University of Gdańsk

Subject card

Subject name and code	Toxicology, PG_00103524						
Field of study	Environmental Protection						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	undergraduate studies		Subject group		Obligatory subject group 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				
Conducting unit	Pracownia Toksykologii i Ochrony Radiologicznej -> Katedra Chemii i Radiochemii Środowiska -> Faculty of Chemistry						
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_U01] Performs tasks under supervision and independently in the field of analysis of the natural environment and the functioning of natural and man-made natural systems.	1. identification of domestic poisonous plants, 2. recognizes the most important natural and artificial radionuclides contained in nature, 3. is aware of the importance of natural radioactivity in human life,	[SU4] test/exam - oral or written
[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_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
[OŚL3_K06] Knows and appreciates the practical application of the acquired knowledge and skills in solving problems.	1. makes society aware of surrounding, easily accessible poisonous substances, 2. makes society aware of the impact of radioactivity on human life,	[SK4] 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_U04] Uses specialist language in the discussion and properly uses the nomenclature in the field of environmental protection and individual disciplines related to it.	1. using correct toxicological terminology, 2. use of professional toxicological literature.	[SU4] 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	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	lecture content
Work placement	Not applicable

Document generated electronically. Does not require a seal or signature.