GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Technology of Polymer Syntheses, PG_00039718		
Field of study	Materials Engineering, Materials Engineering, Materials Engineering, Materials Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
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 n/a
Semester of study	6	ECTS credits	4.0
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	dr hab. inż. Łukasz Piszczyk	
	Teachers	dr hab. inż. Łukasz Piszczyk dr inż. Paulina Kosmela 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	30.0	0.0	0.0	60

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	60	5.0	35.0	100

Subject objectives: The student has knowledge about polymerization and technological methods of obtaining polymeric materials

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_K01	The student understands the need to increase competence and professional experience	[SK3] Assessment of ability to organize work [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work
K6_W07	The student has knowledge about materials and their properties	[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation
K6_U03	The student has knowledge of materials engineering and is able to select apparatus and perform analyses in an appropriate way.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
K6_U02	The student has knowledge about materials and their properties	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools

Subject contents

Basic concepts: monomers, oligomers, natural and synthetic polymers, amorphous polymers and crystalline, polydispersity. Types of polireactions. Radical polymerization, initiators and reactions chemical reactions occurring in the chain initiation, growth and completion processes. Polymerization coordination - reactions taking place in the process of initiation, growth and ending of the chain.
Ion polymerization - reactions occurring in the process of chain initiation, growth and ending.

Prerequisites and co-requisites

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exam	60.0%	60.0%
	Laboratory	100.0%	40.0%
Recommended reading	Basic literature	1. Praca zbiorowa pod redakcją Z. Floriańczyka i S. Penczka, Chemia polimerów tom 1. Makrocząsteczki i metody ich otrzymywania. Oficyna Wydawnicza Politechniki Warszawskiej, W-wa 1995. 2. Pielichowski J., Chemia polimerów, WNT Kraków 2004.	
	Supplementary literature	1. Jan F. Rabek, Współczesna wiedza o polimerach, PWN, Warszawa, 2008.	
	eResources addresses	Adresy na platformie eNauczanie: Technologie syntezy polimerów_lato 2023 - Moodle ID: 30140 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30140	
Example issues/ example questions/ tasks being completed	1. Discuss the methods of synthesis of polyethylene. 2. Discuss radical polymerization using a selected polymer example. 3. Living polymerization. 4. Polymerization in bulk vs. in suspension - give main differences		
Work placement	Not applicable		