



## Subject card

Subject name and code	Introduction to Materials Science - laboratory, PG_00029486						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject				2022/2023	
Education level	second-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	1	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	prof. dr hab. inż. Maria Gazda					
	Teachers	Jagoda Budnik prof. dr hab. inż. Maria Gazda Arkadiusz Dawczak					
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						
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	1.0		9.0	25	
Subject objectives	The aim of the lecture is gaining the knowledge on fundamentals of materials engineering and construction and functional materials.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_U03	is able to put forward a research hypothesis, design an experiment to study materials. He can use properly selected measurement and laboratory methods and conduct research.			[SU1] Assessment of task fulfilment		
	K7_W05	knows the basic methods, techniques, tools and materials used in materials engineering, in particular when solving complex engineering tasks in the field of the basics of materials engineering.			[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Division and general characteristics of the materials. Of alloys. System phase balance iron carbon and iron-cementite. Alloys of iron with carbon steel, cast steel and cast iron. Heat treatment and thermo - chemical non-alloyed steels.						
Prerequisites and co-requisites	Knowledge of the lecture Fundamentals of Materials Science II.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Report from lab exercise	50.0%			50.0%		
	Preliminary test	50.0%			50.0%		

Recommended reading	Basic literature	<p>1. Blicharski M.: Inżynieria materiałowa. Stal. WNT, Warszawa 2004.</p> <p>2. Blicharski M.: Wstęp do inżynierii materiałowej. WNT, Warszawa 2004.</p> <p>3. Dobrzański L.A.: Podstawy nauki o materiałach i metaloznawstwo. WNT, Warszawa, 2002</p> <p>4. Grabski W., Kozubowski J.: Istota inżynierii materiałowej - geneza, istota, perspektywy. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2003.</p> <p>5. Praca zbiorowa pod red. M. Głowackiej i A. Zielińskiego: Metaloznawstwo. Wyd. Politechniki Gdańskiej, Gdańsk 2011 (strona sieciowa Politechniki Gdańskiej).</p>
	Supplementary literature	1. Dobrzański L.A.: Metalowe materiały inżynierskie. WNT Warszawa 2004 2. Przybyłowicz K.: Metaloznawstwo. WNT, Warszawa 2003.
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>1. Research metallographic</p> <p>2. Effect on the properties of the metal matrix graphite cast iron</p> <p>3. Draw the equilibrium phase diagram iron - cementite</p> <p>4. Selection of temperature hardening steel</p> <p>5. What is carried out carburizing</p>	
Work placement	Not applicable	