GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Introduction to Polymer Technology, PG_00035962		
Field of study	Chemical Technology		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2023/2024
Education level	first-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	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Polymers Technology -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Józef Haponiuk	
	Teachers		

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	40.0	75

Subject objectives

To acquaint students with the basic types, processing methods, properties and applications of polymeric materials.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U07	The student knows the industrial methods of processing thermoplastics, elastomers and rubber as well as chemosetting and thermosetting resins.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
K6_W09	The student knows the physicochemical and processing properties commonly. thermoplastics, thermosets and elastomers used, and can indicate their use and appropriate recycling methods	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation

Subject contents

Characteristics and classification of plastics according to their chemical and physical structure and the methods of their production. Polymers of special technical importance: polyolefins, polyamides, polyesters, polyurethanes, vinyl polymers. Elastomers. Resins and composites and polymer nanocomposites. Natural polymers. Polymers for special applications, including biomedical ones. Special physicochemical properties of plastics and methods of their determination.Phase states and characteristic transition temperatures. Viscoelasticity, time-temperature dependencies of mechanical properties. Basic methods of modification and processing of polymers. Recycling of plastics.

Prerequisites and co-requisites

Basic knowledge of organic chemistry

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Laboratory tests and reports	50.0%	50.0%
Lectures - final test	50.0%	50.0%

Recommended reading	Basic literature	1. Praca zbiorowa, Tworzywa sztuczne w praktyce, red. J.T, Haponiuk, Verlag Dashöfer, Warszawa 2007. 2. Danuta Żuchowska, Polimery konstrukcyjne, WNT 2001 3. Irma Gruin, Materiały polimerowe, PWN, Warszawa, 2003.
	Supplementary literature	1. Jan F. Rabek, Budowa strukturalna polimerów i metody badawcze. Współczesna wiedza o polimerach. Tom 1. PWN 2017.
	eResources addresses	
Example issues/ example questions/ tasks being completed	Technical methods of conducting block polymerization.Technical methods of conducting polymerization in solution.Technical methods of suspension polymerization.Technical methods of emulsion polymerization.Polymer recycling methods.Processing methods of thermoplastic polymers.Processing methods of cross-linked polymers and rubber.	
Work placement	Not applicable	