



Subject card

Subject name and code	, PG_00065839						
Field of study	Polimerowe materiały konstrukcyjne						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		Specialty 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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Polymer Technology -> Faculty of Chemistry -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Janusz Datta				
	Teachers		prof. dr hab. inż. Janusz Datta				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45		5.0		50.0	100
Subject objectives	Indication of work on a database of polymeric construction materials for the choice of optimal material and method of production of the technical product, stress analysis and creating technical elements at engineering drawings.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U03] Can formulate a research hypothesis, design an experiment needed to prove it and use properly selected measuring and laboratory methods.		The student is able to formulate a research hypothesis and plan an experiment to confirm it.		[SU4] Ocena umiejętności korzystania z metod i narzędzi		
	[K7_U04] Can undertake a detailed analysis of the obtained results and develop a technical report or presentation, also in English.		The student is able to analyze the obtained results and process them appropriately.		[SU2] Ocena umiejętności analizy informacji		
	[K7_W01] Has extended knowledge of the fields of science and scientific disciplines relevant to materials engineering, and their historical development and importance for the progress of exact and natural sciences, knowledge of the world and evolution of humanity.		The student has knowledge in the field of materials engineering and recognizes its importance for the development of humanity.		[SW2] Ocena wiedzy zawartej w prezentacji		
Subject contents	Course content – lecture Review of construction polymeric materials. Definition of property of engineering materials. Mechanical proprieties: critical coefficient intensities of tensions, logarithmic dekrement suppressions, coefficient of fatigue. Thermal proprieties: thermal conductivity, heat capacity, glass transition temperaure, melting temperature, resistance to thermal shocks, coefficient of leveling of temperature. Ways of presentations of properties of construction materials. Graphs of selection of material: Young Module- Density, Tensile Strength Density, Young Module Tensile Strength . Selection of material regardless the shape of section of manufactured product. Coefficients of functionality. Examples. Procedure for estimation of functionality coefficients. Maximalizing functionality criteria. Selection of polymeric materials for flexible construction parts. Shape coefficients. Functionality coefficients with regarding of shape. Examples. Methods of production and design. Production method influence on product design.						
	Course content – laboratory Using a computer program to carry out an iterative process of selecting material for a specific product						

Prerequisites and co-requisites	General knowledge of polymeric materials. Basic knowledge of material strength and of technical drawing		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	tests + raports	100.0%	50.0%
	test	50.0%	50.0%
Recommended reading	Basic literature	1)Ashby M.F., Dobór materiałów w projektowaniu inżynierskim, WNT, Warszawa 1998 2)Żuchowska D., Polimery konstrukcyjne, WNT, Warszawa 1995. 3)Ward J.M., Mechaniczne własności polimerów jako tworzyw konstrukcyjnych, PWN, Warszawa 1975.	
	Supplementary literature	Poradnik: Konstrukcje z tworzyw sztucznych, WEKA Sp.z.o.o.,Warszawa 2000.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Practical activites within the subject	Not applicable		

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