GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Materials Technology, PG_00040170		
Field of study	Mechanical Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
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 -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Tomków	
	Teachers		

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	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_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
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_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

Subject contents

Metal production processes, casting processes, casting defects, methods of meta 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
Laboratories	50.0%	50.0%
Test (lectures)	50.0%	50.0%

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

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