GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of IT, PG_00055364		
Field of study	Mechanical 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	5.0
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. Norbert Piotrowski	
	Teachers	dr inż. Krzysztof Doerffer dr hab. inż. Maciej Majewski dr inż. Piotr Sender dr inż. Norbert Piotrowski dr inż. Dawid Zieliński	

Lesson types and methods of instruction

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

Podstawy informatyki, PG_00055364 - Moodle ID: 18335
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18335

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

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_W07] knows the principles of engineering drawing, standards and tools used in preparation of technical documentation	The student prepares technical documentation.	[SW1] Assessment of factual knowledge
[K6_K01] is aware of the need for complementing the knowledge throughout the whole life, is able to select proper methods of teaching and learning, critically assesses the possessed knowledge; is aware of the importance of professional conduct and following the rules of professional ethics; is able to show resourcefulness and innovation in the realisation of professional projects	The student has the ability to work alone as well in the group.	[SK2] Assessment of progress of work
[K6_U03] is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools	The student is able to develop technological documentation, design process and project plan.	[SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>• 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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Basics of computer science, Internet, ability to use MS Office.</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>Porject work</td><td>50.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>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.</td></tr><tr><td>Supplementary literature</td><td>1. Honczarenko J.: Elastyczna automatyzacja wytwarzania, WNT, 2000

2. Honczarenko J.: Roboty przemysłowe. Budowa i zastosowanie, WNT, 2004</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Building a decision model (using AHP methods and a decision tree).

Processing and analysis of big data sets.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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