



Subject card

Subject name and code	Manufacturing Engineering, PG_00038867						
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			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	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Manufacturing and Production Engineering -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Adam Barylski					
	Teachers	prof. dr hab. inż. Adam Barylski					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	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	5.0		15.0	50	
Subject objectives	The aim of the course is to provide with state of the art. manufacturing technologies. Possibilities of process planning of different part types. Get to know the selected processing methods of the cylindrical, conic and thread element. Methods and means of plastic and abrasive finishing processes.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U11	The student selects the appropriate machining method depending on the requirements of the part being manufactured. For the selected method, he selects machine tools, tools and auxiliary equipment.			[SU3] Assessment of ability to use knowledge gained from the subject		
	K6_U05	The student uses CAD programs to prepare technological documentation. The student knows the basics of G-code for programming simple machining tasks.			[SU5] Assessment of ability to present the results of task		
	K6_W08	The student knows the basics of designing technological processes of typical machine components. The student understands the processes of selecting the appropriate workpiece and machining allowances.			[SW1] Assessment of factual knowledge		
	K6_U08	The student designs a simple technological process of machine components. The student defines the operations occurring in the technological process and selects tools and machining parameters.			[SU1] Assessment of task fulfilment		

Subject contents	LECTURE Systematic of advanced shaping processes. Structure of technological process and documentation. Starting data for production process plan, manufacturing equipment, semi-workpiece selection. Shaping external surfaces. Processing of the cylindrical, conic and thread elements. Methods and means of plastic and abrasive finishing processes. Shaping internal cylindrical surfaces and threads. Methods and means of plastic and abrasive finishing processes. Fixing, clamping and setting of workpiece. symbols. PROJECT Manufacturing process plan of shaft with heat treatment (technological documentation, tool and fixture selection). Manufacturing process plan of frame (technological documentation, tool and fixture selection).		
Prerequisites and co-requisites	Cutting processes Metrology		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Midterm colloquium	60.0%	50.0%
	Project	60.0%	50.0%
Recommended reading	Basic literature	Feld M.: Podstawy projektowania procesów technologicznych typowych części maszyn. WNT, Warszawa, 2003. Olszak W.: Obróbka skrawaniem. WNT, Warszawa, 2008. Żebrowski T.: Techniki wytwarzania. Obróbka wiórowa, ścierna, erozyjna. WPW, Wrocław, 2004. Poradnik inżyniera. Obróbka skrawaniem. T. I-III, WNT, Warszawa 1993.	
	Supplementary literature	M. Feld „Uchwyty obróbkowe” WNT. P. Cichosz „Narzędzia skrawające” WNT.	
	eResources addresses	Adresy na platformie eNauczenie: Technologia maszyn, W/P, Mechatronika, sem. 5, zimowy 22/23 - Moodle ID: 26703 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=26703	
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • Explain the concept of producibility and assemblability, • Explain the difference between fixing and clamping. • Characterize the machining allowances. • Framework processes, division and application. • Manufacturing datums, division and application. 		
Work placement	Not applicable		