

Subject card

Subject name and code	Water Monitoring, PG_00091473						
Field of study	Water Management and Protection of Water Resources						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study Subject group related to practical vocational preparation		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		English		
Semester of study	6		ECTS credits		2.0		
Learning profile	practical		Assessment form				
Conducting unit	Centrum Monitoringu i Ochrony Wód -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Julita Dunalska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	0.0	0.0	0.0	20
	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	20		5.0		25.0	50
Subject objectives	Introduction to basic methods of water monitoring in Poland and worldwide. The course includes auditorium and field classes. Classes conducted in block form at the Center for Water Monitoring and Protection in Borucino.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GWOZWL3-W08] basic concepts and problems in the field of study in English	Knows the indicators of pollution of the aquatic environment. Knows basic concepts and explains issues in English.	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
	[GWOZWL3-W03] organization and legal basis of environment protection, nature protection and water management, as well as the principles of organization and operation of hydrological and meteorological services and the basics of Integrated Environmental Monitoring	Student knows the organization and legal basis for the protection of the aquatic environment, as well as the principles of organization and functioning of the monitoring in Poland (PMŚ). He has well-established knowledge in the field of measurement and interpretation of monitoring data.	[SW1] oral statement/ conversation/discussion
	[GWOZWL3-U13] read with understanding specialized scientific texts in Polish and English	Student reads with understanding specialized scientific texts and formulates opinions on water quality in English.	[SU1] oral statement/conversation/ discussion
	[GWOZWL3-K05] take responsibility for the safety of their own work and that of others, dealing with emergencies, exercising caution in the laboratory and in the field, responsibility for entrusted equipment and apparatus	Student is responsible for the safety of his own and others' work, conduct in states of danger, exercise caution in the laboratory and in the field, responsibility for the entrusted equipment and apparatus.	[SK6] demonstration of practical skills
	[GWOZWL3-U02] select and independently apply basic research techniques and tools, with adhering to established analytical procedures in the field of environmental research in water management, adequately to the considered research problem	Is able to select and independently apply basic research techniques and tools, in compliance with established analytical procedures, in the field of aquatic environment study.	[SU2] presentation/project/paper/ report
Subject contents	Getting to know the specifics of field work and the laboratory of environmental research, the principles of creating monitoring in Poland (PMŚ) and the flow of information at the national and international level; getting acquainted with the role of volunteers in water monitoring as part of citizen science; performing measurements to assess the condition of environmental components using modern equipment and measurement devices and high frequency data; interpretation of the obtained results of monitoring tests and cause-and-effect analysis.		
Prerequisites and co-requisites	Knowledge of English		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		51.0%	100.0%
Recommended reading	Basic literature	- water Directive	
	Supplementary literature	- Marcé R et al. 2016. Automatic High Frequency Monitoring for Improved Lake and Reservoir Management. Environmental Science&Technology, 50(20): 10780-10794.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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