Learning outcomes undergraduate programme of biology

1. Integrate the content of biological disciplines in the application of conceptual approaches to the biological sciences.
2. Integrate the fundamental biological concepts with the fundamental concepts of other sciences, validating the historical development, and in line with new scientific findings.
3. Discuss the most significant discoveries and theories through the historical advancement of the biological findings.
4. Explain the basic function, properties and processes in which nucleic acids participate as the basis for molecular mechanisms by which DNA manages development, growth or morphological characteristics of the organism.
5. Analyse the main structural elements and processes that participate in reproduction, growth, maintenance and regulation of the cell, thereby enabling the survival of living beings.
6. Explain the principles and laws of inheritance at the cell, individual and population levels.
7. Analysis the associations of organisations of bacteria, viruses and prokaryotes and the cells of eukaryotic organisms with their function.
8. Explain the fundamental morphological and anatomical assumptions, and physiological principles with the function of structural parts of autotrophic and heterotrophic organisms that are necessary to maintain homeostasis.
9. Interpret how the developmental similarities of living beings reflect their evolutionary and ecological connections.
10. Explain the evolutionary processes in the development of the living world and the emergence of individual groups of organisms and the causes for their change over time.
11. Link the differences in the structure, function and aetiology of living beings as the consequence of their adaptation to different living conditions.
12. Interpret the adaptations to living conditions with the research of the basic phases in the life cycle of organisms.
13. Analyse the position and role of microorganisms in the biosphere, cycling of materials and the flow of energy on Earth and their significance for humankind.
14. Explain the connection between the living and non-living world, and association with climatic conditions, biomes and their typical representatives through their way of life and role in the community.
15. Analyse the anatomical and physiological principles and processes in the human body as a model for the animal organism.
16. Apply the fundamental rules for safe work in the laboratory.
17. Use different devices, measuring instruments and optical aids for the application of basic laboratory methods, with the interpretation of the results of the conducted analyses.
18. Prepare materials and equipment for laboratory and field studies.
19. Separate organisms from the collected samples and conduct taxon determination.
20. Prepare biological preparations for the needs of implementing research and supplementing the biological collections.
21. Organise the collection and preparation of samples of plant and animal origin, and human tissue cells, for experiments, testing and analysis.
22. Conduct the classification of data of the conducted analyses with computer processing and an overview of the results in tabular and graphic form.

23. Conduct technical and expert tasks in protected areas, botanical gardens and zoos, museum collections, archives and libraries.
24. Recognise the various negative influences with the active participation in the resolution of current issues in environmental protection and conservation.
25. Organise the breeding of organisms for the needs of industrial agriculture and scientific research.
26. Assess the quantity of necessary material resources for experiments, with the preparation of a budget for materials, equipment and work on scientific project tasks.
27. Maintain a research laboratory and field equipment.
28. Participate in the work of a team and adapt to the conditions of the working environment.
29. Accept the need and importance of ongoing development through the available lifelong learning programmes.