

## TENTATIVE LIST 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 20-30 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

### MODULE 3: ICT & PROGRAMMING/TECHNOLOGY

Course title	ECTS Credits
<b>TRACK: HPC (HIGH-PERFORMANCE COMPUTING)</b> <b>(available only for Master's students of relevant majors and comprehensive CV is required)</b>	
<b>Location: 14 Birzhevaya Liniya</b>	
Technologies & Infrastructure for Big Data	4
Machine Learning	3
Data Visualization	3
Quantum Informatics and Quantum Algorithms Theory	3
Medical statistics	3
Discrete modelling	3
<b>TRACK: CT&amp;BioInf (COMPUTER TECHNOLOGIES&amp; BIOINFORMATICS)</b> <b>(basic CT skills are required; for some courses a short interview with the track's coordinator is required)</b>	
<b>Location: 49 Kronverksiy Pr.</b>	
Medical Genetics	3

**TRACK: M&R (MECHATRONICS AND 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

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

We are confirming the courses with the track's coordinator. We will update this section as soon as possible. We are sorry for any inconvenience.

**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.**

We are confirming the courses with the track's coordinator. We will update this section as soon as possible. We are sorry for any inconvenience.

**TRACK: PH&MS (PHYSICS AND MATERIAL SCIENCE)****(available for students majoring in Physics, Engineering or Material Science; a short interview with the track's coordinator 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