University of Gdańsk

Subject card

Subject name and code	Environmental monitoring, PG_00198129						
Field of study	Natural Resources Conservation						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	Bachelor's 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	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Magdalena Oset				
	Teachers						
Lesson types	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						
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		2.0		8.0	25
Subject objectives	To learn the most important information about environmental monitoring systems, types of pollution of water, soil and atmosphere, methods of methods of measuring pollutants in environmental samples.To learn the basics of biological monitoring with its most relevant programmes.To be able to select biological monitoring methods correctly and apply them in practice.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OZPL3_W13] The graduate has an advanced understanding of the rules, methods, and techniques of environmental research and their potential applications in nature conservation	presents basic rules, methods and techniques for conducting environmental monitoring studies environment (O_W13)	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW3] text preparation/written work [SW5] implementation of a problem task
[OZPL3_W11] The graduate have an advanced knowledge and understanding of the concepts and terminology of natural science, as well as knowledge of the evolution of natural sciences and the research methods employed in them. They are also cognizant of the potential for practical application	- knows the basic concepts and terminology used in environmental monitoring, knows the application of selected natural scientific research methods used in environmental monitoring and their practical application (O_W11)	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW3] text preparation/written work [SW5] implementation of a problem task
[OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development	- is aware of the limitations of his/ her own knowledge and understands the need for constant updating of knowledge in the field of in the field of environmental monitoring (O_K01)	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK4] test/exam - oral or written [SK5] implementation of a problem task [SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[OZPL3_W07] The graduate has an advanced understanding of the methods and means of nature and environmental protection, including nature monitoring	- presents methods and ways to protect nature and the environment, including nature monitoring nature monitoring (O_W07)	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW3] text preparation/written work [SW5] implementation of a problem task
[OZPL3_K05] The graduate is ready to understand the need to improve their own competences, update their knowledge and improve their skills	understands the need to improve one's own competences and to update data and improve their skills in applying environmental monitoring methods (O_K05)	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[OZPL3_U08] The graduate is able to use the scientific language typical of the biological sciences in discussions with specialists	- uses professional phrases and terms used in bioindication and environmental monitoring environment (O_U08)	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work

Subject contents

General information on the objectives and principles of environmental monitoring. State Environmental Monitoring, national and international monitoring networks,collection and processing of environmental data, and key legislation related to environmental monitoring.Selected quality standards for elements of the environment.Pollution measurement methods including biological monitoring as a continuous source of environmental data.Principles and functioning of Integrated Environmental Monitoring in Poland.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written test pass	51.0%	100.0%

Recommended reading	Basic literature	Biblioteka Monitoringu Środowiska. 1994. Zastosowanie bioindykacji w praktyce monitoringu środowiska na przykładzie północno-wschodniej Polski. Warszawa. Biblioteka Monitoringu Środowiska. 2010. Monitoring roślin. Warszawa. Kostrzewski A., Kruszyk R., Kolander R. 2006. Zintegrowany Monitoring Środowiska Przyrodniczego. Zasady organizacji, system pomiarowy, wybrane metody badań. Merdalski M., Banaś K., Ronowski R. 2019. Environmental factors affecting pondweeds in water bodies of northwest Poland. Biodiversity: Research and Conservation 59 (1): 13-28. Stepnowski P., Synak E., Szafranek B., Kaczyński Z. 2010. Monitoring i analityka zanieczyszczeń w środowisku. Wydawnictwo UG. Literature studied independently by the student: Falińska K. 1996. Ekologia roślin. PWN, Warszawa. Pullin A. S. 2004. Biologiczne podstawy ochrony przyrody. PWN, Warszawa.
	Supplementary literature	Krebs Ch. 2001. Ekologia. Eksperymentalna analiza rozmieszczenia i liczebności. PWN. Warszawa. Markert B. (red.). 1993. Plants as Biomonitors. VCH, Wienheim-New York-Basel-Cambridge. Oset M. 2014. The lichen genus Stereocaulon (Schreb.) Hoffm. in Poland a taxonomic and ecological study. Monographiae Botanicae 104.
	eResources addresses	
Example issues/ example questions/ tasks being completed	State Environmental Monitoring, national and international monitoring networks, collection and processing of environmental data and key legislation relating to environmental monitoring (e.g. learning about the Armaag network).Noise monitoring. Water monitoring. Monitoring of ionising radiation. Forest monitoring. Habitat monitoring, etc.Principles and functioning of Integrated Environmental Monitoring in Poland.Natura 2000 sites.	
Work placement	Not applicable	

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