iTMO

TENTATIVELIST OF EXCHANGE COURSES

THE COURSES ARE DIVIDED INTO THREE MODULES AS BELOW:
MODULE 1: SOFT SKILLS
MODULE 2: ECONOMICS AND INNOVATIONS
MODULE 3: ICT & PROGRAMMING/TECHNOLOGY(comprises different tracks)

PLEASE BE INFORMED THAT COURSES OF DIFFERENT TRACKS/MODULES MAY OVERLAP WITH EACH OTHER. You are recommended to select most of the courses within one track and fewer courses from the rest of the tracks/modules.

The average number of required ECTS credits is 10-30 credits per one semester (depending on your home university's requirements).

The lists of courses may undergo minor changes at the beginning of each semester. Your final lists of courses will be confirmed at the beginning of your studies.

Please be informed that some courses have a capacity limit, and you may be redirected to other subjects.

MODULE 1: SOFT SKILLS

Location: 9 Lomonosova St.

Course title	ECTS Credits
Intercultural Communication	3
Russian as a Foreign Language	3
International Research Management Essentials	3

MODULE 2: ECONOMICS AND INNOVATIONS

Locations: 9 Lomonosova St.
11 Chaikovskogo St.

Course title	ECTS Credits
Sustainable Cities Development	3
Theories of contemporary art	3
Operational Management of Creative Projects	3
Regulation of ICT Business in Russia and Globally	3
Technology Trends in ICT	3
Technology Trends in Life Sciences	3

MODULE 3: ICT & PROGRAMMING/TECHNOLOGY

Course title	ECTS Credits
TRACK:HPC (HIGH-PERFORMANCE COMPUTING) **(available only for Master's students of relevant majors and comprehensive CV is required)** **Location:14BirzhevayaLiniya**	
Technologies & Infrastructure for Big Data	4
Machine Learning	3
Data Visualization	3
Quantum Informatics and Quantum Algorithms Theory	3
Medical statistics	3
Discrete modeling	3
Architecture of Neural Networks for Deep Learning	3

TRACK: CT&BioInf (COMPUTER TECHNOLOGIES& BIOINFORMATICS)
(basic CT skills are required; for some courses a short interview with the track's coordinator is required)

Location:49Kronverksiy Pr.

Medical Genetics	3

TRACK: M&R (MECHATRONICSAND ROBOTICS)
(basic knowledge in mechanics, mathematics and physics is required)

Locations: 14-16 Pereulok Grivtsova
          49 Kronverksiy Pr.

Modern Control Theory (part 2)	3
Control Systems Programming (part 2)	3
Optimization Methods and Optimal Control	3
Adaptive and Robust Control	6
Sensorless Control	6
Digital Control Systems	3
Robot Programming	3
Design of Mechatronic Systems	3
Machine learning in Robotics (part 1)	6

TRACK: ISec (INFORMATION SECURITY)
(basic CT skills are required)
Location:9 Lomonosova St.

Web Software Development	3
Operating systems	3
Information security laws and regulations	3
Cryptography and Data Security * (the course requires the good knowledge of mathematics)	3

TRACK: EM (ENVIRONMENTAL MANAGEMENT)

Location:9 Lomonosova St.

Organization of Cleaner production	3
Corporate Environmental Management	3
Alternative Energy Research	3
Modern Management Systems Based on International Standards	3
Life Cycle Assessment	3

TRACK: BioCh (BIOCHEMISTRY)
(basic knowledge in chemistry, biotechnology, chemical engineering is required)

Location:9 Lomonosova St.

Epigenetics	6
Advanced Functional Materials (only on campus)	6
Molecular Oncology	3
Cell Biotechnologies (only on campus)	3
Preclinical studies	3
Basics of Genetic Engineering (only on campus)	6
Nanoengineering and Nanofabrication	6

TRACK: PH&MS (PHYSICS AND MATERIAL SCIENCE)
(available for students majoring in Physics, Engineering or Material Science;a short interview with thetrack'scoordinator can be required for admission)

Location:9 Lomonosova St.

Introduction to Materials Science (part 1)	3
Special sections of inorganic chemistry	3
Microfluidics	3
Computational physics	6
Spintronics	6

Quantum Optics	6
Methods of computer simulation	6
Electrodynamics of metamaterials	3
Nanoplasmonics	6
Optomechanics	6
Experimental methods of nanophotonics	6