

GDAŃSK UNIVERSITY

Subject card

Subject name and code	, PG_00039940								
Field of study	Management and Production Engineering, Management and Production Engineering								
Date of commencement of studies	October 2020		Academic year of realisation of subject			2020/2021			
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	2		ECTS credits			4.0			
Learning profile	general academic profile		Assessment form			exam			
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. Kazimierz Orłowski							
	Teachers		dr inż. Wojciech Blacharski						
			dr hab. inż. Daniel Chuchała						
			dr inż. Aleksandra Suchta						
			prof. dr hab. inż. Kazimierz Orłowski						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	torial Laboratory Project		t	Seminar	SUM	
	Number of study hours	30.0	0.0	15.0	0.0		0.0	45	
	E-learning hours included: 0.0								
	Adresy na platformie eNauczanie: Obróbka skrawaniem: W/L; ZiIP, 1 stopień, 2 semestr (M:31808W0): Lato 2021 - Moodle ID: 11925 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=11925								
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		7.0		48.0		100	
Subject objectives	Preparation to recognition of cutting processes and machine tools								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	K6_K02		The student is able to design basic machining processes taking into account the correct sequence of machining operations.			[SK3] Assessment of ability to organize work			
	K6_U09		The student is able to select the correct parameters of the cutting process with the use of tool catalogs, also in on-line versions, for a given set of workpiece material and cutting edge material.			[SU4] Assessment of ability to use methods and tools			
	K6_W06		Student knows the basic types of tool materials, their application and basic wear mechanisms in machining processes.			[SW1] Assessment of factual knowledge			
	K6_U08		The student is able to choose the correct machining process and the type of cutting tools for a given type of the manufactured element.			[SU4] Assessment of ability to use methods and tools			
	K6_W07		The student knows the effect of basic cutting parameters on the quality of machined surface.			[SW1] Assessment of factual knowledge			

Subject contents	LECTURE Geometric and kinematic parameters of cutting. Tool and workpiece movements. The geometry of the blades in the tool and working system, the geometry of the cut layer. The phenomenon of formation chips and types of chips. Heat and temperature in the cutting zone. Cooling and lubricating agents. Wear cutting tools. The quality of the processed surface. Cutting force and power. Vibrations in the process machining. Tool materials and rules for their selection. Basic methods of machining: turning, milling, drilling, countersinking, reaming. Abrasive processing. The structure of abrasive tools: grainsabrasives, binders, grinding wheels, principles of grinding wheels selection. Wear processes and methods of dressing grinding wheels.LABORATORY Cutting materials and cutting-off machines. Machining on lathes. Machining on drills. Machining on milling machines. Machining of gears. Machining on grinders. Machining on planers and slotters.						
Prerequisites and co-requisites							
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Laboratory	100.0%	30.0%				
	Lecture	60.0%	70.0%				
Recommended reading	Basic literature	 Olszak W. Obróbka skrawaniem. WNT Warszawa 2008. Podręcznik szkoleniowy. Obróbka metali skrawaniem . Sandvik Coromant 2017. Storch B.: Podstawy obróbki skrawaniem. Wyd. Politechniki Koszalińskiej, Koszalin 2001 Cichosz P.: Narzędzia skrawające. WNT, Warszawa 2006. Bartosiewicz J.: Obróbka skrawaniem i elementy obrabiarek. Wyd. Poilt. Gda. Gdańsk 1997 					
	eResources addresses	Jemielniak K.: Obróbka skrawaniem. Ofic. Wyd. Polit. Warsz. Warszawa1998.Grzesik W.: Podstawy skrawania materiałów metalowych. WNT warszawa 1998. Materiały pomocnicze dostępne na stronach producentów narzędzi np. Seco Tools i in					
-	The final fact contains "	Lato 2021 - Moodle ID: 11925 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=11925					
Example issues/ example questions/ tasks being completed	The final test contains many questions relating to the topics of the entire subject.						
Work placement	Not applicable						