

Master programs taught in English: ITMO University

General Information	Important information	Courses
<p><i>Master of Science in Photonics and Optoinformatics</i> The program focuses on the study of metamaterials, the new materials that will revolutionize telecommunication, radiotechnology, and power industry. The physics of metamaterials combines optics and nanophotonics, radiophysics and solid-state physics. The program is led by the Center of Nanophotonics and Metamaterials of the ITMO University, one of the leading research centers in the field. http://en.ifmo.ru/en/viewjep/2/10/Metamaterials.htm</p>	<p>Admission Requirements: Bachelor's degree in Physics, Engineering or relevant field with excellent/good grades. CV & motivation letter. Upper-intermediate level of English. For admission to the partner university IELTS or TOEFL may be required.</p>	<p>Classical electrodynamics Business ethics Mathematical methods Research project Advanced quantum mechanics Philosophy Computational methods and computer modeling in physics Rigorous methods of electrodynamics Metamaterials</p>
<p><i>Master of Science (MSc) Diploma ITMO University in the field of Applied Mathematics and Informatics</i> The Master program of Machine Learning and Data Analysis at ITMO University is designed to educate data scientists. Students will learn how to use the latest tools and analytical methods to analyze a real-world data. It is great opportunity to study best practices for collection, storage, and retrieval of data, machine learning algorithms and data mining techniques, data visualization and modeling. The acquired knowledge and skills will enable graduates to successfully implement data analysis projects in social networks, marketing campaigns, financial analytics, bioinformatics and many other domains. http://en.ifmo.ru/en/viewjep/2/43/Machine_Learning_and_Data_Analysis.htm</p>	<p>Admission Requirements: Bachelor's degree in computer science, mathematics, or engineering disciplines with good/excellent grades. CV & motivation letter. Upper-intermediate level of English.</p>	<p>The main subjects of study</p> <ul style="list-style-type: none"> • Modern algorithms and techniques of machine learning and data mining, including probabilistic models and deep learning networks • Mathematical disciplines forming the basis of these algorithms, such as optimization and statistics • Related field of data analysis application: information retrieval, social network analysis and natural language processing • Programming languages and technologies for data mining • Data mining contests devoted to practical application of knowledge and skills to solve Kaggle problems

<p>Master of Science (MSc) Diploma ITMO University</p> <p>Focuses on modern aspects of chemistry and biochemistry of nucleic acids and nucleic acids' binding proteins. Special emphasis is made on gene engineering of functional oligonucleotides, research of DNA-based molecular logic gates that can be used in the first DNA-based computer processor and developing new hybridization probes for real-time analysis of specific DNA and RNA sequences. The program uniquely combines state-of-the-art computational and practical aspects of material sciences, nanotechnology, molecular biology and biochemistry. It effectively bridges material sciences and information technologies, both being key research areas of ITMO University.</p> <p>http://en.ifmo.ru/en/viewjep/2/44/Molecular_Bioensing_and_Biorobotics.htm</p>	<p>Admission Requirements: BSc degree in Microbiology, Biotechnology, Chemical Engineering or related field with excellent/good grades, CV & motivation letter. Upper intermediate level of English language (B2 according to CEFR).</p>	<p>Advanced Thermodynamics Business ethics Mathematical methods Research project Philosophy of science Advanced analytical chemistry Sol-gel chemistry and technology Characterization of nanostructured materials Advanced biochemistry</p>
<p>Master of Science in Sustainable Chemical Technologies</p> <p>Focuses on the modern aspects of nanotechnology for green chemistry and sustainability. Special emphasis is on engineering of functional nanoarchitectures for catalysis as well as biomedical applications and photonics. The program uniquely combines the state-of-the-art computational and practical aspects of material sciences and nanotechnology. It effectively bridges material sciences and information technologies, both strategic research areas of ITMO University.</p> <p>http://en.ifmo.ru/en/viewjep/2/45/Nanoengineering_for_Green_Chemistry_and_Advanced_Materials.htm</p>	<p>Admission Requirements: BSc degree in Chemistry, Chemical Engineering or related field with excellent/good grades, CV & motivation letter. Upper intermediate level of English language (B2 according to CEFR).</p>	<p>Inorganic chemistry and materials Business ethics Mathematical methods Research project Philosophy of science Green chemistry and sustainability Sol-gel chemistry and technology Sol-gel chemistry and technology Nanoengineering and nanofabrication Computational methods and modeling in materials chemistry</p>