GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00070441		
Field of study	Materials Engineering, Materials Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Optional subject group 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	2	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Polymer Technology -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Michał Strankowski	
	Teachers	dr hab. inż. Michał Strankowski	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 3639 Polimery w sporcie „nic Ciebie nie zatrzyma”
https://enauczanie.pg.edu.pl/2025/course/view.php?id=3639

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	15	1.0	9.0	25

Subject objectives

The aim of the course is to familiarize students with the latest solutions used in both amateur and professional sports concerning the use of modern polymer materials. In addition, students will be introduced to a wide range of engineering polymer materials (including composites and nanocomposites) used in sports.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K71] is conscious of the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment	The student is able to define the basic groups of polymer materials and knows their possible applications.	[SK4] Assessment of communication skills, including language correctness
[K6_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems in a social environment	The student makes proper use of the acquired knowledge concerning modern polymer materials.	[SU2] Assessment of ability to analyse information
[K6_W71] has general knowledge in humanistic, social, economic or legal sciences	The student has information about polymer materials used in sports.	[SW1] Assessment of factual knowledge
[K6_K01] Understands the need to improve professional and personal competencies; is conscious of own limitations and knows when to turn to experts, properly establishes priorities helping to accomplish tasks defined by oneself or others.	The student demonstrates readiness to critically evaluate knowledge in the field of modern polymer materials; understands the need to constantly follow technological innovations in sports equipment and is aware of the limits of their own competence in designing complex composites, being able to seek the opinion of experts (e.g., processing technologists or biomechanics) when implementing engineering projects.	[SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Do you run, cycle, or swim? During these activities, you're sure to be using modern polymer materials.
Thanks to the many advantages of polymer materials, you'll run faster and longer, cycle at higher speeds and cover greater distances, and swim more freely without getting tired.
The lecture will present modern solutions for plastics that are used in various sports.
It'll provide an accessible overview of the types of polymer materials, how they're manufactured, their applications, and their properties, which are often used in both professional and recreational sports.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Pass</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>-</td></tr><tr><td>Supplementary literature</td><td>Online literature databases related to polymer materials used in sports.</td></tr><tr><td>eResources addresses</td><td>Supplementary
https://www.futurelearn.com/info/courses/everyday-chemistry/0/steps/22344 - -
https://www.futurelearn.com/info/courses/everyday-chemistry/0/steps/22346 - -
https://www.futurelearn.com/info/courses/everyday-chemistry/0/steps/22348 - -
http://www.aquimicadascoisas.org/en/?episodio=the-chemistry-of-sporting-goods - -</td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Classification of modern polymer materials and their applications in sports.
2. Modeling materials for use in various sports disciplines.
3. Modern polymer accessories supporting higher performance in sports disciplines.
4. The protective role of polymer materials used in sports.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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