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| **Course title**  Ecotoxicology – ERASMUS  Ekotokyskologia – ERASMUS | | | **ECTS code** |
| **Name of unit administrating study**  Faculty Chemistry | | | |
| **Studies**   |  |  |  |  | | --- | --- | --- | --- | | **Field of study** | **Type** | **Form** |  | | Chemistry | Bachelor | Full-time studies |  | | Chemistry | Master | Full-time studies |  | | Environmental sciences | Bachelor | Full-time studies |  | | | | |
| **Teaching staff**  dr Ewa Mulkiewicz | | | |
| **Forms of classes, the realization and number of hours** | | **ECTS credits 4**  auditorium 9 h laboratory 21 h  tutorial classes 20 h  student’s own work 50 h  TOTAL: 100 h ECTS | |
| 1. **Forms of classes, in accordance with the UG Rector’s regulations**   Auditorium, laboratory classes | |
| 1. **The realization of activities**   In-class or on-line, work in the lab | |
| 1. **Number of hours**   9h – auditorium, 21 h - laboratory | |
| **The academic cycle**  summer | | | |
| **Type of course**  facultative | **Language of instruction**  English | | |
| **Teaching methods**  Seminars  Laboratory experiments | **Form and method of assessment and basic criteria for evaluation or examination requirements** | | |
| **A. Final evaluation, in accordance with the UG study regulations**  course completion (with a grade) | | |
| **B. Assessment methods**  Writing tests, reports from the laboratory classes | | |
| **C. The basic criteria for evaluation** or exam requirements  Evaluation criteria in accordance with the UG Studies Regulations; | | |
| **Required courses and introductory requirements**  no requirements | | | |
| **Aims of education**   * introduction to assessment of the harmful effects of pollutants on the environment; * introduction to various ecotoxicity tests using organisms representing different levels of biological organization and different trophic levels; * introduction to different mechanisms of toxicity; * introduction to the basic principles of ecotoxicological testing; * introduction into the basics of calculations necessary for the interpretation of the results of ecotoxicity tests, dose-response curve, methods of expressing doses of substances (LC50, LD50, NOEC, NOAEL, LOAEL); * acquiring the ability to propose a set of ecotoxicological tests to assess the ecotoxicity of a compound depending on its expected environmental fate; * obtaining practical skills in the the ecotoxicology laboratory.   **Convergent to:** toxicology, environmental sciences | | | |
| **Course contents**  Experimental methods for assessing the toxic effects of compounds on living organisms representing different trophic levels of the aquatic and terrestrial environment. The physiological and biochemical effects of pollutants. OECD procedures as detailed guides for carrying out ecotoxicological experiments and obtaining reliable results. Dose-effect relationship, methods of expressing doses of substances, dose conversion (LC50, LD50, NOEC, NOAEL, LOAEL). Ethics in toxicological research. | | | |
| **Bibliography of literature**  Appropriate literature or material will be given to the students. | | | |
| **Knowledge**  1. knows the basic conceptual categories and ecotoxicological terminology;  2. knows and understands the basic phenomena and biological processes occurring in organisms exposed to environmental pollutants;  3. is able to explain the consequences of disorders in the body caused by the toxic effects of compounds;  4. is able to understand and describe the effects of chemical substances and their mixtures on the environment;  5. knows experimental methods of determination ecotoxicity of chemical substances and their mixtures;  6. knows and explains the basic principles of conducting ecotoxicological tests;  7. draws simple conclusions from collected data obtained in ecotoxicological tests;  8. understands the need to apply ethical principles in experimental tests on animals. | | | |
| **Skills**  1. is able to plan and conduct an ecotoxicological experiment based on available guidelines;  2. is able to interpret and discuss the obtained results of an ecotoxicological experiment;  3. can talk about ecotoxicology issues in an understandable language, using appropriate nomenclature;  3. can plan and perform simple experimental tests;  4. can propose a set of tests to assess the ecotoxicity of a compound depending on its expected environmental fate;  5. independently searches for and understands literature in the field of ecotoxicology, knows scientific journals in the field of ecotoxicology;  6. searches for necessary information in online databases, critically assessing the resources used;  7. learns independently - expands knowledge of issues discussed during classes, can properly use available sources of information in the field of ecotoxicology. | | | |
| **Social competence**  1. understands the need for further education;  2. understands the need to independently search for information on new substances and their effects on the body and the environment in online databases, and scientific literature;  3. shows responsibility for the effects of team work;  4. is responsible for the safety of own and other work: knows how to deal with emergencies, is careful when handling chemicals, is careful when handling measuring instruments. | | | |