GDAŃSK UNIVERSITY OF TECHNOLOGY

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	Laboratory	Project	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 and criteria	Subject passing criteria / Passing threshold / Percentage of the final grade	
	Laboratory / 100.0% / 30.0%	
	Lecture / 60.0% / 70.0%	
Recommended reading	Basic literature	1. Olszak W. Obróbka skrawaniem. WNT Warszawa 2008. 2. Podręcznik szkoleniowy. Obróbka metali skrawaniem . Sandvik Coromant 2017. 3. Storch B.: Podstawy obróbki skrawaniem. Wyd. Politechniki Koszalińskiej, Koszalin 2001 4. Cichosz P.: Narzędzia skrawające. WNT, Warszawa 2006. 5. Bartosiewicz J.: Obróbka skrawaniem i elementy obrabiarek. Wyd. Poilt. Gda. Gdańsk 1997
	Supplementary literature	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
	eResources addresses	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
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	