WSB University							
Field of study: Computer Science							
Module / course: Fundamentals of Computer Programming							
Educational profile: practical							
Education cycle: I cycle studies							
Number of hours per semester	1		2		3		4
	I	II	III	IV	V	VI	VII
Full time studies (L/C/lab/pr/e)	66						
Part-time studies (L/C/lab/pr/e)	41						
LANGUAGE OF CLASSES	**English**						
LECTURER	Aleksander Dawid prof. of WSB University						
FORM OF CLASSES	**Lecture**						
COURSE OBJECTIVES	Learning basic programming techniques to prepare for software design. Getting to know practical programming in C/C++ language.						

References to course objectives:		**Description of educational results**	**Verification of educational results**
Field of study	**PRK**		
Knowledge			
INF_W04	**P6S_WG**	The student has a structured, theoretically founded knowledge covering the issues of basic programming, compiler, linker I/O procedures, basic types, strings, arithmetic and logical expressions, Instructions, objects, memory management.	An exam in the form of the test. Student will be correcting buggy C programming language code.
Abilities			
INF_U14	**P6S_UW**	The student is able to formulate a specification of simple tasks that can be performed with the methods of basic programming.	Solving real programming problems based on fundamentals of computer programming during laboratory classes.
INF_U01	**P6S_UW**	The student is able to obtain information from various sources about programming.	Algorithm complexity analysis
Social competences			
INF_K04	**P6S_KO**	The student helps in solving socio-economic problems using object-oriented software.	Exam and defense of the lab project.

Students' workload (in didactic hours 1h did.=45 minutes)**

Full- time	**Part-time**
Participation in lectures = 20	Participation in lectures = 4
Participation in classes = 20	Participation in classes = 16
Preparation to classes = 0	Preparation to classes = 0
Preparation to lectures = 1	Preparation to lectures = 1
Preparation to an examination = 6	Preparation to an examination = 6
Project tasks = 25	Project tasks = 21
e-learning = 1	e-learning = 12
Credit/examination = 1	Credit/examination = 1
others (indicate which) = 0	others (indicate which) = 0
TOTAL: 50	**TOTAL: 44**

ECTS points: 2 **Including practical classes: 24**		**ECTS points: 2** **Including practical classes: 20**
PREREQUISITES	Mathematics	
COURSE CONTENT (Division to contact classes and e-learning)	**Contact classes:** **E-learning content:** 1. Definition of the program and programming (1h) 2. Types of programs. (2h) 3. Programming paradigms (1h) 4. Programming languages (C / C ++) (2h) 5. Compiler and Interpreter (1h) 6. Input/Output (2h) 7. Number systems (1h) 8. Variable types (1h) 9. Statement types (1h) 10. Data structures (2h) 11. Procedures and functions (2h) 12. Access to files (2h) 13. Classes and objects (2h) Supplementary materials in the form of complete codes representing a given example of the basic programming techniques. Video conferences from the lecture and the laboratory. Tasks for self-completion.	
LITERATURE (compulsory reading)	1. K. N. King, C Programming: A Modern Approach, W W NORTON, New York 2011 2. B. W. Kernighan, D. M. Ritchie, The C programming language, Murray Hill, New Jersey 1988 3. B. Stroustrup, The C++ Programming Language, Pearson Education (US) 2013 4. H. M.Deitel, C How to Program. Pearson Education. 2015 5. A. Kingsley-Hughes, K. Kingsley-Hughes, Beginning Programming, Wrox; 1st edition 2005 6. J. Viega, M. Messier, Secure Programming Cookbook for C and C++: Recipes for Cryptography, Authentication, Input Validation & More 1st Edition, O'Reilly Media 2003.	
OPTIONAL LITERATURE	1. Robert C., Martin, Clean Code: A Handbook of Agile Software Craftsmanship, Prentice Hall, 2008 2. Dinesh Rajput, Spring 5 Design Patterns: Master efficient application development with patterns such as proxy, singleton, the template method, and more, Pact publishing 2017. 3. Website related to the topic.	
Publications related to the theme of the module	[1] Aleksander Dawid, GPU-based parallel algorithm of interaction induced light scattering simulations in fluids, T*ask Quarterly,* 1(23) (2019) p. 5-17 [2] Aleksander Dawid, PSR-based research of feature extraction from one-second EEG signals: a neural network study, *SN Applied Sciences, 1(12) (2019) p. 1536*	
TEACHING METHODS (Division to contact classes and e-learning)	**Contact classes:** Encouraging the analysis of the lecture material. Independent solving of laboratory problems posed by the lecturer. Implementation of the project **E-learning:** Knowledge test. Programming tasks to be performed	
TEACHING AIDS	Materials provided by the tutor on the e-learning platform. Supplementary literature.	
PROJECT (if implemented in the framework of a classes module)	**No project**	
FORM AND CONDITIONS OF	The condition of obtaining a credit is to obtain a positive grade in all forms of credit provided for in the curriculum, taking into account the quantitative criteria of grading specified in the Framework Student	

ASSESSMENT	Evaluation System at the WSB University.

** L-lecture, C- classes lab- laboratory, pro- project, e- e-learning*