



Subject card

Subject name and code	Technology of Polymer Syntheses, PG_00039718						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
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 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						
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_U02		The student has knowledge about materials and their properties		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	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_W07		The student has knowledge about materials and their properties		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
	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		
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		
	Laboratory		100.0%		40.0%		
	Exam		60.0%		60.0%		

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:
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	