



Subject card

Subject name and code	Materials Technology, PG_00040170						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2023/2024		
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						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Jacek Tomków				
	Teachers		dr hab. inż. Jacek Tomków Balazs Varbai				
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	<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	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Casting methods, casting defects, description of metal forming processes.	
Work placement	Not applicable	