GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer Aided Materials Engineering, PG_00039926		
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	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
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 inż. Krzysztof Krzysztofowicz	
	Teachers	dr inż. Krzysztof Krzysztofowicz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	0.0	0.0	30

E-learning hours included: 0.0

Wspomaganie komputerowe w inżynierii materiałowej, W, TMiMK, sem.06, letni 22/23 (PG_00039926) - Moodle ID: 29668
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29668

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	30	6.0	14.0	50

Subject objectives

Aim of the subject is to provide the students knovledge on the computer aided materials engineering

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U10] is able to formulate the principles of selecting a material for a construction, ensuring the correct operation of a device	can formulate rules material selection for structures	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_W03] possesses and is able to practically apply the knowledge on the construction, properties and testing methods of construction materials	knows and practically apply the knowledge of structure, properties, and testing of properties of construction materials	[SW1] Assessment of factual knowledge
[K6_U03] is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools	applies software and other tools supporting the calculation during design of machines and processes	[SU4] Assessment of ability to use methods and tools

Subject contents

Enineering materials sources of information. Engineering materials databases. Bascis of computational materials engineering. Numerical methods application in phenomenon and phisical processes simulation in materials engineering and prediction of materials properties. Methods of creation of phase diagrams. Appliaction of computers in structural and properties of materials research. Acquisition and numerical analysis of masurement data.

Prerequisites and co-requisites

none

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Laboratory pass	50.0%	50.0%
Lecture pass	50.0%	50.0%

Recommended reading	Basic literature	1. Ashby M.F.: Dobór materiałów w projektowaniu inżynierskim. WNT. Warszawa 1998 2. Ashby M.F.: Materiały inżynierskie 1 i 2. WNT. Warszawa 1998 3. Dobrzański L.A.: Materiały inżynierskie i projektowanie materiałowe: podstawy nauki o materiałach i metaloznawstwo. WNT. Warszawa 2006
	Supplementary literature	1. Blicharski M.: Inżynieria materiałowa. Stal. WNT, Warszawa 2004. 2. Ciszewski B., Przetakiewicz W.: Nowoczesne materiały w technice. Wyd. Bellona, W-wa 1993. 3. Dobrzański L.A.: Podstawami nauki o materiałach i metaloznawstwo. WNT, Gliwice - Warszawa 2002. 4. Dobrzański L.A.: Metaloznawstwo z podstawami nauki o materiałach. WNT Warszawa 1996. 5. Dobrzański L.A.: Metalowe materiały inżynierskie. WNT Warszawa 2004.
	eResources addresses	
Example issues/ example questions/ tasks being completed	Find in databases propertioes of selcted materials	
Work placement	Not applicable	