

Genome Engineering and Molecular Biology

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **MIPT Certificate**

Language of study: **Russian, English**

Mode of study: **full-time**

Duration: **7 weeks - 250 academic hours (7 credits), 40 academic hours per week (+ weeklong preparatory course).**

Availability of free education: **yes**

Price: **211 000 RUB. (approx. \$3000)**

Programme curator: **Pavel Volchkov**

Tel.:

E-mail:

Target Audience: Master's and PhD students majoring in Genetics, Biotechnology, Molecular Biology, Cell Biology, Virology, Biology and Immunology.

Admission Requirements: good theoretical knowledge in the field of genetics, molecular and cell biology, and English language proficiency.

Mode of study: On campus.

Program Coordinator:

Pavel Volchkov, PhD, executive Director of the MIPT Life Sciences and Biopharmineering Center, Head of the Genome Engineering Lab.

World-level genetic scientist, MSU graduate, had work experience at the University of Chicago and Harvard Medical School. In his scientific activity, he specializes in applied projects in the field of genetics, bioinformatics, agro and biomedicine.

Program description:

The program is a practical course focused on acquainting students with methods of genomic engineering, molecular and cellular biology, data analysis and experimental planning.

The first two weeks of the program are devoted to learning the basic methods of molecular cloning and genetic engineering on educational tasks. Students will gain competence in extraction and measurement of DNA concentration, PCR and electrophoresis of nucleic acids, restriction and ligation. They will learn how to assemble their first plasmid vector containing a green fluorescent protein gene and transform a bacterial laboratory cell culture.

The remaining time is left for rotation-internship in real laboratory projects. During the rotation-internship students will apply the learned methods in practice, conduct real experiments under the guidance of postdocs of the laboratory. This part of the program also includes experiments planning, literature studying, and analyzing the data obtained.

At the end of the program, students will present results of their work to the laboratory and make a report of a scientific article at the journal club.

Specializations within this programme