GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	CHEMISTRY AND TECHNOLOGY OF POLYMERS, PG_00036531		
Field of study	Chemistry		
Date of commencement of studies	October 2021	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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Polymer Technology -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Justyna Kucińska-Lipka	
	Teachers	dr hab. inż. Justyna Kucińska-Lipka dr inż. Maciej Sienkiewicz dr inż. Marcin Włoch dr inż. Ewa Głowińska	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	15.0	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	25.0	75

Subject objectives

The aim of the course is to familiarize students with the basic knowledge of macromolecular compounds,methods of their preparation, testing, properties and application.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U06] can analyze the functioning of equipment, apparatus and technology lines used in laboratories and chemical industry, and can recognize and propose methods to solve the simple engineering tasks which he can meet as an Engineer and select and use routine methods, chemical apparatus and tools to solve practical engineering tasks, including also technological processes; can himself/herself read and make technical drawings using CAD software	The student is able to choose a method processing to the group of polymers	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment
[K6_U01] knows how to get information from literature, databases and other sources, can integrate the information obtained, interpret and critically evaluate it, and draw conclusions, and to formulate and justify the opinions	The student is able to search from databases data information about polymers, syntheses and new techniques for their modification	[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K6_W07] has knowledge about basic polireactions making possible the production of various macromolecular compounds, including the idea of creating blends and polymer composites for specific applications	The student is able to name which types of polirements can be obtained polymer and from what monomers	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	Basic terms: mer, monomer, oligomer, polymer, dispersibility, types of bonds in the main chain, macromolecular compounds and polymers, thermo resins and chemoplasts. Classification of monomers and polyreactions. Radical polyaddition, polyaddition, polycondensation, anionic, cationic and coordination polymerization stages. Copolymerization and types of copolymers: statistical, block, graft, dendrimers, starry copolymer etc. Characteristics and examples of practical applications of thermoplastics, thermo and chemically hardenable compounds, elastomers, rubbers, rubbers, - technologies of their preparation. Parameters and methods characterizing their properties.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
	60.0%	40.0%
	60.0%	60.0%

Recommended reading

Basic literature	1. Łączyński B.: Tworzywa wielkocząsteczkowe, WNT 19832. Florjańczyk Z , Chemia zw. wielkocząsteczkowych,W-wa 19953. Stevens P., M.: Wprowadzenie do chemii polimerów, PWN 1983
Supplementary literature	1. Przygocki, Metody fizyczne badań polimerów, PWN 1994
eResources addresses	Adresy na platformie eNauczanie: 2023 Chemia i technologia polimerów -Chemia - Moodle ID: 20042 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=20042

Example issues/ example questions/ tasks being completed	Proszę podać przykłady monomerów nienasyconych oraz polimerów z nich otrzymanych. Podział monomerów. podaj wszystkie etapy otrzymywania polistyrenu, polichlorku winylu i innych monomerów nienasyconych. Przykłady otrzymywania polieterów, poliestrów itp.
Work placement	Not applicable

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