



Subject card

Subject name and code	Methods of Polymers Instrumental Analysis, PG_00039600						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2023		Academic year of realisation of subject		2022/2023		
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		exam		
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. Ewa Głowińska dr hab. inż. Michał Strankowski				
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	The aim of the course is to teach the students new methods of polymers' instrumental analysis.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_W05		Student is capable to choose proper techniques to solve engineering problems.		[SW1] Assessment of factual knowledge		
	K7_U01		Student knows the interpretation of instrumental analysis, student knows the literature concerning analysis of the polymers.		[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment		
	[K7_K82] is equipped to participate actively in lectures, seminars and laboratory classes conducted in foreign language		Student knows methods for polymers analysis and knows how to interpret the results.		[SK2] Assessment of progress of work [SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice		
	K7_W01		Student knows how to choose proper techniques to obtain desired information to solve the problem.		[SW1] Assessment of factual knowledge		
Subject contents	NMR, IR analysis, thermo-mechanical properties and morphology of the polymers.						
Prerequisites and co-requisites	Knowledge concerning mechanical and thermal properties of the polymers.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Lecture		60.0%		60.0%		
	Seminar		100.0%		40.0%		

Recommended reading	Basic literature	Zieliński W.: Metody spektroskopowe i ich zastosowanie do identyfikacji związków organicznych, Wydawnictwo Naukowo-Techniczne, Warszawa 2001
	Supplementary literature	Journals Polimery, journals of ACS
	eResources addresses	Adresy na platformie eNauczanie: Metody analizy instrumentalnej polimerów - Moodle ID: 30144 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30144
Example issues/ example questions/ tasks being completed	1. Interpretation of NMR, IR spectra 2. Analysis of DMTA, TGA, DSC data 3. Analysis of polymers morphology using microscopy techniques	
Work placement	Not applicable	