading and other learning resources/tools

1. J. Urbonienė (2019). Course in VLE Moodle.
2. Code: Blocks: http://www.cplusplus.com/doc/tutorial/introduction/codeblocks/
3. C++ Language: http://www.cplusplus.com/doc/tutorial/
4. Code::Blocks student manual:
http://www.sci.brooklyn.cuny.edu/~goetz/codeblocks/codeblocks-instructions.pdf