



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							
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 knowledge 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	Engineering materials sources of information. Engineering materials databases. Basics of computational materials engineering. Numerical methods application in phenomenon and physical processes simulation in materials engineering and prediction of materials properties. Methods of creation of phase diagrams. Application of computers in structural and properties of materials research. Acquisition and numerical analysis of measurement 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	<p>1. Ashby M.F.: Dobór materiałów w projektowaniu inżynierskim. WNT. Warszawa 1998</p> <p>2. Ashby M.F.: Materiały inżynierskie 1 i 2. WNT. Warszawa 1998</p> <p>3. Dobrzański L.A.: Materiały inżynierskie i projektowanie materiałowe: podstawy nauki o materiałach i metaloznawstwo. WNT. Warszawa 2006</p>
	Supplementary literature	<p>1. Blicharski M.: Inżynieria materiałowa. Stal. WNT, Warszawa 2004.</p> <p>2. Ciszewski B., Przetakiewicz W.: Nowoczesne materiały w technice. Wyd. Bellona, W-wa 1993.</p> <p>3. Dobrzański L.A.: Podstawami nauki o materiałach i metaloznawstwo. WNT, Gliwice - Warszawa 2002.</p> <p>4. Dobrzański L.A.: Metaloznawstwo z podstawami nauki o materiałach. WNT Warszawa 1996.</p> <p>5. Dobrzański L.A.: Metalowe materiały inżynierskie. WNT Warszawa 2004.</p>
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Wspomaganie komputerowe w inżynierii materiałowej, W, TMiMK, sem.06, letni 22/23 (PG_00039926) - Moodle ID: 29668  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29668">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29668</a></p>
Example issues/ example questions/ tasks being completed	Find in databases properties of selected materials	
Work placement	Not applicable	