GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Materials and Civilisation Development, PG_00058988		
Field of study	Materials Engineering, Materials Engineering, Materials Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Humanistic-social subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	5.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Technologii Materiałów Konstrukcyjnych i Spajania -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Krzysztofowicz	
	Teachers	dr inż. Krzysztof Krzysztofowicz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	30.0	0.0	0.0	60

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	60	5.0	60.0	125

Subject objectives

To familiarize students with the importance of materials in social, cultural and technical development. Presentation of current achievements in materials engineering.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U01	can use properly selected analytical methods	[SU1] Assessment of task fulfilment
K6_W08	has basic knowledge of development trends	[SW1] Assessment of factual knowledge
K6_K01	understands the need to improve professional and personal competences	[SK3] Assessment of ability to organize work
K6_U07	can obtain information from various sources	[SU1] Assessment of task fulfilment
K6_W10	has basic knowledge of quality management	[SW1] Assessment of factual knowledge

Subject contents

The concept of engineering materials and their division. Definition of civilization, known civilizations in the history of mankind, historical eras. The history of the use of stone from the Paleolithic to the present day; the use of stone in agriculture and weapons production, the development of housing. Invention and application of household ceramics. The use of wood by civilizations; the history of the development of watercraft and flying machines, the use of wood in the production of weapons, agricultural tools, everyday life. Other prehistoric materials: animal bones and skins. The Copper and Bronze Age: metal smelting, production of utility items, the importance of copper and bronze products in the development and decline of civilization. The use of gold and silver by civilizations. The Iron Age: the production of welded iron, the development of heat and thermo-chemical treatment, the emergence of large-scale manufacturing technologies, the emergence of modern smelting methods. The present: the use of other metals and their influence on the development of civilization. The use of natural polymers in the history of mankind, the invention of artificial polymers and their importance for the present civilization. Development of electronic and magnetic functional materials. The importance of the development of research methods and the emergence of materials engineering. Forecast of further development of materials. The role of polymers in the development of civilization. Laboratory The use of various materials by man: in chronological (historical) terms. Division of engineering materials and their general properties. Applications of the main groups of engineering materials. History of metallurgy of ferrous alloys with examples of products and metallographic observations of their structure. Historical examples of polymers. Examples of functional electronic and magnetic materials in historical terms.

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	zaliczenie	100.0%	40.0%
	kolokwium	60.0%	60.0%
Recommended reading	Basic literature	Leszek A. Dobrzański, Podstawy nauki o materiałach i metaloznawstwo, Wydawnictwa Naukowo-Techniczne 2002	
	Supplementary literature	Journals in the literature databases of the GUT library	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		