

## Subject card

|                                             |                                                                                                                                                                              |                                                          |                                                                                                                                                                                                                                                                                                                   |                                     |                                                                                                                      |            |     |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Ecotoxicology, PG_00054830                                                                                                                                                   |                                                          |                                                                                                                                                                                                                                                                                                                   |                                     |                                                                                                                      |            |     |
| Field of study                              | Environmental Protection                                                                                                                                                     |                                                          |                                                                                                                                                                                                                                                                                                                   |                                     |                                                                                                                      |            |     |
| Date of commencement of studies             | October 2026                                                                                                                                                                 |                                                          | Academic year of realisation of subject                                                                                                                                                                                                                                                                           |                                     | 2026/2027                                                                                                            |            |     |
| Education level                             | Master's studies                                                                                                                                                             |                                                          | Subject group                                                                                                                                                                                                                                                                                                     |                                     | Obligatory subject group in the field of study<br>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                               | 1                                                                                                                                                                            |                                                          | Language of instruction                                                                                                                                                                                                                                                                                           |                                     | Polish                                                                                                               |            |     |
| Semester of study                           | 1                                                                                                                                                                            |                                                          | ECTS credits                                                                                                                                                                                                                                                                                                      |                                     | 2.0                                                                                                                  |            |     |
| Learning profile                            | academic                                                                                                                                                                     |                                                          | Assessment form                                                                                                                                                                                                                                                                                                   |                                     | exam                                                                                                                 |            |     |
| Conducting unit                             | Laboratory of Marine Biotechnology -> Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector                                      |                                                          |                                                                                                                                                                                                                                                                                                                   |                                     |                                                                                                                      |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                           |                                                          | dr Agata Błaszczyk                                                                                                                                                                                                                                                                                                |                                     |                                                                                                                      |            |     |
|                                             | 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                                                       |                                                                                                                                                                                                                                                                                                                   | 2.0                                 |                                                                                                                      | 33.0       | 50  |
| Subject objectives                          | The aim of the training is to learn about the ecological effects resulting from environmental contamination by chemical compounds (effects at organism and ecosystem level). |                                                          |                                                                                                                                                                                                                                                                                                                   |                                     |                                                                                                                      |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                               |                                                          | Subject outcome                                                                                                                                                                                                                                                                                                   |                                     | Method of verification                                                                                               |            |     |
|                                             | [OŚMU2_W03] Characterises the effects of human interference in the natural environment and explains the mechanisms of reaction of living organisms to its pollution.         |                                                          | 1. Student knows the sources and laws determining the spread of pollution in ecosystems.<br>2. Student knows the fate of pollutants in organisms and the environment and the factors that affect them.<br>3. Student knows the ecological effects of the main groups of pollutants and methods of assessing them. |                                     | [SW4] test/exam - oral or written                                                                                    |            |     |
|                                             | [OŚMU2_W06] Analyses the impact of human activities on biodiversity and environmental quality on a local, regional and global scale.                                         |                                                          | 1. student knows the fate of pollutants in organisms and the environment and the factors that affect them.<br>2. Student is aware of the concepts and terms used in contemporary ecotoxicological literature.<br>3. Student knows the basic research methods used in ecotoxicology.                               |                                     | [SW4] test/exam - oral or written                                                                                    |            |     |

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|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Subject contents                                               | 1. Scope of ecotoxicology, basic terminology, founders of ecotoxicology and its history. 2. General classification of compounds posing the greatest threat to the environment. 3. Transport and transformation of pollutants in the environment and organisms. 4. Effects of pollutants on organism, populations and ecosystem. 5. Methods of ecotoxicological research. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| Prerequisites and co-requisites                                | Knowledge of basic chemistry, biology and ecology. Ability to use a variety of information sources; reading comprehension in English.                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| Assessment methods and criteria                                | Subject passing criteria                                                                                                                                                                                                                                                                                                                                                 | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Percentage of the final grade |
|                                                                | exam                                                                                                                                                                                                                                                                                                                                                                     | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 100.0%                        |
| Recommended reading                                            | Basic literature                                                                                                                                                                                                                                                                                                                                                         | 1. Walker C.H., Hopkin S.P., Sibly R.M., Peakall B., 2002. Podstawy Ekotoksykologii, PWN, Warszawa<br>2. Laskowski R., Migula P., 2004. Ekotoksykologia od komórki do ekosystemu, Państwowe Wyd. Rolnicze i Leśne, Warszawa<br>3. Wierzbicka M., 2021. Ekotoksykologia, Wydawnictwo Uniwersytetu Warszawskiego<br>4. Manahan S.E., 2006. Toksykologia środowiska. PWN, Warszawa<br>5. Traczewska T.M., 2011. Biologiczne metody oceny skażenia środowiska. Oficyna Wydawnicza Politechniki Wrocławskiej |                               |
|                                                                | Supplementary literature                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |
|                                                                | eResources addresses                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| Example issues/<br>example questions/<br>tasks being completed |                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |
| Work placement                                                 | Not applicable                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                               |

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