COURSE DESCRIPTION CARD

<table>
<tr><td colspan="10">Faculty of Electrical Engineering</td></tr>
<tr><td>Field of study</td><td colspan="6">Electrical and Electronic Engineering</td><td colspan="2">Degree level and programme type</td><td>bachelor's degree, full time programme</td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6">-</td><td colspan="2">Study profile</td><td>-</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Object-Oriented Programming</td><td colspan="2">Course code</td><td>IS-FEE-10053W</td></tr>
<tr><td colspan="2">Course type</td><td>elective</td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>winter</td></tr>
<tr><td></td><td></td><td></td><td></td><td>30</td><td></td><td></td><td>No. of ECTS credits</td><td>3</td></tr>
<tr><td>Entry requirements</td><td colspan="9">-</td></tr>
<tr><td>Course objectives</td><td colspan="9">Familiarising students with the methods and structures used in object-oriented programming in C language. Implementation of a project consisting in self-writing the program in C with the practical application of methods of object-oriented programming</td></tr>
<tr><td>Course content</td><td colspan="9">Pointers and functions. Overloading. An object and a class. Creation and destruction of the object. Objects and pointers. Properties and methods. Overloading of methods and operators. Encapsulation. Inheritance. Polymorphism and virtual methods. Standard Template Library.</td></tr>
<tr><td>Teaching methods</td><td colspan="9">practical work and reports,</td></tr>
<tr><td>Assessment method</td><td colspan="9">verification of preparation for classes, evaluation of written programs</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="8">Learning outcomes</td><td>Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="8">Student defines and uses in practice concepts in object-oriented programming</td><td></td></tr>
<tr><td>LO2</td><td colspan="8">Student designs, starts and tests the program in C++ written in accordance with the principles of object-oriented programming</td><td></td></tr>
<tr><td>LO3</td><td colspan="8">Student analyzes and corrects errors in the program</td><td></td></tr>
<tr><td>LO4</td><td colspan="8">Student uses libraries of classes and templates during practical writing of the program</td><td></td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="8">Methods of assessing the learning outcomes</td><td>Type of tuition during which the outcome is assessed</td></tr>
<tr><td>LO1</td><td colspan="8">assessment during the classes, evaluation of the projects</td><td></td></tr>
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LO2	assessment during the classes, evaluation of the projects		
LO3	assessment during the classes, evaluation of the projects		
LO4	assessment during the classes, evaluation of the projects,		
Student workload (in hours)		No. of hours	
Calculation	participation in the laboratory	30	
	preparation for the laboratory	20	
	working and description of laboratory reports	20	
	participation in student-teacher sessions related to the laboratory classes	5	
	analysis and improvement of programs	30	
	TOTAL:	105	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		35	1,5
Student workload – practical activities		105	4
Basic references	1. B. Stroustrup - Programming C - The C++ Programming Language 4th Ed., Addison-Wesley 2013 2. W. Savitch - Absolute C++ 5th Ed., Pearson, 2013 3. B. Stroustrup - A Tour of C++, Addison-Wesley, 2014 4. M. Gregoire - Professional C++, 3rd Ed., Wrox-Wiley, 2016 5. B. Johnson - Professional Visual Studio 2015, Wrox, 2015		
Supplementary references	1. J. Liberty, S. Rao, B. Jones - Teach Yourself C++ in One Hour a Day 8th Ed., SAMS, 2017 2. H. Schildt - C++ The Complete Reference, 4th Ed., McGraw-Hil, 2000		
Organisational unit conducting the course	Department of Photonics, Electronics and Light Technique	Date of issuing the programme	
Author of the programme	Adam Nikołajew, Ph.D.	27.01.2020	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar