# BIOINFORMATICS AND SYSTEMS BIOLOGY (2024)

**iTMO**

**120 credits**

## Professional training

### Mandatory courses

- Introduction to Bioinformatics
- Scientific Python
- Systems Biology
- Medical Genetics

**1, 2 semesters**   **21 credits**

### Elective specializations/modules/courses

- Statistics
- Advanced Statistics

- Programming in Python
- Molecular Biology

- Discrete Mathematics
- Algorithms and Data Structures

- Translation Research Methodology
- Applied Statistics

- Structural Bioinformatics
- Bioinformatics Algorithms
- Optimization and Sampling
- Advanced Machine Learning
- Biotechnology
- Microbial Omics
- Population Genetics and Genomics

**1, 2, 3 semesters**   **24 credits**

**45 credits**

## Fundamental training

- Foreign Language
- Creative Technologies
- Thinking
- Entrepreneurship
- Applied Artificial Intelligence
- Soft Skills

**1, 2, 3 semesters**

**15 credits**

## Practical training

- Research Seminar
- Research Work
- Pre-graduation Internship
- Preparation for Thesis Defense and Thesis Defense

**1, 2, 3, 4 semesters**

**60 credits**

# Optional courses (in English)

- Higher Mathematics
- Introduction to Linux

1 semester