



Subject card

Subject name and code	Special Purpose Polymeric Materials, PG_00039601						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2022	Academic year of realisation of subject				2021/2022	
Education level	second-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	1	Language of instruction				Polish	
Semester of study	1	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. Janusz Datta				
	Teachers		dr hab. inż. Łukasz Piszczyk prof. dr hab. inż. Janusz Datta dr hab. inż. Justyna Kucińska-Lipka dr hab. inż. Michał Strankowski dr inż. Paulina Parcheta-Szwindowska dr inż. Łukasz Zedler dr inż. Maciej Sienkiewicz 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	0.0	0.0	15.0	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	Providing knowledge on polymers and biopolymers for special applications, used in machine construction, electrical engineering and electronics, and in biomedical applications.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_K82] is equipped to participate actively in lectures, seminars and laboratory classes conducted in foreign language	The student is able to prepare a presentation in English on the application of polymers and understand the content of the lectures on this subject, delivered in English.			[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness		
	K7_W06	The student knows the physical basics of determining the physicochemical parameters used to classify and evaluate the functionality of polymeric materials.			[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
	K7_U01	The student is able to collect and critically present practical information on the properties and applications of various types, including commercial varieties of plastics			[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		
	K7_W05	The student is able to select the appropriate polymeric materials for specific engineering applications.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		

Subject contents	Polymer engineering plastics for electrical and electronic applications. Polymers used in the automotive industries. Liquid crystal polymers. Shape memory polymers. Modern self-healing materials. Polymers in medicine. Conductive polymers. Natural plant polymers (starch, cellulose). Polymers in the food industry. Organic-inorganic polymers. Modern thermal insulation materials. Heat-resistant polymers (properties, application, etc.). Geotextiles and geomembranes.											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Subject passing criteria</th> <th style="width:30%;">Passing threshold</th> <th style="width:30%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Lectures - test examination</td> <td>50.0%</td> <td>50.0%</td> </tr> <tr> <td>seminar - evaluation of the presentation</td> <td>50.0%</td> <td>50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lectures - test examination	50.0%	50.0%	seminar - evaluation of the presentation	50.0%	50.0%
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Recommended reading	Basic literature	Tytuł: Polimery Podtytuł: Otrzymywanie, metody badawcze i zastosowania. Autor: Rabek Jan F. Wydawnictwo: Wydawnictwo Naukowe PWN ISBN: 9788301173876 Języki: polski Rok wydania: 2016										
	Supplementary literature	scientific literature data bases										
	eResources addresses											
Example issues/ example questions/ tasks being completed	1. Insulating properties of polymeric materials.2. Application of polymers in road and rail vehicles.3. Applications of conductive composites.4. Polymer nanocomposites in the packaging industry.6. The use of polymers in prosthetics and tissue engineering.7. Polymers in construction.											
Work placement	Not applicable											