GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Materials Science I, PG_00039919		
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	e-learning
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Materials Engineering and Bonding -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Artur Sitko	
	Teachers	dr inż. Artur Sitko dr inż. Marcin Wekwejt mgr inż. Ewa Kozłowska	

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: 45.0

Adresy na platformie eNauczanie:
Materiałoznawstwo I /lab/ ZiIP, st.I, sem.1 - Moodle ID: 11073
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=11073

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	6.0	49.0	100

Subject objectives

Transmition of basic knowledge regarding widely understanding materials science. Student learns about components of matter, chemical bonds, material microstructures. Student learns about chosen material properties and methods of theirs investigations. Student knows the important role of equilibrium diagrams on cristallization processes of alloys. Student can read theirs microstructures by using equilibrium diagrams. Student learns about manufacturing processes of materials, different types of heat treatments and also aspects connected with plastic working.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W02		[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge
K6_U01		[SU1] Assessment of task fulfilment
K6_K01		[SK5] Assessment of ability to solve problems that arise in practice

Subject contents

General programme of subject involves: Characterization of engineering materials, Material structure, Defect structure, Structure of metallic alloys, Equilibrium diagram of Fe-Fe3C, Mechanical properties of materials, Manufacturing processes of materials, Heat treatments of metallic materials, Plastic working of metallic materials, Iron alloys, Non-iron metallic alloys, Non-metallic materials, Degradation of materials.

Prerequisites and co-requisites

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	W. Callister Jr., D. G. Rethwisch: Materials Science and Engineering: An Introduction, 10th Edition, 2018. M. Ashby: Materials Selection in Mechanical Design. Second edition, Department of Engineering, Cambridge University, England, 1999.	
	Supplementary literature	W. Callister Jr , D. G. Rethwisch: Callister's Materials Science and Engineering, 2020	
	eResources addresses	Materiałoznawstwo I /lab/ ZiIP, st.I, sem.1 - Moodle ID: 11073 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=11073	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		