University of Gdańsk

Subject card

Subject name and code	Toxicology, PG_00103524						
Field of study	Environmental Protection						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2028/2029			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study 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	3		Language of instruction	Polish			
Semester of study	5		ECTS credits	2.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Laboratory of Toxicology and Radiation Protection -> Department of Environmental Chemistry and Radiochemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dagmara Strumińska-Parulska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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		5.0	15.0	50	
Subject objectives	introducing students to the basics of toxicology, familiarizing students with the issues mentioned in the lecture program content,						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OŚL3_W05] Explains the course of natural and anthropopressional physical, chemical and biological processes and phenomena occurring in nature at various levels of matter organisation.	1. knows the goals, tasks and general toxicology, 2. knows and understands the basic concepts of toxicology, 3. knows the types and course of poisonings and general principles of prevention against poisoning, 4. knows the concept of radiation dose and distinguishes its types and units,	[SW4] test/exam - oral or written
[OŚL3_K01] Behaves in a professional manner at all times; bears full responsibility for the actions taken relating to the protection of the environment and respects the principles of professional ethics and principles of intellectual honesty.	1. is aware of the risk of toxic substances in the human environment, 2. risk communication.	[SK4] test/exam - oral or written
[OŚL3_W08] Explains the mechanisms of economic and consumer pressure on the environment and recognises the possibilities of reducing it using the latest knowledge and scientific achievements.	1. knows the structure and toxicodynamic properties of selected heavy metals, 2. knows domestic and selected foreign poisonous plants and the structure and properties of their basic active substances, 3. knows the risks associated with the use of pesticides and selected food additives, 4. has knowledge about natural and artificial radioactive elements and their occurrence in nature, 5. knows the views on the impact of small doses of radiation on humans,	[SW4] test/exam - oral or written

Subject contents

History and milestones in toxicology. Tasks of toxicology. Poisons, poisonings - types and their causes. Basic toxicological concepts and relationships. Basic factors determining the possibility of harmful effects of xenobiotics on living organisms. Dose-effect relationship. Pathways of absorption and excretion of poisons - their structure and fate of the poison in the human body (ADME). Mechanisms of toxic action and detoxification mechanisms. Chemical safety legal solutions. Toxicometry - testing of toxic effects (acute, cumulative, chronic toxicity, long-term effects of poisons - reproductive, mutagenic, carcinogenic, teratogenic effects). Principles and scope of toxicometric tests, experimental animals, alternative methods of toxicity testing. Determining safe values (NDS, NOAEL, LOAEL, ADI., MRL, MCL). Assessment of the risk of exposure to the toxic effects of chemical compounds and its estimation. Poisonous plants and their active substances. Pesticide toxicity. Toxicity of selected heavy metals and their compounds. Radiotoxicology.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written test	51.0%	100.0%

Recommended reading

Basic literature	Seńczuk W (red.): Toksykologia współczesna Piotrowski J.K. (red.): Podstawy toksykologii. Kompendium dla studentów szkół wyższych
Supplementary literature	-
eResources addresses	

Example issues/ example questions/ tasks being completed

lecture content

Work placement

Not applicable

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