University of Gdańsk

Subject card

Subject name and code	Designing ecological materials and processes, PG_00171075						
Field of study	Environmental Protection						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2027/2028			
Education level	Bachelor's studies		Subject group	Optional subject group			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	1.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Aleksandra Pieczyńska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15		5.0	10.0	30	
Subject objectives	The aim of the course is to prepare and carry out projects in groups of several people related to the topic of ecological materials or processes.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OŚL3_U05] Prepares oral scientific presentations in Polish/ English. Communicates in English in accordance with the requirements specified for level B2 of the Common European Framework of Reference for Languages.	Students present the project results in the form of a poster and/ or presentation.	[SU2] presentation/project/paper/ report
[OŚL3_K05] Identifies the level of her/his knowledge and skills, demonstrates the need to update knowledge about the environment and its protection, demonstrates the need for continuous professional training and personal development.	Students participate in the final evaluation of the implementation and presentation of projects.	[SK1] oral statement/conversation/ discussion
[OŚL3_U06] Uses available sources of information and understands literature in the field of environmental protection, chemistry and natural sciences.	Students develop project topics based on scientific articles and patents.	[SU2] presentation/project/paper/ report
[OŚL3_U03] Independently plans and develops her/his own lifelong learning.	The student independently selects and implements the project topic of his or her choice.	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[OŚL3_W08] Explains the mechanisms of economic and consumer pressure on the environment and recognises the possibilities of reducing it using the latest knowledge and scientific achievements.	As part of the project, the student describes the state of knowledge based on the literature regarding the project topic.	[SW2] presentation/project/paper/ report
[OŚL3_W02] Characterises the relationships and relationships between various disciplines of natural sciences and science, uses knowledge of mathematics, physics, chemistry and biology in the description of basic concepts, concepts and principles in environmental protection.	Students prepare and implement projects in the laboratory concerning issues related to broadly understood sustainable development.	[SW5] implementation of a problem task

Subject contents

As part of the subject, students in groups of several people prepare projects whose topics are related to the preparation of new sustainable products or processes. Students in auditorium classes develop selected topics based on available literature, design the implementation of given materials/processes, prepare a report on the research carried out and finally present the results of the project in the form of a presentation and poster. As part of laboratory classes, students verify the proposed solutions in the project.Examples of topics:

- Production of activated carbon from coconut shells
- Purification of post-production water using advanced methods
- Production of biodiesel from waste oils
- Production of pots from biodegradable materials
- Production of biodegradable disposable tableware

Prerequisites and co-requisites

Basics of laboratory work

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Evaluation of the preparation, implementation and presentation of the project by the students	51.0%	50.0%
Evaluation of the preparation, implementation and presentation of the project by the teacher	51.0%	50.0%

Recommended reading

Basic literature	During classes, students independently search for and use scientific articles, books, and patents directly related to their project topic.
Supplementary literature	During classes, students independently search for and use scientific articles, books, and patents directly related to their project topic.
eResources addresses	

Example issues/ example questions/ tasks being completed	Production of activated carbon from coconut shellsPurification of post-production water using advanced methodsProduction of biodiesel from waste oilsProduction of flowerpots from biodegradable materialsProduction of biodegradable disposable tableware
Work placement	Not applicable

Document generated electronically. Does not require a seal or signature.