



Subject card

Subject name and code	Manufacturing Polymer Elements, PG_00055493						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
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		
Semester of study	5		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Sławomir Szymański				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	15.0	0.0	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		7.0		48.0	100
Subject objectives	Acquiring knowledge of the methods of manufacturing products from polymeric materialsThe ability to design nests and production lines for the production of polymer products						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W03] possesses and is able to practically apply the knowledge on the construction, properties and testing methods of construction materials		The student knows the methods of manufacturing products from polymeric materials The student knows the machines, tools and raw materials used in the processing of polymers		[SW1] Assessment of factual knowledge		
	[K6_U10] is able to formulate the principles of selecting a material for a construction, ensuring the correct operation of a device		the student is able to analyze the technological performance of a polymer product and select the optimal material and choose the appropriate technological process		[SU1] Assessment of task fulfilment		
	[K6_U04] is able to perform a critical analysis of the existing technical solutions, present the specification of the technology of manufacturing basic construction elements of machines and engineering assemblies		The student is able to design a production line and an automated production cell for the production of polymer products		[SU1] Assessment of task fulfilment		
Subject contents	1. classification of polymeric materials2. Methods of manufacturing products from polymers (injection, extrusion, pressing, calendering, thermoforming, casting3. Construction of tools for processing polymers (molds and heads)4 Automation and robotization of technological processes						
Prerequisites and co-requisites	knowledge of materials science						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	60.0%	30.0%
	raport	60.0%	20.0%
	test	60.0%	50.0%
Recommended reading	Basic literature	1.Robert Sikora:, Przetwórstwo tworzyw polimerowych, WydawnictwoPolitechniki Lubelskiej, Lublin 20062. 2.W. Korszak: Technologia tworzyw sztucznych, WNT Warszawa,1981	
	Supplementary literature	1. Sachtling. Tworzywa Sztuczne -poradnik, WNT Warszawa, 1995	
	eResources addresses	Adresy na platformie eNauczanie:	
	Example issues/ example questions/ tasks being completed	1. Characterize the injection process2. Present the project of a line for the production of PE pipes3. Design a thin-walled molding	
Work placement	Not applicable		