



Subject card

Subject name and code	, PG_00070382						
Field of study	Materials Engineering, Materials Engineering						
Date of commencement of studies	October 2024	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	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			5.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Agnieszka Witkowska					
	Teachers	dr hab. inż. Agnieszka Witkowska dr hab. inż. Aleksandra Mielewczyk-Gryń dr hab. inż. Jakub Karczewski					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	45.0	6.0	51
	E-learning hours included: 0.0						
eNauczanie source addresses: Moodle ID: 3167 Metody badań materiałów - projekt zespołowy https://enauczanie.pg.edu.pl/2025/course/view.php?id=3167							
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	51		4.0		70.0	125
Subject objectives	Preparing to work in a group by carrying out a project consisting of a team analysis of an issue in the field of functional materials, presenting a proposal of a solution of the problem using various microscopic, spectroscopic and thermal analysis methods, performing tests/measurements and preparing a report and presentation on the team's work results.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U01] Can properly use selected analytical, simulation and experimental methods, as well as devices for measuring the fundamental properties of materials and technological processes.	The student has the knowledge and skills needed to work in a physics laboratory, select appropriate experimental methods and conduct research and measurements as well as engineering work related to the implemented project task.	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
	[K6_U10] Can work in a group in order to solve problems typical of materials engineering.	When implementing and developing a group project in the field of materials engineering, the student works in a team of 2 or 3 people, thus acquiring the ability to cooperate in a team and to collectively develop and prepare a report and presentation of the results obtained during the project.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task
	[K6_U03] Can critically analyze and evaluate the functioning – particularly in the context of materials engineering –existing technical solutions, particularly equipment, objects, systems, processes.	When implementing and developing a group project in the field of materials engineering, the student is able to develop a proposal for its solution/ implementation based on a critical analysis of the functioning of devices and the possibilities of research techniques in the field of microscopy, spectroscopy and thermal analysis methods.	[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information
Subject contents	<p>Course content – project The team projects being implemented concern issues in the field of experimental materials engineering and are focused on the study of the structural properties of functional materials and the correlation of these properties with other physicochemical properties. During the implementation of the project, each team has at its disposal research equipment available in the CNA laboratories.</p> <p>Course content – seminar</p> <ul style="list-style-type: none"> • Presentation of proposed research topics and problems to be analyzed and investigated as part of the team project. • Brainstorming searching for appropriate methods and tools. • Development of a methodology and implementation schedule for selected team projects. • Presentation and discussion of the results of the team projects. 		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Preparation of the slideshow and oral presentation of the project results	100.0%	20.0%
	Development of a methodology and schedule for project implementation and project realization	100.0%	80.0%
Recommended reading	Basic literature	Scientific literature and specialist reports related to the group project.	
	Supplementary literature	Scientific literature and specialist reports related to the group project.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Resorbability study of bioglasses and bioceramics used in implantology. 2. The microscopic beauty of air pollution. 3. Baltic amber (succinite) vs other fossil resins. 4. Characteristics of thin CVD-grown films on RVC electrodes for the use in an electrolyzer. 5. Influence of the synthesis procedure on the structure of YBCO and its levitation properties 		
Practical activities within the subject	Not applicable		

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