



Subject card

Subject name and code	Environment protection, PG_00020943						
Field of study	Nanotechnology						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2020/2021		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study 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		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Materials Engineering and Bonding -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Hanna Smoleńska				
	Teachers		dr inż. Hanna Smoleńska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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	15		1.0		9.0	25
Subject objectives	Make students aware of the impact of manufacturing activities on the environment. The promotion of the proecological behavior in professional and every day life.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K71] is conscious of the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment						
	K6_U10		The student is aware of the impact of nanomaterials on the environment at every stage of the life cycle		[SU5] Assessment of ability to present the results of task		
Subject contents	Environment impacts – sources, types and results; Life cycle analyse (LCA) of products; definitions, main steps, results and their interpretation; EKO points method; evaluation methods and applications (examples); EKO points for product and for process; Environment conservation from the cradle to the grave of product. Case studies for some materials and products Ecodesign and greendesign.						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Writing test	60.0%	100.0%
Recommended reading	Basic literature	1. W. Adamczyk; Ekologia wyrobów; PWE 2004 2. Z. Kowalski, J. Kulczyńska, M. Góralczyk; Ekologiczna ocena cyklu życia procesów wytwórczych (LCA), PWN 2007 3. K. Małachowski; Gospodarka a środowisko i ekologia, CeDeWu, 2011 4. Z. Wnuk; Ekologia i ochrona środowiska. Wybrane zagadnienia., Wydawnictwo Uniwersytetu Rzeszowskiego, 2011	
	Supplementary literature	1. A. Johansson; Czysta technologia. Środowisko technika przyszłość, WNT 1997	
	eResources addresses		
Example issues/ example questions/ tasks being completed	The life cycle of the selected product.		
	Types of impacts on the environment at the stage of manufacture of the selected material.		
	The use of ecodesign principles on the example of the selected product.		
Work placement	Not applicable		