



Subject card

Subject name and code	Methods of Polymers Instrumental Analysis, PG_00039600						
Field of study	Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2023/2024		
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				
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_W01	Student knows how to choose proper techniques to obtain desired information to solve the problem.			[SW1] Assessment of factual knowledge		
	[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.			[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills [SK2] Assessment of progress of work		
	K7_U01	Student knows the interpretation of instrumental analysis, student knows the literature concerning analysis of the polymers.			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
	K7_W05	Student is capable to choose proper techniques to solve engineering problems.			[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		
	Seminar		100.0%		40.0%		
	Lecture		60.0%		60.0%		
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:				

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