FACULTY OF ENGINEERING
STUDY COURSE DESCRIPTION

Course Title:	**Programming in C++**
Course code (LAIS):	**DatZ2002**
Study programme:	**Information technology, ESME Sudria**

Level of Study programme:	☐	1st level professional higher education
	☒	Professional Bachelor
	☐	Professional Master
	☐	PhD level
Type of Study programme:	☐	Compulsory course (Part A)
	☒	Professional specialization courses (Part B, compulsory)
	☐	Professional specialization optional courses (Part B, optional)
	☐	Elective courses (Part C)

Course Workload:	Credits	ECTS	Academic hours	Contact hours	Independent work hours
	2	3	80	32	48

Course Author/ Tutor:	**Andris Fjodorovs**
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	Consultation: according to the schedule for each semester
Course Form:	Full time studies
Study year, semester:	2nd year, 4th semester
Language:	English
Prerequisites for the Course:	-
Course Summary:	The goal of the course is to obtain basic knowledge about algorithms and the program development process, as well as to develop skills in C++ programming using structural and object-oriented programming paradigms.
Course Methods:	Lectures, small tests at the start of each lecture about themes covered in the previous lecture, homework to be done independently at home, an exam consisting of practical programming tasks.
Assessment:	Total count of points attained in tests and the exam.
Requirements for Credits:	6 tests, the exam – at least 40% must be attained in total; homework must be passed
Course Contents:	Introduction to C++ programming Arrays Functions Low-level strings and array processing in functions Processing text files Object-oriented programming C++ specific features

Learning Outcomes; the evaluation methods and criteria	Learning Outcomes	The evaluation methods and criteria
	Knowledge	
	Students have an understanding about how to develop algorithms, about their basic principles.	Tests, exam.
	Students have an understanding about how a program can be executed in a computer – the sequence of commands, the memory management, etc.	Tests, exam.
	Students have obtained basic and more deepened theoretical knowledge in C++ programming.	Tests, exam.
	Skills	

	Students have some practical skills in ascribing steps of more complicated algorithms.	Homework, tests.
	Students have obtained basic and more deepened practical skills in C++ programming; they are capable of using various language constructs and benefits of object-oriented programming.	Homework, tests.
	Students have learned various most popular data structures and are capable of using them in the process of developing programs.	Homework, tests, exam.
	Competency	
	Students have adopted such competences as ability to organize their work, professional skills related to the work of developing programs, ability to make decisions, take responsibility for their actions, art of arguing, present and defend their opinion.	Homework, exam.
Course Compulsory literature:	1. Allen B. Downey, How To Think Like A Computer Scientist: C++ Version, CreateSpace, 2009, 192 p. 2. Scott Meyers, Effective C++, Addison-Wesley, 3rd edition, 2005. 3. Deitel, H.M., Deitel, P.J. C++ How to program, 4-th edition. – New Jersey: Prentice Hall, 2003. – 1321p. 4. Bjarne Stroustrup, The C++ Programming Language. - Special edition. Reading, Massachusetts, 2000. – 1019p. 5. cplusplus.com – The C++ Resources Network [online]. In internet: http://www.cplusplus.com	
Course additional literature:	-	
Course confirmation date:	15.06.2017.	
Date of course description update:	31.01.2018.	

Study Course Plan:

Date	Theme	Academic hours		Study Form
		Contact hours	**Independent work hours**	
19.04.2018	Introduction to C++ programming	4	6	Lecture
26.04.2018	Arrays	4	6	Lecture, test
10.05.2018	Functions	4	6	Lecture, test
17.05.2018	Low-level strings and array processing in functions	4	6	Lecture, test
24.05.2018	Processing text files	4	6	Lecture, test
31.05.2018	Object-oriented programming	4	6	Lecture, test
14.06.2018	C++ specific features	4	6	Lecture, test
21.06.2018	Exam	4	6	Exam
	Hours total:	*32*	*48*	