GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of IT, PG_00055866		
Field of study	Power Engineering, Power Engineering, Power Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2021/2022
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Doerffer	
	Teachers	dr inż. Piotr Sender dr hab. inż. Maciej Majewski dr inż. Norbert Piotrowski dr inż. Krzysztof Doerffer	

Lesson types and methods of instruction							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	0.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Podstawy informatyki, PG_00055866 - Moodle ID: 18336 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18336						

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	30	2.0	18.0	50

Subject objectives	Focusing on modern applications of information technology in production systems. Acquiring basic knowledge in the area of using modern IT techniques in the automation and robotization of production systems, in line with the idea of the digital industrial revolution, i.e. industry 4.0.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U04] is able to design a simple device structure and prepare the accompanying technical documentation, conduct a basic technical and economic analysis of energy systems, including technologies using renewable and pro-ecological energy sources as well as conventional and nuclear energy, design energy installations for them and their basic elements (including electric lighting)); select, operate and control the most commonly used electrical devices and drive systems.	The student is able to use the basic IT tools to solve problems related to energy.	[SU1] Assessment of task fulfilment
	[K6_K01] is aware of the need for training and self-improvement in the profession of energy and the possibility of further education; can think and act in a creative and entrepreneurial manner; can define priorities for the implementation of an individual or group task	The student has the ability to work alone as well in the group.	[SK2] Assessment of progress of work
Subject contents	Formal methods of information engineering, Application of robots in industry, E-manufacturing, Additive manufacturing, Internet of things, CAD/CAM applications Data analysis, machine learning, artificial intelligence, Industry 4.0., Information systems used to manage production processes, as well as supporting engineering works, Global trends in the development of information technologies.		
Prerequisites and co-requisites	Basics of computer science, Internet, ability to use MS Office.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	50.0%	100.0%

Recommended reading	Basic literature	1. Zarządzanie i technologie informacyjne. t. 1: komunikacja w dobie Internetu, red. Barbara Kożusznik, Wydawnictwo Uniwersytetu Śląskiego, Katowice 2004. 2. Zarządzanie i technologie informacyjne. t. 2: metody sztucznej inteligencji w zarządzaniu i sterowaniu, red. Joanna Józefowska, Wydawnictwo Uniwersytetu Śląskiego, Katowice 2005. 3. Podstawy Robotyki. Wprowadzenie do Teorii i Elementów Manipulatorów i Robotów, red. naukowy -- Morecki A., WNT, Warszawa 1998. 4. Technologie informacyjne. Zeszyty Naukowe Wydziału ETI Politechniki Gdańskiej. Od roku 2005.
	Supplementary literature	1. Honczarenko J.: Elastyczna automatyzacja wytwarzania, WNT, 2000 2. Honczarenko J.: Roboty przemysłowe. Budowa i zastosowanie, WNT, 2004
	eResources addresses	Podstawy informatyki, PG_00055866 - Moodle ID: 18336 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18336
Example issues/ example questions/ tasks being completed	Building a decision model (using AHP methods and a decision tree). Processing and analysis of big data sets.	
Work placement	Not applicable	