



Subject card

Subject name and code	Manufacturing Polymer Elements, PG_00055493						
Field of study	Mechanical 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		
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	dr inż. Tomasz Seramak dr inż. Sławomir Szymański					
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 materials The 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	<p>1. classification of polymeric materials 2. Methods of manufacturing products from polymers (injection, extrusion, pressing, calendering, thermoforming, casting) 3. Construction of tools for processing polymers (molds and heads) 4 Automation and robotization of technological processes</p>						
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	<p>1. Robert Sikora., Przetwórstwo tworzyw polimerowych, Wydawnictwo Politechniki Lubelskiej, Lublin 20062.</p> <p>2. W. Korszak: Technologia tworzyw sztucznych, WNT Warszawa, 1981</p>	
	Supplementary literature	1. Sachtling. Tworzywa Sztuczne - poradnik, WNT Warszawa, 1995	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>1. Characterize the injection process 2. Present the project of a line for the production of PE pipes 3. Design a thin-walled molding</p>		
Work placement	Not applicable		