

Subject card

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|---|--|--|--|-------------------------------------|---------|---|-----|
| Subject name and code | Principles of Ecotoxicology, PG_00168492 | | | | | | |
| Field of study | Nuclear safety and radiological 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 | |
| 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 | | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr Ewa Mulkiewicz | | | | |
| | Teachers | | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | 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 in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 30 | | 0.0 | | 20.0 | 50 |
| Subject objectives | To familiarize students with the effects of chemical compounds and their mixtures on individual organisms, populations and ecosystems and with methods for assessing these effects. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | | Method of verification | |
| | [BJORL3_W05] Has advanced knowledge of the elementary components of matter and the types of fundamental interactions between them, the manifestations of these interactions in phenomena occurring at scales ranging from subatomic to subatomic, knows the time and energy scales associated with these phenomena. | | Understands conclusions based on observations and analysis of data obtained in toxicological and ecotoxicological tests. Understands the need to ensure chemical safety in the context of maintaining biodiversity and the proper structure and functioning of ecosystems. | | | [SW4] test/exam - oral or written [SW2] presentation/project/paper/report [SW3] text preparation/written work | |
| Subject contents | <p>Topics of the lecture</p> <ol style="list-style-type: none"> Pollutants and their fate in ecosystems Toxicokinetic profile of the substance (absorption, distribution, metabolism, elimination) Impact of pollutants on organisms (biochemical and physiological effects of pollutants) Ecological effects of pollution (at the population and ecosystem level) Methods for assessing the toxic effect of a compound on organisms Methods of assessing the harmful effects of pollutants on the environment Ethics in toxicological research <p>Exercise issues</p> <ol style="list-style-type: none"> Experimental methods for assessing the toxic effects of compounds and their mixtures on living organisms according to OECD procedures. Dose-effect relationship, methods of expressing doses of substances, dose conversion (LC50, LD50, NOEC, LOEC). | | | | | | |
| Prerequisites and co-requisites | | | | | | | |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
|--|---|---|-------------------------------|
| | written exam with test and open questions covering material from lectures | 51.0% | 50.0% |
| | written exam with test and open questions regarding the experimental part | 51.0% | 30.0% |
| | report from the experimental part | 51.0% | 20.0% |
| Recommended reading | Basic literature | Walker C.H., Hopkin S.P., Sibly R.M., Peakall D.B. Podstawy Ekotoksykologii, PWN, Warszawa, 2002. Laskowski R., Migula P. Ekotoksykologia od komórki do ekosystemu, Państwowe Wyd. Rolnicze i Leśne, Warszawa, 2004. Traczewska T. Biologiczne metody oceny skażenia środowiska, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, 2011. | |
| | Supplementary literature | VanLoon G.W., Duffy S.J. Chemia środowiska, Wydawnictwo Naukowe PWN, 2008. Zakrzewski S.F. Podstawy toksykologii środowiska, Wydawnictwo Naukowe PWN, 1997. Namieśnik J., Jaśkowski J. Zarys ekotoksykologii, EKO-Pharma, Gdańsk, 1995. Manahan S.E. (z jęz. ang. tł. Władysław Boczoń, Henryk Koroniak). Toksykologia środowiska : aspekty chemiczne i biochemiczne, Wydawnictwo naukowe PWN, 2018. Manahan S.E. Environmental science and technology : a sustainable approach to green science and technology. CRC Press LLC, 2006. | |
| | eResources addresses | | |
| Example issues/ example questions/ tasks being completed | not applicable | | |
| Work placement | Not applicable | | |

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