

**ADDITIONAL (MINOR) EDUCATIONAL PROGRAM
«RESEARCH BIOLOGIST»**

Who is it intended for: The “Research Biologist” (Minor) program is intended for students of the educational program 6B05101-Biology.

Relevance: Minor program “Research Biologist”, an up-to-date training program for specialists performing scientific, scientific and technical research in research centers and educational institutions in the field of biology.

Justification: The disciplines of parasitology, fundamentals of medical biology and age-related physiology, included in the additional program “Research Biologist,” provide new opportunities for students to conduct research work. Understands modern problems of biology, the basics of public health, including preserving the health of the younger generation, pathogenic biological factors in flora and fauna.

Goal: to develop students’ professional competencies in performing scientific, scientific and technical research work, improving knowledge about modern problems of biology.

Description of program:

1. Program “Research Biologist” (Minor) consists of 3 disciplines, each discipline consists of 5 credits, finally which the student must earn 15 credits.
2. The program "Research Biologist" (Minor) does not require prerequisites.
3. The number of credits for a bachelor's degree remains unchanged - at least 240 credits.

Program content:

Name of the discipline	Description of the discipline	Generated learning outcomes
Medical biology.	Medical biology is a branch of general biological science and is closely related to human anatomy. This field mainly provides knowledge about human health and the health of its internal organs and hereditary information, as well as about genetic engineering, one of the areas of modern biotechnology. Using the methods of biological modeling, they study the mechanisms of the occurrence and development of many human diseases, develop methods for their prevention and treatment. Methods of studying the structure, isolation and embedding of human genes in other cells will allow in the future to conduct gene therapy of hereditary diseases.	LO1 – students have knowledge in the field of medicine, genetics, human genetics LO 2 – knows the laws of medical biomechanics LO 3 – can provide medical and biological genetic consultation. LO 4- knows the causes of cancer, measures for their prevention LO 5- knows the patterns of individual development of the body, aging processes
Parasitology	Parasitology studies the features of the structure and life cycles of parasites, the relationship in the parasite-host system, as well as methods of diagnosis, treatment and prevention of invasive diseases. According to the three main groups of parasites of animal nature, this science includes the sections protozoology(the science of protozoa), helminthology (the science of helminths) and arachnoentomology (the science of arthropods). Diseases caused by parasites of animal origin are called parasitic, or invasive . Infectious and invasive diseases, the pathogens of which are transmitted by vectors, are called transmission (from Lat. Transmission-transmission).	LO 1– knows diseases caused by parasites, and methods of their treatment and prevention. LO 2 – knows measures for the prevention and destruction of parasitic invertebrates LO 3 – can analyze the life cycle of parasites LO 4 – knows methods of parasitological research LO 5- knows the structural features of parasitic worms
Age-related physiology.	“Age-related physiology” - studies the features of the body’s vital activity, the functions of its individual systems, the functioning of human organs and systems at different age periods, and developmental features. Students, getting acquainted with Age-related physiology, forming the complex competence of the human body and personality, develop the creative abilities of future specialists, increase their cognitive	LO 1- Possess high-level critical and creative thinking skills, are capable of self-regulation and reflection to solve professional problems LO 1 – Knows the basics of the mechanisms of cellular processes and the structural and functional tissues, organs and systems of the body. Able to perform microscopic examination of tissues.

	activity, awaken interest in the subject, and help them gain comprehensive knowledge.	LO 3 – Studies physiological, anatomical, biochemical methods for assessing living biological objects;
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