



## Subject card

Subject name and code	Methodes of the environment management and monitoring, PG_00057320						
Field of study	Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group			Optional subject group 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			2.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Jerzy Głuch				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	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	30		6.0		14.0	50
Subject objectives	Presentation of methods of environmental management and monitoring						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W02] has extended and deepened knowledge of physics, chemistry, thermodynamics, fluid mechanics, material science, necessary to understand and describe basic thermal and flow phenomena occurring in and around power equipment and systems, transmission networks and internal installations		student is able to find an appropriate method of environmental monitoring due to the impact of energy systems		[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		
	[K7_K03] is able to think and act creatively and entrepreneurially, is aware of the responsibility for his/her own work and takes responsibility for teamwork		student is able to assess environmental hazards due to the use of energy systems, propose methods of their management		[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	Monitoring of environmental quality, the role of monitoring, design, organization and operation of environmental monitoring systems and the amount of pollution produced and introduced into the environment, principles of collection, transmission, sharing and use of monitoring data. methods of obtaining information about the environment and methods of their visualization, including the presentation of spatial diversity of observed parameters, State Environmental Monitoring, remote sensing monitoring system, expert monitoring systems.						
Prerequisites and co-requisites	basic knowledge of energy processes and the environmental problems they create						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	lecture		60.0%		50.0%		
	laboratory		100.0%		50.0%		

Recommended reading	Basic literature	<p>Adamczyk J., Audyt ekologiczny w programowaniu rozwoju przedsiębiorstw, "Problemy Ekologii" 1997, nr 3.</p> <p>Adamczyk J., Wpływ zmian strukturalnych przemysłu na ochronę środowiska [w:] Nowoczesność przemysłu i usług w regionie. Materiały konferencyjne pod red. J. Pyki, TNOiK -AE w Katowicach-PAN-Politechnika Śląska, Katowice 1998.</p> <p>Bloom H., Calori R., De Woot P.H., Zarządzanie europejskie, Poltext, Warszawa 1996.</p> <p>Borys G., Ryzyko ekologiczne w działalności banku komercyjnego, "Ekonomia i Środowisko" 1995, nr 1.</p> <p>Famielec J., Straty i korzyści ekologiczne w gospodarce narodowej, PWN, Warszawa-Kraków 1999.</p> <p>Johansson A., Czysta technologia, środowisko-technika-przyszłość, WNT, Warszawa 1997.</p> <p>Radecki W., Wykroczenia i przestępstwa przeciwko środowisku, PWN, Warszawa 1995.</p> <p>Simmons I.G., Ekologia zasobów naturalnych, PWN, Warszawa 1979.</p> <p>Starzewska-Sikorska A., Ocena oddziaływania na środowisko jako narzędzie planowania przestrzennego w ekorozwoju, Wyd. "Ekonomia i Środowisko", Białystok 1994.</p> <p>Sterowanie ekorozwojem. Materiały konferencyjne pod red. B. Poskrobki, t. I-III, Politechnika Białostocka, Białystok 1998.</p> <p>Wever G.H., Strategie Environmental Management, Wiley and Sons, New York 1996.</p> <p>Woś A., Ekonomika odnawialnych zasobów naturalnych, PWN, Warszawa 1995.</p> <p>Zimniewicz K., Współczesne koncepcje i metody zarządzania, PWE, Warszawa 1999.</p> <p>Marcin Olkiewicz, Zarządzanie energią determinantą ochrony środowiska, Zeszyty Naukowe Politechniki Śląskiej 2017 Seria: Organizacja i Zarządzanie z. 100 Nr kol. 1972</p>
	Supplementary literature	updating knowledge based on the Internet
	eResources addresses	
	Example issues/ example questions/ tasks being completed	describe the State Environmental Monitoring
Work placement	Not applicable	