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|--|-----------------|-------------------------------|-----------------------------|-------------|
| <b>Level:</b> PhD  |                 |                               |                             |             |
| <b>Course title:</b> Ecology of microorganisms   |                 |                               |                             |             |
| <b>Status:</b> elective  |                 |                               |                             |             |
| <b>ECTS:</b> 15  |                 |                               |                             |             |
| <b>Requirements:</b> none  |                 |                               |                             |             |
| <b>Learning objectives</b>   |                 |                               |                             |             |
| Improving students' knowledge in the broader field of ecology of microorganisms.   |                 |                               |                             |             |
| <b>Learning outcomes</b>   |                 |                               |                             |             |
| Training students to spot problems caused by microbial activity, the independent planning and conducting of experimental tests and interpreting results, and making proposals on measures to be undertaken to address the identified problems.   |                 |                               |                             |             |
| <b>Syllabus</b>  |                 |                               |                             |             |
| <p><i>Theoretical instruction</i> Advanced study of ecology, role and importance of microorganisms in the biogeochemical cycles of matter circulation in the ecosystem (cycling of carbon, hydrogen, nitrogen, phosphorus, sulphur, iron and manganese). The study of the significance of microorganisms in ecosystem protection. Ecological valence and environmental factors in the life of microorganisms. Abiotic (water, temperature, oxygen, light, radiation, salt) and biotic factors. The relationships of microorganisms and plants, microorganisms and animals, microorganisms and humans. Microorganisms in the atmosphere, hydrosphere and pedosphere. The study of trophicity, the contamination of aquatic ecosystems and the distribution of organic products in aquatic ecosystems. Microbial interactions with pollutants in the biosphere (pesticides, heavy metals, plastics, oil). Environmental monitoring and protection - water biomonitoring, bioremediation of ecosystems.</p> <p><i>Practical instruction</i> follows the program of theoretical instruction.</p> |                 |                               |                             |             |
| <b>Weekly teaching load</b>  |                 |                               |                             | Other:<br>- |
| Lectures:<br>5 (75)  | Exercises:<br>- | Other forms of<br>teaching: - | Student research:<br>5 (75) |             |