



Subject card

Subject name and code	Material science III, PG_00039396						
Field of study	Medical and Mechanical Engineering, Mechanical and Medical 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. Marcin Wekwejt				
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						
	Adresy na platformie eNauczanie: Materiałoznawstwo III IMM studia stacjonarne - Moodle ID: 18166 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18166						
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		3.0		7.0	25
Subject objectives	The aim of the course is gaining the knowledge in the field of Materials Science, esp. about of constuction and functional materials.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U07				[SU3] Assessment of ability to use knowledge gained from the subject		
	K6_W04				[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K6_U09				[SU1] Assessment of task fulfilment		
Subject contents	Classification and general characteristics of materials. Structure of metal alloys. The iron-carbon balance system. Phase components of iron-carbon system. Iron-carbon alloys: steels, cast-steel and cast iron. Heat and chemical treatment of unalloyed steels.						
Prerequisites and co-requisites	Knowledge from the lecture regarding the subject, e.g. Materials Science / Fundamentals of Materials Science.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
			50.0%		60.0%		
			50.0%		40.0%		

Recommended reading	Basic literature	<p>1. Głowackiej M. i Zielińskiego A. (red.): Materiałoznawstwo. WPG, 2011.</p> <p>2. Głowacka M. (red.): Metaloznawstwo - materiały do ćwiczeń laboratoryjnych. WPG, 1995.</p> <p>3. Blicharski M.: Inżynieria materiałowa: Stal. WNT, Warszawa 2004.</p> <p>4. Blicharski M.: Wstęp do inżynierii materiałowej. WNT, Warszawa 2004.</p> <p>5. Dobrzański L.A.: Podstawy nauki o materiałach i metaloznawstwo. WNT, Warszawa, 2002.</p>
	Supplementary literature	<p>1. Ashby M. et. al.: Materials Engineering. Elsevier, 2007.</p> <p>2. Ashy M. et al.: Engineering Materials. Elsevier, 2013.</p> <p>3. Callister W.D.: Materials science and engineering. Wiley, 2007.</p> <p>4. Schwartz M.: Encyclopedia of Smart Materials. Wiley, 2003</p>
	eResources addresses	<p>Materiałoznawstwo III IMM studia stacjonarne - Moodle ID: 18166 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18166</p>
Example issues/ example questions/ tasks being completed	<p>1. Draw the phase diagram of iron - cementite system.</p> <p>2. Select the proper temperature of annealing process for the given steel.</p> <p>3. Select the proper temperature of hardening process for the given steel.</p> <p>4. What is the purpose of the carburizing process?</p> <p>5. Characteristics of the main groups of steel.</p>	
Work placement	Not applicable	