



Subject card

Subject name and code	Materials Science II, PG_00039395						
Field of study	Medical and Mechanical Engineering, Medical and Mechanical 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			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	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	Dorota Rogala-Wielgus mgr inż. Łukasz Pawłowski 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	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Additional information:						
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	5.0		40.0	75	
Subject objectives	The aim of the lecture is to introduce the students with selected issues of modern materials engineering						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U09		The student can compare the basic properties of materials in terms of their suitability for a specific application		[SU2] Assessment of ability to analyse information		
	K6_U07		The student is able to correctly formulate a simple engineering problem		[SU2] Assessment of ability to analyse information		
	K6_W04		The student can indicate the essential properties of non-ferrous alloys.		[SW1] Assessment of factual knowledge		
Subject contents	Non-ferrous alloys. Aluminum and its alloys. Titanium and its alloys. Copper and its alloys. Zirconium and its alloys. Tool and bearing steels. Corrosion-resistant steels. Thermo-chemical treatment						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Colloquium from the lecture		51.0%		50.0%		
	Laboratory classes		100.0%		50.0%		
Recommended reading	Basic literature		<ol style="list-style-type: none"> 1. Michael Ashby, Hugh Shercliff and David Cebon, <i>Materials Engineering, Science, Processing and Design</i>, Elsevier Ltd, 2007 2. Michael Ashby, David Jones, <i>Engineering Materials 1, An Introduction to Properties, Applications, and Design</i>, Elsevier Ltd, 2012 3. Michael Ashby, David Jones, <i>Engineering Materials 2, An Introduction to Microstructures and Processing</i>, Elsevier Ltd, 2013 4. W. D. Callister, Jr., <i>Materials science and engineering, an introduction</i>, 7th ed., Wiley, 2007, ISBN 0-471-73696-1. 				

	Supplementary literature	<ol style="list-style-type: none"> 1. A.J. Moulson, , J.M. Herbert, Electroceramics, Materials Properties and Applications, Chapman and Hall, 1990 2. R. Pampuch, An Introduction to Ceramics, Springer International Publishing Switzerland, 2014
	eResources addresses	
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Non-ferrous metals. Definition of metal alloy and alloying additives. Classification of non-ferrous alloys. 2. Characteristics of tool steels. 3. Thermo-chemical treatment. 	
Work placement	Not applicable	