GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Informatics II, PG_00039414		
Field of study	Mechatronics, Mechatronics		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2021/2022
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Mechanics and Mechatronics -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Galewski	
	Teachers	dr inż. Yurii Tsybrii dr hab. inż. Marek Galewski	

Lesson types and methods of instruction

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

E-learning hours included: 0.0

Adresy na platformie eNauczanie:
Informatyka II, WL, MTR, I st., sem. 04, letni 2021/22 (M:31391W1) - Moodle ID: 19697
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19697

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	35.0	100

Subject objectives

Teaching students of structural (in C language) and object oriented programming (n Java) basics, relational databases and essential Artificial Intelligence algorithms.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W06	Student understands basic principles of structural and Object Oriented Programming and describes basics of selected Artificial Intelligence algorithms	[SW1] Assessment of factual knowledge
K6_U05	Student knows how to utilise modern programming tools and techniques (e.g. NetBeans, UML, SQL)	[SU4] Assessment of ability to use methods and tools
K6_U09	Student developes simple structural and Object Oriented programms in C and Java	[SU1] Assessment of task fulfilment

Subject contents

Programming in C language: basic elements of the C language, basic elements of program, functions, conditional
statements, loops, I/O operations, array operations, strings, pointers;
Programming in Java language: basic elements of the Java language, elements of object oriented programming (Classes, objectd, inheritance), I/O operations, collections, programming for GUI ;
UML modelling language;
Relational databeses (SQL);
Artificial Inttelligence methods: neural networks, genetic algorithms, fuzzy logic and modelling.

Prerequisites and co-requisites

Passed Computer Science I course.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Obligatory laboratory excercises	55.0%	20.0%
	Individual project	50.0%	20.0%
	Exam	52.0%	60.0%
Recommended reading	Basic literature	[1] M. Galewski: Lecture materials published at the eNaucznie site [2] M. Galewski, P. Duba: Laboratory exercises handbooks	
	Supplementary literature	Kernighan B.W, Ritchie D.M, Język ANSI C. Programowanie. wyd. II, Helion, 2020 Horstmann C.S, Java. Podstawy. Helion, 2019 (ew. wcześniejsze, ale niezbyt stare wydania) Schmuller J., UML dla każdego, Helion 2003 Flasinski, M., Introduction to Artifficial Intellignece, 2016 Rutkowska D., Piliński M., Rutkowski L., Sieci neuronowe, algorytmy genetyczne i systemy rozmyte, PWN, Warszawa, 1997 Tadeusiewicz R., Gąciarz T., Borowik B., Leper B. Odkrywanie właściwości sieci neuronowych przy użyciu programów w języku C#, PAU, Kraków, 2007 Piegat A., Modelowanie i sterowania rozmyte, Exit, Warszawa, 2003	
	eResources addresses	Informatyka II, WL, MTR, I st., sem. 04, letni 2021/22 (M:31391W1) - Moodle ID: 19697 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19697	
Example issues/ example questions/ tasks being completed	The list of sample questions for the exam (around 50) and laboratory individual projects (around 40) are given to the student during the semester. Sample examination questions: - How does type cast operation work? When do we use it and why? Provide examples of typ casting in C. - What is pointer data type used for? When do we use it? What are it's advantages? What daneger it brings for a program? Provide an example of pointer declaration and initialization. - Describr principles of Object Oriented Analysis, Modelling and Design. - Describe basic elements of relational data model. In case of on-line exam it can be performed as quiz with various types of questions that cover course topics.		
Work placement	Not applicable		