

GDAŃSK UNIVERSITY

Subject card

Subject name and code	Environmental monitoring and control, PG_00057355								
Field of study	Power Engineering, Power Engineering, Power Engineering								
Date of commencement of studies	February 2024		Academic year of realisation of subject			2024/2025			
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			3.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department of Metrol	Department of Metrology and Optoelectronics -> Faculty of Electronics, Telecommunications and Information						nd Informatics	
Name and surname	Subject supervisor		prof. dr hab. inż. Aneta Łuczkiewicz						
of lecturer (lecturers)	Teachers		dr inż. Filip Gamoń						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	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 ir classes include plan		n didactic ed in study	actic Participation in study consultation hours		Self-study SUM		SUM	
	Number of study 30 hours		8.0		37.0 75		75		
Subject objectives	The aim of the course is to present the basic theoretical issues and practical problems related to the monitoring and analysis of environmental pollution.								
Learning outcomes	ing outcomes Course outcome Subjec		ect outcome		Method of verification				
	[K7_K04] is able to react in emergency situations, health and life threatening when using power equipment		The student is able to recognize health and life hazards when using electrical devices, has the ability to react properly in emergency situations that may be the result of failures, improper use of power devices and their design and implementation errors			[SK1] Assessment of group work skills			
	[K7_W10] knows the basic installations of advanced energy systems, transmission networks and internal installations and their impact on the environment [K7_K05] is aware of the impact of engineering activities on the		The student uses concepts and specialised language in the field of environmental pollution monitoring and analysis. The student is able to collect and measure data in the field of environmental pollution monitoring and analysis, including typical indoor pollutants (e.g. particulate matter, gaseous compounds). Students will be able to find solutions to minimise the health impacts of indoor air pollution. The student is able to describe analytically and synthetically the			[SW3] Assessment of knowledge contained in written work and projects [SK1] Assessment of group work skills			
	environment	problems associated with the issues of monitoring and analysis of environmental pollution. He is aware of the work that is done by a multi-discipline design team.							

Subject contents	1. Introduction to indoor air quality. Ventilation concept, methodologies and measurement techniques. Evaluation of ventilation efficiency.							
	2. Gaseous pollutants: Volatile org carbon monoxide and nitrogen dic	2. Gaseous pollutants: Volatile organic compounds (VOCs), ozone and combustion related air pollutants (i.e. carbon monoxide and nitrogen dioxide).						
	3. Particulate matter (PM).							
	4. Bioaerosols, asbestos and radon							
	5. Airborne particle control: Filtration							
	6. Comparison of different types of pollution monitoring sensors and techniques							
	7. From data to knowledge: air pollutant data elaboration							
Prerequisites and co-requisites	Basic knowledge of chemistry, physics, fluid mechanics. Basic knowledge of programming languages. Knowledge of the subject: ventilation, monitoring and air treatment.							
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade					
and criteria	Proiect	60.0%	50.0%					
	Exam on lectures	60.0%	50.0%					
Recommended reading	Basic literature	Spengler, J., McCarthy, J., and Samet, J. Indoor air quality handbook, McGrow-Hill Professional (2001).						
		Awbi, H.B, Ventilation of buildings, E&FN SPON (2003)						
		Morawska, L. and Salthammer, T., Indoor environment: airbone particles and settled dust Wiley-VCH (2003)						
	Supplementary literature	Supplementary literature Zhang, Y., Indoor Air Quality Engineering, CRC Press (2004) Godish, Thad. Indoor air pollution control. CRC press, 1989.						
	eResources addresses	eResources addresses Adresy na platformie eNauczanie:						
Example issues/ example questions/ tasks being completed								
Work placement	Not applicable							

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