GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00058704		
Field of study	Materials Engineering, Materials Engineering, Materials Engineering		
Date of commencement of studies	February 2023	Academic year of realisation of subject	2022/2023
Education level	second-cycle studies	Subject group	Optional subject group 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	1	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Zakład Elektrochemii i Fizykochemii Powierzchni -> Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Natalia Wójcik	
	Teachers	dr hab. inż. Natalia Wójcik	

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	15.0	50

Subject objectives

Learning about modern amorphous materials and technological issues related to their application.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_W03	The student knows the theoretical basis of the science of amorphous materials. The student knows the basic applications of modern amorphous materials and glassy composites.	[SW1] Assessment of factual knowledge
K7_U03	The student independently designs the synthesis of amorphous materials for special applications, prepares them and tests their properties using laboratory equipment.	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information

Subject contents

- Special properties of glass materials.
- Special glasses and glass-ceramic composites: bioglass, oxynitride glass, ferroelectrics, ferromagnetics, multiferroics, spin glasses, non-linear materials

Prerequisites and co-requisites

Basic knowledge of glass production and properties required.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
laboratory	50.0%	30.0%
assignment and presentation	50.0%	70.0%

Recommended reading

Basic literature	• Introduction to Glass Science and Technology, James E. Shelby, The Royal Society of Chemistry 2005 • Materials Science and Technology Glasses and Amorphous Materials, Vol. 9, Volume Editor J. Zarzycki
Supplementary literature	N/A

	eResources addresses	Adresy na platformie eNauczanie: Szkła specjalne - Moodle ID: 29069 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29069
Example issues/ example questions/ tasks being completed	1. What is bioglass and what properties should it have? 2. Where are bioglasses used?	
Work placement	Not applicable	