

Theoretical Physics (in English)

National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

Degree or qualification is awarded: **Bachelor degree**

Language of study: **English**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **59 280-110 900 rubles per semester**

Programme curator: **Sergey V. Ivliev**

Tel.: **Contact name: Olga N. Petukhova, Phone number. +74957885699, ext. 8045**

E-mail: ONPetukhova@mephi.ru

Goals of the Program (brief description of the Program)

Training for Bachelors, capable to work successfully in the field of theoretical and mathematical physics, having general and subject-specialized competences stimulating their social mobility and stability in the labor market.

The area of professional activity of graduates: scientific research work in physics, based on the widespread use of methods of theoretical and mathematical physics, mathematical modeling, theoretical study of the physical laws in the natural and technically prepared systems, numerical experiment, interpretation and planning of modern numerical experiment, engineering calculations .

Apart from the basic special disciplines of the main direction on the 4-th year of undergraduate (and further of the master) study there are taught specialized author courses in a number of areas of modern theoretical physics: "Methods of Statistical Physics", "Theory of Super-strong Fields," Interaction of Radiation with Matter, "" Nuclear Theory "" Integrated Media of Mathematical Modeling". Teaching and research work of the students starts at 6-th semester and runs on the base of the applied research institutes, institutes of Russian Academy of Science, research centers, in the Russian Federal Nuclear Centers, at the Department of Theoretical Nuclear Physics and other departments and laboratories of NRNU MEPhI.2) The main special disciplines of the direction (3-4-th courses) : "Field Theory", "Quantum Mechanics", "Equations of Mathematical Physics", "Theory of Probability and Mathematical Statistics", "Numerical Methods", "Statistical Physics", " Fluid Dynamics ", " Macroscopic Electrodynamics ", "Quantum Field Theory ", "Group Theory ", " Theory of Condensed State ".1) Basic training in the humanities, natural sciences and general professional disciplines during two years, being uniform for the faculty of Experimental and Theoretical Physics.The curriculum includes two steps:The research work of students runs in close connection with works carried out at the department and in research organizations of the State Corporation "Rosatom" and the Russian Academy of Science.

The list of enterprises for practice and employment of graduates: Russian Scientific-research Centers, Enterprises of "Russian Atom"; Institutes of Russian Academy of Science such as Russian Federal Nuclear Center VNIIEF, VNIITF, Kurchatov Institute, Research Institute of Automatics of N.L. Dukhov, LPI, ITEP and others.

This program is also available in Russian language.

Specializations within this programme

Applied Mathematics and Physics

Objects of the professional activity

Models, methods and tools for basic and applied research and development in the fields of mathematics, physics and other natural sciences on profiles of objective activity; atoms, molecules and nanostructures, atomic nucleus, classical and quantum fields, elementary particles and plasma, condensed matter, lasers and their applications, mathematical models for the theoretical and numerical studies of phenomena and laws in the above mentioned fields of physics.