



## Subject card

Subject name and code	HAZARDS IN THE WORK ENVIRONMENT, PG_00048963						
Field of study	Green Technologies						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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		English		
Semester of study	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Analytical Chemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor						
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	15.0	60
	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	60		10.0		30.0	100
Subject objectives	The aim of course is to give knowledge on chemical, physical and biological threats that can occur in the workplace.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U05] can formulate and test hypotheses related to the problems of engineering and simple research problems relating to the protection of the environment, new environmental technologies and analytical procedures		can fluently perform numerous analytical techniques including those applicable at sample preparation step		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
	[K7_K01] is ready to solve the most common problems associated with the profession of engineer, correctly identifies and resolves dilemmas associated with the profession of engineer, assesses risks and is able to assess the effects of the activity		can predict and present impact of MSc Eng in all aspects of His/Her chemical activity		[SK2] Assessment of progress of work		
	[K7_W02] a broader and deeper knowledge of the soil, air and water from pollution useful to formulate and solve complex tasks in the field of environmental technologies and modern analytical methods		student receives knowledge on protection of waters, soils, sediments and air in the degree sufficient to solve complex tasks in the environmental protection		[SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge		

Subject contents	<p>Issues:</p> <ul style="list-style-type: none"><li>- Describing the current law regulations such as COUNCIL DIRECTIVE 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work and DIRECTIVE 2008/50/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on ambient air quality and cleaner air for Europe:</li><li>- Limit and target values of certain pollutants in air,</li><li>- Description of various types of analytical methods used in the air quality monitoring process,</li><li>- Characteristic of sampling devices and on-line equipment used to monitor the pollutants level in air,</li><li>- Proposed strategies to reduce human exposure to air pollutants present in workplace environment.</li></ul> <p>Physical hazards:</p> <ul style="list-style-type: none"><li>• Noise</li><li>• Vibration</li><li>• Radiation</li><li>• Temperature extremes</li><li>• Pressure extremes</li></ul> <p>Chemical hazards:</p> <ul style="list-style-type: none"><li>• ozone and other gases,</li><li>• organics,</li><li>• metals</li></ul> <p>Biological hazards:</p> <ul style="list-style-type: none"><li>• molds and Fungi</li><li>• bacteria</li><li>• enzymes</li><li>• recombinant organisms</li><li>• endotoxins</li></ul> <p>Suspended particulate matter in work environment:</p> <ol style="list-style-type: none"><li>1. Particulate matter definition, classification, sources in outdoor/indoor environment, related health risks;</li><li>2. Law regulations related to occupational exposure to suspended particulate matter in work environment;</li><li>3. Personal protective equipment dedicated to workers exposed to suspended particle matter in work environment;</li><li>4. Solutions/strategies for suspended particle matter monitoring in work environment;</li><li>5. Examples of workplaces characterized by high concentrations of particles in the air.</li></ol>		
Prerequisites and co-requisites	- analytical, inorganic, organic, physical chemistry, toxicology		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	presentation + oral	60.0%	20.0%
	test + report	60.0%	20.0%
	written + oral exam	60.0%	60.0%
Recommended reading	Basic literature	- to be given during lecture by respective tutor	
	Supplementary literature	-	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	- to be given during lecture by respective tutor		

Work placement	Not applicable
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