



Subject card

Subject name and code	Materials Technology, PG_00040170						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2026/2027	
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				English	
Semester of study	2	ECTS credits				3.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Department of Materials Engineering and Bonding -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Tomków					
	Teachers						
Lesson types	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	5.0	40.0	75		
Subject objectives	Students learn the basic techniques of manufacturing castings and metal forming techniques. She/he conducts practical experiments illustrating changes in the shape and properties of plastically processed materials. She/he gets to know methods of material properties research.						
Learning outcomes	Course outcome	Subject outcome				Method of verification	
	K6_W03	K6_W03 possesses and is able to practically apply the knowledge on the construction, properties and testing methods of construction materials				[SW1] Assessment of factual knowledge	
	K6_W08	K6_W08 possesses basic knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle				[SW2] Assessment of knowledge contained in presentation	
	K6_U10	K6_U06 is able to use mathematical and physical models for analysing the processes and phenomena occurring in mechanical devices within the range of material strength, thermodynamics and fluid mechanics				[SU2] Assessment of ability to analyse information	
Subject contents	Course content – lecture Metal production processes, casting processes, casting defects, methods of metal forming, ways of shaping the product, changes in the properties of metals during metal forming.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Test (lectures)	50.0%			50.0%		
	Laboratories	50.0%			50.0%		

Recommended reading	Basic literature	<p>1. Modeling of Metal Forming and Machining Processes: By Finite Element and Soft Computing Methods by Prakash M. Dixit.</p> <p>2. Mechanics Modeling of Sheet Metal Forming by Sing C. Tang.</p> <p>3. Sheet Metal Forming: Processes and Applications by Taylan Altan, A. Erman Tekkaya</p>
	Supplementary literature	<p>1. Technologia metali laboratorium</p> <p>by Robert Skoblik, Lech Wilczewski (in Polish)</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	Casting methods, casting defects, description of metal forming processes.	
Practical activities within the subject	Not applicable	

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