GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Environmental Protection and Monitoring, PG_00059134		
Field of study	Environmental Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2026/2027
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	Part-time studies	Mode of delivery	at the university
Year of study	4	Language of instruction	Polish
Semester of study	7	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Alina Wargin	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	20.0	5.0	0.0	0.0	0.0	25

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	25	1.0	50.0	76

Subject objectives

Familiarization with the principles of environmental monitoring (objectives, principles, performers, requirements and disposition), ways to protect the individual components of the environment, sources of pollution

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W04] possesses elementary knowledge in the field of land mechanics, ground science, land reclamation and geotechnics; has basic knowledge about the composition of air, water and soil, environmental pollution and processes responsible for their formation and ways to reduce them, knows the principles and organization of sustainable water management	Student has a basic knowledge of the composition of air, water and soil, pollution of the environment and the processes responsible for their formation	[SW1] Assessment of factual knowledge
[K6_U01] has the ability to self-education, can obtain information from literature, databases and other sources, uses information technology, Internet resources; can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions	He/She has the ability to self-educate, can gather information from literature, databases, and other sources, uses information technology and online resources; can integrate the information obtained, interpret it, draw conclusions, and also formulate and justify opinions	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents	Course content – lecture Lectures Monitoring studies in the aquatic environment - the terms, conditions, possibilities. Water monitoring, the creation of networks, research. Monitoringowanych types of networks - the scope of testing, the scale of research in behaviors to surface water and groundwater. Interpretation of the results of physicochemical tests the waters, the causes of reduced quality. The use of monitoring data for improving and optimizing water management. Air monitoring - measuring stations, the main sources of pollution. Reports about the level of pollution. Course content – exercises The concept of monitoring, types of monitoring, the scope and scale of research. Integrated Monitoring of Natural Environment (ZMŚP) and the State Environmental Monitoring, Policies networking and the monitoring of the aquatic environment. Interpretation of the data about the location of groundwater level and flow rate (supply). The interpretation of data on water quality (chemistry). The use of monitoring data to improve the water and optimizing water management. The rules for creating air monitoring: measuring stations, reports about the level of pollution. Monitoring of noise in urban areas. The reference method of calculating the dispersion in the atmosphere
Prerequisites and co-requisites	environmental chemistry and biology, Law of environment protection

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	55.0%	100.0%

Recommended reading

Basic literature	European directives, Law and Regulations in Poland
Supplementary literature	articls and reports as well as statisticla date
eResources addresses	

Example issues/ example questions/ tasks being completed	. Explain the concept of sustainable development 2. Provide tools that you know the environment 3. What is (features) and which includes state environmental monitoring 4. Describe the task of surface water monitoring 5. Describe air monitoring tasks 6. Explain the difference in emission and immission 7. What is Integrated Monitoring of the Natural Environment 8. What are some types of water monitoring 9. What is the concept of water bodies 10. Enter a way to classify the status of surface water bodies 11. Specify what elements are evaluated by classifying the cleanliness of surface waters 12. Who is the executor of monitoring: surface water, groundwater, Baltic Sea. 13. Give classifications of ecological status of surface waters 14. On what basis are managed waters in Poland 15. What are the instruments of water management in Poland 16. Explain the concept of transitional waters and coastal waters 17. Type traits bio-indicators (water and / or air) 18. Replace the main sources of air pollution 19. Give the characteristic of air pollution 20. Explain the concepts: transmission, imission, dry deposition and wet deposition 21. Explain markings: BTEX, PM 10 and PM 2.5 22. Give what are the priority areas for air monitoring 23. Specify what additional tests are made in the context of air monitoring and why 24. What are some air monitoring systems 25. Why do air monitoring are used in a remote measurement systems 26. What is a lidar, what it does and how it works 27. Describe the process eutrofizacji- reasons, phase effects 28. What is the reclamation and goals, milestones and limitations 29. What does the term: internal power supply, water, interstitial 30. Provide methods and types of remediation 31. What is and when you can use the "removal of water hipolimnionu" 32. Give and briefly review phosphorus inactivation method 33. What are the advantages and disadvantages of using dredging reclamation 34. What does the term stratification aeration, aeration without stratification 35. What are algitatyki and where they are used
Practical activites within the subject	Not applicable

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