



## Subject card

Subject name and code	Surface processing of materials, PG_00040077						
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	Part-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		5.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Artur Sitko				
	Teachers		dr inż. Artur Sitko				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	22.0	0.0	15.0	0.0	0.0	37
	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	37		11.0		77.0	125
Subject objectives	Knowledge about surface treatments of materials.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U08] is able to design a technological manufacturing process for typical elements of machines or devices, using analytical and numerical calculating tools		Students can link parameters used during surface treatments with obtained layers.		[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information		
	[K6_W03] possesses and is able to practically apply the knowledge on the construction, properties and testing methods of construction materials		Student knows: advantages and disadvantages of manufacturing processes and their impact on construction and properties of superficial layers and coats; research methods in terms of superficial layers and coats.		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
Subject contents	Superficial layer, coat, surface treatment.						
	Describes the different forms of degradations (for example: fretting, corrosive wear, abrasive wear, fatigue wear, adhesive wear)Describes the different types of the manufacturing methods of superficial layers and coats:- mechanical,- thermomechanical,- thermal,- thermochemical,- chemical,- physical,- electrochemical.						
Prerequisites and co-requisites	Basic knowledge about: Materials Science. Equilibrium diagrams.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
			50.0%		50.0%		
			50.0%		50.0%		

Recommended reading	Basic literature	<p>1. Łabanowski, Głowacka: Surface Engineering. Scientific and technical publishing house, Elbląg, 2014.</p> <p>2. Burakowski, Roliński, Wierzchoń: Surface Engineering. Scientific and technical publishing house, Warsaw, 1992.</p> <p>3. Blicharski: Surface Engineering. Scientific and technical publishing house, Warsaw, 2009.</p>
	Supplementary literature	Głowacka, Zieliński: Materials Science. Scientific and technical publishing house, Gdańsk University of Technology, 2011.
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Obróbka powierzchniowa - Moodle ID: 31175</p> <p><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31175">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31175</a></p>
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	