



## Subject card

Subject name and code	Fundamentals of IT, PG_00055364						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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 hab. inż. Maciej Majewski				
	Teachers		dr hab. inż. Maciej Majewski  dr hab. inż. Jacek Tomków  dr inż. Marcin Wekwejt  dr inż. Krzysztof Doerffer  dr inż. Łukasz Pawłowski  dr inż. Piotr Sender  dr inż. Norbert Piotrowski				
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						
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_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
	[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_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
Subject contents	<ul style="list-style-type: none"><li>• Formal methods of information engineering,</li><li>• Application of robots in industry,</li><li>• E-manufacturing,</li><li>• Additive manufacturing,</li><li>• Internet of things,</li><li>• CAD/CAM applications</li><li>• Data analysis, machine learning, artificial intelligence,</li><li>• Industry 4.0.,</li><li>• Information systems used to manage production processes, as well as supporting engineering works,</li><li>• Global trends in the development of information technologies.</li></ul>		
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 work	50.0%	100.0%
Recommended reading	Basic literature	1. Zarządzanie i technologie informacyjne. t. 1: komunikacja w dobie Internetu, red. Barbara Kozusznik, 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	Adresy na platformie eNauczanie: Podstawy informatyki, W/P, MiBM, sem. 01, zimowy 22/23 (M: 00055364) - Moodle ID: 25653 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25653">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25653</a>	
	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
----------------	----------------