



Subject card

Subject name and code	Computer aided maintenance of the stock of machines, PG_00053660						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			English		
Semester of study	6	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Technologii Maszyn i Automatykacji Produkcji -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksandra Suchta				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	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	30		0.0		0.0	30
Subject objectives	To familiarise students with the basic issues of machine stock maintenance in modern manufacturing companies.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W12		The student describes the safety requirements at workplaces in a production plant, the principles of ensuring compliance with legal requirements and the use of computer support in the area of compliance.		[SW1] Assessment of factual knowledge		
	K6_W11		The student has knowledge of the maintenance and repair of CNC machine tools and other machines and devices used in production.		[SW1] Assessment of factual knowledge		
	K6_U08		The student describes the categories of software used to support maintenance in production plants, their purpose and basic functionality.		[SU2] Assessment of ability to analyse information		
	K6_U09		The student describes the principles of selecting an effective maintenance strategy for a machine park in a production plant.		[SU2] Assessment of ability to analyse information		

Subject contents	<p>LECTURE: Introductory maintenance knowledge and definitions. Tasks of the fleet maintenance system in modern production plants. OEE and other indicators used to evaluate the effectiveness of a plant maintenance system. Organisational solutions organisational solutions and the principles of their selection, taking into account the specificity of a production plant. Typical strategies maintenance and principles of their selection. Categories of software for computer aided maintenance and their areas of application.</p> <p>AUDIT EXERCISES:1. Application of design of experiment (DOE) in machining: black box theory, the meaning of inputs and outputs, statistical calculations, Latin and Greco-Latin square method2. Application of CMMS software in the management of maintenance activities - data collection, scheduling of inspection and maintenance work.4. Computer-aided measurement and data acquisition (DAQ) - applicability of Labview and DasyLab software in maintenance of production equipment.5. Monitoring of machines and production processes using HMI/SCADA systems - recording of time and machine downtime.6. Development of maintenance plans for CNC machine tools, part 1 and part 2.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final test	56.0%	90.0%
	Exercises	100.0%	10.0%
Recommended reading	Basic literature	1. Legutko S.: Podstawy eksploatacji maszyn i urządzeń. WSiP. 2007.2. Honczarenko J.: Roboty przemysłowe, budowa i zastosowanie. WNT. 2009.2.3. Honczarenko J.: Obrabiarki sterowane numerycznie. WNT. 2010.	
	Supplementary literature	1 Other books on plant maintenance manufacturing plants	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	General daily maintenance plan for CNC milling machines		
Work placement	Not applicable		