



## Subject card

Subject name and code	Devices of Production Systems, PG_00039921						
Field of study	Mechanical Engineering, Mechanical Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023		
Education level	first-cycle studies		Subject group		Optional subject group 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	6		ECTS credits		2.0		
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		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	15.0	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		6.0		14.0	50
Subject objectives	Rules of universal workholders. Designs special workholders.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U09] is able to plan the manufacturing, assembly and quality control processes of typical constructions and mechanical devices, estimating their costs				[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
	[K6_W08] possesses basic knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle				[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	[K6_W06] possesses elementary knowledge on automatics and robotics of mechanical systems				[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
Subject contents	LECTURE: Significance of instrumentation in a machine components manufacturing process. Errors influencing on accuracy of workholger development. Setting an object in the workholder. Fastening an object in the workholder. Setting and fixing workholder in the machining tool. Principles of workholder design. Lathe chucks. Drill chucks. Milling fixtures. Modular fixtures. Toolholders. Assembly instrumentation. Instrumentation of transportation, manipulators and robots. Rules of computer aided and management of workplace aids. Principles of universal fixtures usage. Costs of instrumentation. PROJECT: Skills of setting and fastening objects in fixtures and implementation of machining fixture for a given operation.						
Prerequisites and co-requisites	Knowledge from recording design and manufacturing engineering.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	60.0%	50.0%
	Written paper	60.0%	50.0%
Recommended reading	Basic literature	Feld M.: Uchwyty obróbkowe. WNT, Warszawa, 2002.  Dobrzański T.: Uchwyty obróbkowe. Poradnik konstruktora, WNT, Warszawa, 1987.  Normy przedmiotowe.	
	Supplementary literature	Poradnik inżyniera. Obróbka skrawaniem. T. I-III, WNT, Warszawa, 1993.	
	eResources addresses	Adresy na platformie eNauczanie: Oprzrządowanie systemów produkcyjnych - Moodle ID: 30589 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30589">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30589</a>	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		