



Subject card

Subject name and code	Systems of numerically controlled machines tools, PG_00024857						
Field of study	Mechatronics, Mechatronics						
Date of commencement of studies	October 2020	Academic year of realisation of subject				2022/2023	
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				Polish	
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 hab. inż. Daniel Chuchała					
	Teachers	dr hab. inż. Daniel Chuchała 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	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	<p>The aim of the course is to acquaint students with the construction of CNC machine tools , programming basics and advanced techniques of programming CNC machine tools.</p> <p>Acquisition by the students of practical programming skills CNC lathes and CNC milling machines and the selection of tools and machining parameters when programming machining cycles . familiarize yourself with the preparation of CNC machine tools to work (to determine the center of the workpiece coordinate system , determine the dimensions of the tools , etc .) .</p>						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	K6_W08		He knows and knows the design and production processes using computer CAD / CAM systems.			[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects	
	K6_U05		Is able to use computer CAD / CAM systems for design and manufacturing solutions fluently. Can apply appropriate machining parameters. He knows the basics of programming CNC machine tools.			[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools	
	K6_W11		He has basic knowledge of the life of mechatronic devices, facilities and systems, in particular industrial robots and CNC machine tools.			[SW2] Assessment of knowledge contained in presentation	
	K6_U06		Is able to identify and formulate simple engineering tasks in the field of design and production with the use of CAD / CAM systems typical for mechatronics.			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject	
Subject contents	No recommendations						
Prerequisites and co-requisites	Basic course of manufacturing techniques and machining.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Coloquium		65.0%		100.0%		

Recommended reading	Basic literature	1. Kosmol J. : Automation of machine tools and machining. WNT . Warsaw 1995 .2. Scmid D. et al: Mechatronics . Rea . Warsaw 2002 .3. MTS, Wolski P (trans.) : Basics of CNC machine tools , vol. 1 , p . 2 and t.3 . REA . Warsaw 1999 .4. Stryczek R., Pytlak B .: Flexible Programming Machine . PWN . Warsaw , 2011.5. W. Przybylski , M. Deja : Computer-aided manufacturing machines - basics and applications. WNT . Warsaw , 2007.6. Supplementary materials for laboratory classes of programming CNC machine tools. Gdańsk , 2005.
	Supplementary literature	Augustyn K.: EdgeCAM. Computer-aided manufacturing. Helion. Gliwice 2012.
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Characterize the CNC control systems.2. Replace the basic functions of the type of preparation G.3. Replace the basic functions of auxiliary devices such as M.4. Design a shaft-type object technology using EdgeCAM system.5. Design a plate-like object technology using EdgeCAM system.	
Work placement	Not applicable	