

Subject card

Subject name and code	Environmental risk assessment of chemicals, PG_00179330						
Field of study	Chemical Business						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2029/2030		
Education level	Bachelor's studies		Subject group		Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		English		
Semester of study	7		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Department of Environmental Analysis -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Anna Białk-Bielińska				
	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		1.0		19.0	35
Subject objectives	To make students familiar with the following issues: - types of hazardous chemicals - elements of chemical structure responsible for persistency - principles for prediction of chemical risks - toxicity / ecotoxicity evaluation of chemicals						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BCHINŽ_W06] Enumerates basic unit processes and describes issues in the field of technology and chemical engineering.	Understands the relationships associated with the ecotoxicity of selected environmental pollutants and characterizes the methods used to assess it.	[SW4] test/exam - oral or written
	[BCHINŽ_K01] Identifies the level of her/his own knowledge and skills as well as the need to update engineering knowledge, continuous professional training and personal development.	The student is able to define gaps in His/Her knowledge and fill them by searching and citing the literature on the subject, thereby understanding the need for further education.	[SK1] oral statement/conversation/discussion
	[BCHINŽ_W02] Enumerates basic laws and theories in chemistry, physics and mathematics necessary to formulate and solve simple engineering tasks.	The student is able to assess the exposure of individual environmental components to the presence of chemical compounds depending on the manner and scale of their use.	[SW4] test/exam - oral or written
	[BCHINŽ_K05] Is convinced of the importance of behaving in a professional manner in every situation, taking full responsibility in the field of engineering activities and their impact on the natural environment and compliance with the principles of professional ethics.	Consciously assesses the impact of human activities on the environment, locally and globally.	[SK1] oral statement/conversation/discussion
	[BCHINŽ_U08] Uses the chemical nomenclature and engineering terminology properly.	Discusses issues related to environmental risk assessment using appropriate language and correct chemical nomenclature and engineering terminology.	[SU1] oral statement/conversation/discussion [SU4] test/exam - oral or written
Subject contents	Terminology: risk, hazard, and exposure. Procedures for conducting risk assessments of chemicals. Components of exposure assessment and hazard characterization. Specifics of ecotoxicological testing. REACH requirements.		
Prerequisites and co-requisites	Basic knowledge of general chemistry, organic chemistry, physical chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Writing test	51.0%	100.0%
Recommended reading	Basic literature	Verschuieren, K. Handbook of environmental data on organic chemicals. Second edition, Van Nostrand Reinhold Co. Inc.,New York, NY Lyman, W.J.; Reehl, W.F.; Rosenblatt, D.H. Handbook of chemical property estimation methods: Environmental behavior of organic compounds. Washington, DC (United States); American Chemical Society	
	Supplementary literature	Verschuieren, K. Handbook of environmental data on organic chemicals. Second edition, Van Nostrand Reinhold Co. Inc.,New York, NY Lyman, W.J.; Reehl, W.F.; Rosenblatt, D.H. Handbook of chemical property estimation methods: Environmental behavior of organic compounds. Washington, DC (United States); American Chemical Society	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1.. refers to the inherent properties of a chemical substance that make it capable of causing harm to a person or the environment. 2. PEC is the parameter that describes: a) exposure b) hazard c) risk 3. There are three chemicals with the determined EC ₅₀ towards <i>Daphnia magna</i> : A (EC ₅₀ = 1 mg/L), B (EC ₅₀ = 20 mg/L), C (EC ₅₀ = 0,01 mg/L). Which chemical is the most toxic? 4. What is REACH (multiple choice)? a) the Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals b) the Regulation on Rejection, Exclusion, Assessment and Restriction of Chemicals c) is the main EU law to protect human health and the environment from the risks that can be posed by chemicals d) it aims to assess the safety of chemical substances in use in the EU		
Work placement	Not applicable		

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