



Subject card

Subject name and code	Ecological Aspects of Polymer Package Recycling, PG_00036309						
Field of study	Green Technologies						
Date of commencement of studies	October 2020	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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Polymers Technology -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Justyna Kucińska-Lipka				
	Teachers		dr hab. inż. Justyna Kucińska-Lipka				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
Additional information:							
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	30		2.0		18.0	50
Subject objectives	The aim of the course is to familiarize students with the ecological aspects of recycling of packaging materials used in the pharmaceutical, medical and food industries, with issues related to the recycling of packaging materials, types of plastics used in various industries, as well as with legal acts normalizing the recycling process of these materials. Students will gain knowledge of ecological alternatives used in industry						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W04] is aware of the importance of environmental protection and has a basic knowledge of chemical and biological threats to the environment, with particular emphasis on anthropogenic factors, has a basic knowledge of knowledge of the principles of sustainable development as well as national and European environmental management conditions.		The student knows what are the chemical and biological threats to the environment, is able to define them and knows the legal aspects in this area		[SW3] Assessment of knowledge contained in written work and projects		
[K6_K06] has awareness of the importance of non-technical aspects and effects of engineering activities, including its impact on the environment and the associated responsibility for decisions.		The student is able to choose the appropriate methods of handling waste in accordance with the applicable law		[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work			

Subject contents	<p>As part of the course, students carry out the following issues.</p> <p>Types of packaging waste and places of their formation.</p> <p>Packaging waste generated in the Republic of Poland and the possibility of preventing its formation.</p> <p>Methods of recovery of post-consumer packaging.</p> <p>New biodegradable packaging materials.</p> <p>Recycling technologies of various types of packaging.</p> <p>National processing capacity of packaging materials.</p> <p>EU directives and regulations concerning the management of packaging waste.</p> <p>National system of packaging waste management.</p>											
Prerequisites and co-requisites	The student knows the basic materials used in packaging											
Assessment methods and criteria	<table border="1" data-bbox="448 860 1477 965"> <thead> <tr> <th data-bbox="448 860 794 898">Subject passing criteria</th> <th data-bbox="794 860 1141 898">Passing threshold</th> <th data-bbox="1141 860 1477 898">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 898 794 927">laboratory</td> <td data-bbox="794 898 1141 927">60.0%</td> <td data-bbox="1141 898 1477 927">40.0%</td> </tr> <tr> <td data-bbox="448 927 794 965">lecture</td> <td data-bbox="794 927 1141 965">60.0%</td> <td data-bbox="1141 927 1477 965">60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	laboratory	60.0%	40.0%	lecture	60.0%	60.0%
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laboratory	60.0%	40.0%										
lecture	60.0%	60.0%										
Recommended reading	Basic literature	<p>[1] Hanna Żakowska Opakowania Biodegradowalne</p> <p>[2] Hanna Żakowska Recykling odpadów opakowaniowych</p>										
	Supplementary literature	<p>Rozporządzenie Ministra Ochrony Środowiska Zasobów Naturalnych i Leśnictwa z dnia 24 grudnia 1997 r. w sprawie klasyfikacji odpadów (Dz. U. Nr162 poz.1135</p> <p>Rozporządzenie Ministra Środowiska z dnia 14 czerwca 2000 r. (Dz.U. Nr 51 poz. 620)</p> <p>Rozporządzenie Ministra Ochrony Środowiska Zasobów Naturalnych i Leśnictwa z dnia 24 grudnia 1997 r. w sprawie klasyfikacji odpadów (Dz. U. Nr162 poz.1135</p> <p>Rozporządzenie Ministra Środowiska z dnia 14 czerwca 2000 r. (Dz.U. Nr 51 poz. 620)</p>										
	eResources addresses	<p>Uzupełniające</p> <p>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25486 -</p>										
Example issues/ example questions/ tasks being completed	<p>Co to są odpady?</p> <p>Jakie są metody recyklingu opakowań z tworzyw sztucznych?</p> <p>Jakie przepisy prawne dotyczą wyrobów jednorazowych?</p>											
Work placement	Not applicable											