



Subject card

Subject name and code	IT in production and services management, PG_00055042						
Field of study	Management and Production 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 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	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			3.0		
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. Norbert Piotrowski dr hab. inż. Maciej Majewski dr inż. Dawid Zieliński dr inż. Piotr Sender					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	30.0	0.0	45
	E-learning hours included: 0.0						
	Informatyka w zarządzaniu produkcją i usługami, PG_00055042 - Moodle ID: 18333 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18333						
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	45	2.0		28.0	75	
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_K01] feels the need for self-realization by learning throughout life, is looking for modern and innovative solutions in their actions, is able to think creatively and act in an entrepreneurial way	The student has the ability to work alone.	[SK5] Assessment of ability to solve problems that arise in practice
	[K6_U09] can use analytical techniques as well as computer simulation and numerical analysis methods in solving specific problems in the field of production engineering, is able to carry out simple engineering tasks related to the production of typical machine parts using widely understood techniques and computer tools, is able to select and apply appropriate methods of project planning and control courses with the use of computer aided means	The student uses computer systems to obtain data on production management and production control.	[SU1] Assessment of task fulfilment
	[K6_W03] has knowledge of the design record (the record structure) for the preparation of the manufacturing process documentation and basic knowledge of the implementation and management of production systems, including the principles of designing machine parts and manufacturing technologies using information techniques	The student knows the basic topics and terms of planning, control and production management.	[SW1] Assessment of factual knowledge
	[K6_W12] has detailed, theoretically founded knowledge of methods and techniques used in production quality control processes, statistical process control, modern techniques and measurement systems in quality assurance and information techniques in production systems	The student uses the terminology used in the planning, control and production management.	[SW1] Assessment of factual knowledge
Subject contents	<ul style="list-style-type: none"> • Formal methods of information engineering, • ERP, MRP/MRP II, MPS, APS, WMS, CRP, MES, SCM, IRM, ERM systems, • Database, DBMS • 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 work	50.0%	100.0%

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