

Bialystok University of Technology										
Field of study	Computer Science							Degree level and programme type	Engineer's degree full-time programme	
Specialization/ diploma path	---							Study profile	academic	
Course name	Programming Basics							Course code	FCS-00031	
								Course type	obligatory	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	3	
	30	30			30			No. of ECTS credits	6	
Entry requirements										
Course objectives	To familiarize students with the basic techniques of structured programming and implementation of these techniques in C / C ++. Teaching the practical application of these techniques in simple programs written in C / C ++. Learning design, implement, track performance of the software and documentation of larger programs using structured programming. Education practice the use of literature and documentation programming language. Education habit of systematically acquiring knowledge of the lecture.									
Course content	Algorithm. Programming: algorithmization, coding. Flowcharts. Systems and programming aids. Structured programming. Symbols basic, basic data structures: constants, standard scalar types. Operators. Expressions. Defining variables, basic instructions. Structural instructions. Iterations. Defining types. Arrays. Scalar types, flow of control. Functions. Passing parameters. Side effects. Recursion. The structure of the program, structural types: structure, strings. Files. Formatting output. Pointers. Dynamic variables. Memory management. Dynamic data structures. Lists.									
Teaching methods	lecture problem, programming, subject exercises,									
Assessment method	Lecture - written exam (only after the positive grade from the Specialistic Workshop and Classes); Specialistic Workshop - tests of theoretical knowledge, evaluation of selected programs in the classroom, a larger program / project implemented outside the classroom; Classes - test.									
Symbol of learning outcome	Learning outcomes								Reference to the learning outcomes for the field of study	
L01	familiar with the methodology, techniques and tools for structured programming								K_W04	
L02	knows and applies the principles of structured programming design of simple applications								K_W06 K_U04	
L03	is able to test a structural program, in case of detecting errors, is able to diagnose them								K_U04	
L04	able to formulate an algorithm using a programming language to develop a computer program								K_W04 K_U06	
Symbol of learning outcome	Methods of assessing the learning outcomes								Type of tuition during which the outcome is assessed	
L01	exam, quiz								L	
L02	evaluation of programs and simple project								L, C	
L03	evaluation of programs									
L04	exam, quiz								L, Sw, C	
Student workload (in hours)								No. of hours		
Calculation										
	1 - Attendance in lectures -								30	
	2 - Attendance in Classes and Specialistic workshops -								60	
	3 - Preparing to Classes and Sw -								13	
	4 - Attendance on the consultations -								5	
	5 - Preparation to the examination -								14	
	6 - Preparation to Classes -								13	
	7 - Preparing the project (including its presentation) -								15	
TOTAL:								150		
Quantitative indicators								HOURS	No. of ECTS credits	
Student workload - activities that require direct teacher participation								95 (4)+(2)+(1)	3.8	
Student workload - practical activities								101 (7)+(3)+(2)+(6)	4.0	
Basic references	1. Kernighan B.W., Richtie D.M.: The C Programming Language. 2. Code::Blocks (http://www.codeblocks.org/).									
Supplementary references	1. Wirth N., Systematic Programming: An Introduction. 2. Stephen Prata, C Primer Plus. 3. Herbert Schildt, C/C++ Programmer's Reference. 4. Dev-C++ (http://www.bloodshed.net/devcpp.html). 5. Tondo C.L., Gimpel S. E., The C answer book.									
Organisational unit conducting the course	Software Department								Date of issuing the programme	
Author of the programme	dr inż. Dorota Duda								Feb. 17, 2022	

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