GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	INFORMATICS II, PG_00056042		
Field of study	Automation, Robotics and Control Systems		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	first-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	5.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Faculty of Electrical and Control Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Robert Smyk	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	30.0	0.0	60

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	60	5.0	60.0	125

Subject objectives

Developing the ability to independently design and object-oriented programming in the basic scope.

Use of C / C ++ construct. Installing and using additional libraries in programming.

Creating multi-file programs. Getting to know the basic paradigms, using graphic objects, the basics of GUI creation, the basics of computer vision.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W06] knows the structure of computers and microprocessors and the tasks of operating systems, has basic knowledge of the basics of computer software, drivers, microprocessor technology, design of simple algorithms and the operation of information networks		
[K6_U04] has the ability to self-educate, among other things, in order to improve professional qualifications		

<table>
<tr><td>Subject contents</td><td>Course content – lecture

C and C ++ language: pointers, dynamic memory allocation, passing parameters by reference. Functions for operating on strings. Arguments of the invocation line. Structures. Basic file operations. Pointers to functions. Encapsulation, objects, constructors and destructors, classes, inheritance and virtual functions, overloading, polymorphism, patterns. Handling exceptions. Complex data structures.Event programming, user interface, selected elements of the graphic interface, human-machine interface. Visual programming.Programming environments. The concept of a programming interface (API). File system support. Programmatic support for 2D / 3D accelerated graphics. Elements of computer vision.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of C syntax and C instructions on the level of Informatyka, sem.2 course</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Project work</td><td>60.0%</td><td>40.0%</td></tr>
<tr><td>Examination test</td><td>60.0%</td><td>40.0%</td></tr>
<tr><td>Introductory tests</td><td>60.0%</td><td>20.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>1. B. Kernighan, D.Ritchie, Język ANSI C, WNT, Warszawa 2003.
2. A. Silberschatz, P. Galvin, G. Gagne, Podstawy systemów operacyjnych, WNT 2006.
3. M. Lis, Ćwiczenia praktyczne. MySQL. Darmowa baza danych. Helion. 2006.
4. L. Rutkowski, Metody i techniki sztucznej inteligencji, PWN, 2005.
5. A.Opaliński, course web portal, URL http://moodle..elypg.gda.pl</td></tr>
<tr><td>Supplementary literature</td><td>1. J. Grębosz, Symfonia C++ , T.1-3, Oficyna Kallimach, 1999.
2. J. Hollingworth ,C++ Builder 5 : vademecum profesjonalisty. T.1-2, Helion, 2001.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Describe programming environment
Describe the issues of distributed processing
Describe the process of code compilation and interpretation</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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