GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Monitoring and Analytics of Environmental Pollutants, PG_00065968		
Field of study	MONITORING I ANALITYKA ZANIECZYSZCZEŃ ŚRODOWISKA		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-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	2	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Analytical Chemistry -> Faculty of Chemistry -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Tobiszewski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	45.0	0.0	15.0	75

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	75	10.0	65.0	150

Subject objectives

Gaining knowledge from monitoring and analytics of environment

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U06] conducts a critical analysis of the functioning of existing technical solutions in the field of environmental protection technology, and a preliminary economic analysis of the engineering activities undertaken	is able to select a standard procedure for a specific analytical problem	[SU4] Ocena umiejętności korzystania z metod i narzędzi
[K7_U02] selects analytical, simulation and experimental methods for research and analysis of environmental pollution using appropriately selected equipment and software	is able to use environmental standards, is able to select standard procedures to determine the compliance of the environmental condition with standards	[SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania
[K7_K03] understands non-technical aspects and effects of graduates' activities, including the impact on the environment	is able to perfrom synthesis of information and present selected topic from environmental analytics	[SK3] Ocena umiejętności organizacji pracy
[K7_W03] identifies equipment used in environmental pollution analysis, industrial waste purification and neutralization technology, and water and sewage management, necessary for designing and supervising environmentally friendly technologies	Has knowledge on monitoring analytical devices	[SW1] Ocena wiedzy faktograficznej

<table>
<tr><td>Subject contents</td><td>Lecture: Aspects of environmental monitoring and analytics

Labs: Working with analytical procedures

Seimnar: Presentations of contents of scientific review papers</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>finished course on analytical chemistry</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>egzamin</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>ocena prezentacji</td><td>60.0%</td><td>20.0%</td></tr>
<tr><td>zaliczenia</td><td>60.0%</td><td>30.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>New horizons and challenges in environmental analysis and monitoring, praca zbiorowa pod red. J. Namieśnika, W. Chrzanowskiego, P. Szpinek, wydawca: Centrum Doskonałości Analityki i Monitoringu Środowiskowego (CEEAM), Wydział Chemiczny PG, Gdańsk 2003
Nowe horyzonty i wyzwania w analityce i monitoringu środowiskowym, praca zbiorowa pod red. J. Namieśnika, W. Chrzanowskiego, P. Szpinek, wydawca: Centrum Doskonałości Analityki i Monitoringu Środowiskowego (CEEAM), Wydział Chemiczny PG, Gdańsk 2003
Ocena i kontrola jakości wyników analitycznych, P. Konieczka, J. Namieśnik, B. Zygmunt, E. Bulska, A. Świtaj-Zawadka, A. Naganowska, E. Kremer, M. Rompa, wydawca: Centrum Doskonałości</td></tr>
<tr><td>Supplementary literature</td><td>New horizons and challenges in environmental analysis and monitoring, praca zbiorowa pod red. J. Namieśnika, W. Chrzanowskiego, P. Szpinek, wydawca: Centrum Doskonałości Analityki i Monitoringu Środowiskowego (CEEAM), Wydział Chemiczny PG, Gdańsk 2003
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<tr><td>eResources addresses</td><td></td></tr>
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</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>WHat is peciation?

Why extraction is performed?

What is biomonitoring?</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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