

Biological Sciences

I.M. Sechenov First Moscow State Medical University

Degree or qualification is awarded: **Researcher. Research Teaching Fellow**

Language of study: **Russian**

Mode of study: **full-time, extramural**

Duration: **8,640 hours**

Availability of free education: **yes**

Price: **294 000 rubles**

Programme curator: **Nadezhda N. Zabroda**

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The professional area of the Ph.D. program graduates includes studies of wildlife and its regularities, use of biological systems – for economic and medical purposes. Types of professional activity of Ph.D. graduates: research and teaching in the field of biological sciences.

The training program includes areas of specialization, as well as courses aimed at preparing for teaching and research activities, with an obligatory in-depth study of foreign language, history and philosophy of science.

Training of Ph.D. students is conducted according to individual plans with a possibility of selecting additional areas of specialization, one or more foreign languages.

Practical training of Ph.D. students is conducted in accordance with the program on the basis of four university hospitals, seven research institutes, the university research center, and departments of the university.

Upon completion of the program Ph.D. students represent their research work. According to results of the presentation a state-recognized diploma is issued.

Specializations within this programme

03.01.02 Biophysics

Area of specialization: Biophysics

It includes the studies of fundamental physical interactions that underlie vital processes at the confluence of biology, physics, chemistry and applied technology and health sciences. There are modern physical methods and mathematical apparatus that are widely used in biophysics.

03.01.03 Molecular Biology

Area of specialization: Molecular biology

It includes the studies of biopolymers, their components and complexes, structures and functions of genes and genomes.

03.01.04 Biochemistry

Area of specialization: Biochemistry

It includes the studies and identification of patterns of chemical vital processes, distribution, composition, structure, functions, properties, and transformations of substances inherent to living organisms, relation of such transformations to the activity of cellular structures, organelles, cells, tissues and organs of the whole organism, their communities and the whole biosphere, molecularly mediated response of living organisms to penetrating radiation, ionizing radiation, electromagnetic fields and extreme factors, as well as transformations, neutralization of xenobiotics and artificial materials, and their effect on living organisms and the biosphere as a whole.

03.01.06 Biotechnology (including Bionanotechnology)

Area of specialization: Biotechnology (including bionanotechnology)

It studies the possibilities of usage of living organisms, cultures of cells and biological processes in the production in order to obtain useful products for the national economy, medicine and veterinary medicine, directly improving the environmental impact and the formation of an ecologically benign human and animals environment.

03.02.01 Botany

Area of specialization: Botany

It studies the world of plants, its diversity, genesis, dispersal, structure and properties of plants and plant communities, their relation to the environment and other living organisms. It develops scientific basis for its rational use and conservation as a prerequisite for sustainable human development.

03.02.03 Microbiology

Area of specialization: Microbiology

It includes the studies of theoretical foundations of microorganisms activity: heredity, variation, metabolism, regularity of mutual relation with the environment and living organisms, dispersal in nature, interaction with environmental factors and living organisms, their role in the circuit of substances. It studies bacteria as well as selected groups of yeast-like and filamentous fungi, microphytic alga, protozoa.

03.02.07 Genetics

Area of specialization: Genetics

It studies phenomena of variation and heredity, regularities of storage, transfer and realization of genetic information at the molecular, cellular, organismic, and population levels.

03.02.11 Parasitology

Area of specialization: Parasitology

It includes the research in the fields of biology, medicine, veterinary medicine and agronomy related to the study of the world of parasites along with its biotic constraints and processes, general issues of parasitism, as well as specific problems of diseases caused by parasites (protozoa, helminths, ectoparasites) in humans, animals and plants. The practical importance of the specialty is to develop the scientific foundations of controlling parasites and human, animals and plants diseases caused by them, and that cause great damage to human health, economic loss of livestock and crop raising.

03.03.01 Physiology

Area of specialization: Physiology

It includes the studies of human and animal organism functioning; uses behavior, physiological, biochemical, genetic, molecular biological approaches to analyze the functions of the body.

03.03.04 Cell Biology, Cytology, Histology

Area of specialization: Cell biology, cytology, histology

It includes the studies of origin, structure, development and functioning of cells and tissues, and their interaction in the process of vital activity in normal state and in various pathological disorders.