

Learning outcomes graduate programme of ecology and nature preservation

1. Explain the need for intra- and interdisciplinary cooperation in researching different ecosystems
2. Use highly specialised theoretical and practical knowledge in planning solutions for environmental protection issues, the application of standard and new research methods and taking an interdisciplinary approach
3. Critically appraise the strategic work of the team, with self-analysis of the personal contribution in execution of the task
4. Prepare the documentation of the project proposal for the scientific research
5. To give a well-argued overview of the project results and methods to the expert and general public, using the appropriate techniques
6. Use, control, design, plan and direct laboratory and field work and studies in analysing the environment
7. Propose procedures and decisions for the needs of spatial planning and environmental protection
8. Associate the ecology of an organism with the environmental conditions at a spatial micro- and macro-scale
9. Conceive effective methods to manage wild populations, taking the legal and administrative limitations into account
10. Identify the significance of plant cover as an indicator of change in the environment, and as an active participant in the formation of environmental conditions or habitat types
11. Analyse the interrelationships of all the biotic and abiotic components with the environmental conditions, with independent recognition and classification of taxa
12. Associate the physiological processes in the organism with the effects of environmental factors
13. Implement research techniques for bacteria and viruses for the needs of analysing microbiological ecosystems
14. Describe the differentiating properties of terrestrial, aquatic and marine ecosystems and the accompanying communities
15. Outline the chemical and biological causes and effects of thermal stratification of the freshwater and marine environment
16. Recognise the factors that influence the growth of phyto- and zooplankton as support to the arguments of the causes and effects of eutrophication
17. Analyse the effects of organic and inorganic pollution on terrestrial aquatic and marine systems
18. Search the contemporary scientific and expert literature for the needs of collecting specific data on the subject of study
19. Process the obtained research results using statistical packages
20. Discuss the results of conducted field and laboratory research in the preparation of scientific or expert reports
21. Present a well-argued position with a critical review of contemporary concepts in ecology and conservation
22. Explain the interactions of abiotic and biotic factors in the environment on the assessment of the quality of individual ecosystem types

23. Differentiate the basic and specific methods that we use in researching different types of ecosystems and recognise their possibilities and limitations
24. Explain the ecological interactions that unfold in various types of ecosystems and the human impacts on them
25. Explain the threats to life in various types of ecosystems and justify the need for their protection
26. Explain the geomorphology, hydrogeology and research methods specific to karst
27. Understand the biogeochemical processes in all trophic levels of individual ecosystems
28. Apply the attained knowledge to the restoration of individual ecosystems
29. Analyse the activity of physical, chemical and biological processes on the emergence and development of the pedosphere and its influence on the biology of living beings
30. Apply the molecular methods in ecological research of plant and animal populations