Division: *School of Medical Biology*

Academic programme: *19.04.01 Biotechnology, Artificial Intelligence in Industrial and Environmental Biotechnologies*

Mode of study: *full-time*

Programme length: *2 years*

Programme level: *Master's degree*

Language of instruction: *Russian*

Programme description: *The Master's degree programme is designed to form and develop competencies and practical skills in the field of applying artificial intelligence methods as a key tool in solving biotechnological problems.*

Knowledge and practical experience, obtained during educational courses of the programme, will be applied in a wide spectrum of professions, ensuring growing need for highly qualified specialists in the global sector of biological sciences.

Key technologies of artificial intelligence are used in industrial and manufacturing biotechnologies. During the course of the study, students master unique competencies:

- *Processing and analysis of data of biosphere and technosphere eco-monitoring;*
- *Video monitoring of biotechnological processes and sensory evaluation of bioproducts using computer vision.*
- *Application of biosensors and test systems to perform biotechnological tasks*
- *Intelligent control of microbiological and enzymatic processes;*
- *Identification of enzymes, microorganisms and elements of biotechnological systems using artificial intelligence technologies.*

Main programme-specific classes:

- *Industrial Biosafety and Human Ecology*
- *New Technologies of Waste Bioremediation*
- *Sensory Evaluation of New Types of Bioproducts Using Artificial Intelligence Methods*
- *Data Mining in Biotechnology*
- *Monitoring of Biotechnological Production Processes Using Artificial Intelligence Methods*
- *Artificial Neural Networks*

- *Analysis of Biotransformation Processes Using Artificial Intelligence Methods*
- *Project Management in Biotechnological Production*

Programme manager: *Irina Yu. Potoroko, Doctor of Sciences (Engineering), Professor, Director of the School of Medical Biology*