



Subject card

Subject name and code	Monographic lecture, PG_00039733						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	Subject group			Optional subject group		
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			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Materiałoznawstwa I Technologii Materiałowych -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Agata Lisińska-Czekaj				
	Teachers		dr hab. Agata Lisińska-Czekaj				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	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	To introduce students to the latest developments in the design, manufacture, shaping the properties and use of construction materials.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_K02	The student is able to present the development trends in the use of heat-resistant and creep-resistant materials in the industry			[SK5] Assessment of ability to solve problems that arise in practice		
	K6_U03	The student knows the groups of materials resistant to corrosion and wear and is able to indicate the criteria for their selection for industrial applications			[SU2] Assessment of ability to analyse information		
	K6_W08	The student is able to present the development trends in the use of heat-resistant and creep-resistant materials in the industry			[SW1] Assessment of factual knowledge		
	K6_U07	The student is able to access databases and obtain relevant literature data			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	Technological and industrial challenges in the field of sustainable development (conditions, choices, energy, advanced materials and nanotechnologies, climate protection, production, information and communication technologies, innovation, commercialization). Recent developments in the design, manufacture, development of properties and operation of materials for use in extreme conditions.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	written test		51.0%		100.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. Pampuch R., Materiały ceramiczne. Zarys nauki o materiałach nieorganiczno-niemetalicznych, WN PWN, Warszawa, 1988 2. Ciszewski B., Przetakiewicz W., Nowoczesne materiały w technice, Bellona, Warszawa 1993. 3. Blicharski M., Inżynieria materiałowa, stal. WNT Warszawa 2004. 4. Ashby M., Jones D., Materiały inżynierskie. Tom I Właściwości i zastosowanie. WNT, Warszawa 1995 5. Ashby M., Jones D., Materiały inżynierskie. Tom II Kształtowanie struktury i właściwości, dobór materiałów. WNT, Warszawa 1996 6. Blicharski M., Wstęp do inżynierii materiałowej. WNT, Warszawa 2004 7. Blicharski M., Inżynieria materiałowa. Stal. WNT, W-wa 2004. 8. Dobrzański L.A., Podstawy nauki o materiałach i metaloznawstwo. WNT, Gliwice-Warszawa 2002. 9. Dobrzański L.A., Metaloznawstwo z podstawami nauki o materiałach. WNT Warszawa 1996
	Supplementary literature	<ol style="list-style-type: none"> 1. Blicharski M., Inżynieria powierzchni, WNT Warszawa, 2009. 2. Dobrzański L.A., Metalowe materiały inżynierskie. WNT Warszawa 2004. 3. Grabski W., Kozubowski J., Istota inżynierii materiałowej geneza, istota, perspektywy. Oficyna Wyd. Politechniki Warszawskiej, Warszawa 2003
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Wykład monograficzny, W, TM, sem.06, letni 23/24 - Moodle ID: 37313 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37313</p>
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Technological challenges in the field of sustainable development. 2. Industrial challenges in the field of sustainable development. 3. Impact of technology on global warming. 4. Nuclear energy - safety and economy. 5. Renewable energy sources and problems to solve. 	
Work placement	Not applicable	