



## Subject card

Subject name and code	Material science III, PG_00039878						
Field of study	Mechanical Engineering, Mechanical Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Materials Engineering and Bonding -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Szkodo					
	Teachers	dr inż. Artur Sitko mgr inż. Łukasz Pawłowski Dorota Rogala-Wielgus					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Materiałoznawstwo III MiBM studia stacjonarne - Moodle ID: 18167 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18167">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18167</a>						
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	15	4.0		6.0	25	
Subject objectives	Student knows materials and technological processes being in the field of subject. Student can identify of materials in terms of their microstructures. Student has knowledge regarding of heat treatments and thermochemical treatments of analyzed materials. Student knows the role of treatments in the context of their influence on properties and applications of analyzed materials.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W03] possesses and is able to practically apply the knowledge on the construction, properties and testing methods of construction materials				[SW3] Assessment of knowledge contained in written work and projects		
	[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				[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K6_U10] is able to formulate the principles of selecting a material for a construction, ensuring the correct operation of a device				[SU2] Assessment of ability to analyse information		
Subject contents	General programme of subject involves: Temper of steel, Tool steels, Stainless steel, Aluminium and copper alloys, Bearing steel, Repeating exercise, Final exercise.						
Prerequisites and co-requisites	Student should have basic knowledge about microstructural aspects connected with materials. Student should have basic knowledge about applied heat treatments. This knowledge should be obtained during the subject: Material Science I (1-year, I-semester).						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
		50.0%			100.0%		

Recommended reading	Basic literature	<p>Corporate work under the editorship of M. Głowacka, A. Zieliński. The basics of material science. Publisher PG, Gdansk, 2014.</p> <p>Corporate work under the editorship of J. Hucińska. Metal science. Publisher PG, Gdansk, 1995.</p> <p>Corporate work under the editorship of M. Głowacka. Metal science. Publisher PG, Gdansk, 1996.</p>
	Supplementary literature	W. Callister Jr., D. G. Rethwisch: Materials Science and Engineering: An Introduction, 10th Edition, 2018.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	