## Information about updating educational programs for the 2022-2023 academic year

## **Faculty of Information Technology and Economics**

The basis for updating OP 6B05121 "Biotechnology"

For the 2022-2023 academic year based on the analysis of the strengths and weaknesses of OP 6B05121 "Biotechnology" and in accordance with the recommendations of social partners, the following new disciplines were introduced instead of the disciplines that have lost relevance:

- 1. Alash studies;
- 2. Academic writing;
- 3. General microbiology and biotechnology;
- 4. Environmental protection and monitoring;
- 5. Rational use of natural resources;
- 6. Basics of Python programming;
- 7. Mathematical modeling in biology;
- 8. Production of antibiotics, vitamins, steroids, insulin, interferon;
- 9. Biotechnology of biological active substances;
- 10. Agricultural biotechnology;
- 11. Medical and veterinary biotechnology;
- 12. Biological safety of food products;
- 13. Biotechnological safety of biotechnological production;
- 14. Pharmaceutical biotechnology;
- 15. General pharmacology;
- 16. Standardization and certification of biotechnological products;
- 17. Environmental management.

The new disciplines are aimed at acquiring knowledge, skills and abilities in the field of biotechnology, as well as knowledge of research methods and academic writing and their application in the organization of research of students in the studied field, which affected the change in learning outcomes (100%).