**01.04.02 Applied mathematics and computer science**

**Program Summary**

**Program title**: High performance computing and parallel programming technologies.

Program goals: training of graduate students in the field of applied mathematics and computer science for scientific research and industrial organizations of the nuclear and other high-tech industries, forming universal and specialized competencies that contribute to the social mobility and competitiveness of the graduates in the labour market.

**Duration of study**: full-time education-2 years.

**Department**: Department of applied mathematics, SPTI NRNU MEPhI.

**Areas of expertise**: research, design, production and technological, organizational and administrative, pedagogical, associated with the use of means and methods of mathematics, parallel programming, information and communication technologies and automated control systems, simulation engineering analysis problems.

**Objects of professional activity are**: mathematical physics, mathematical modeling, numerical methods, probability theory and mathematical statistics, high performance computing and parallel programming technologies, algorithms, libraries and software packages, products, application software, mathematical and computer methods of image processing, scientific visualization.

**Curriculum features**: the curriculum complies with NRNU MEPhI higher education standards taking into account the requirements of Rosatom state corporation as the main employer of graduates. The educational trajectory of the graduate student is formed taking into account their choice of disciplines. Core courses focus on the study of special courses determined the direction of future industrial activity and includes: finite element method, approximation methods of mathematical physics problems on irregular grids, modern computer technology, numerical methods, gas dynamics, finite element method, mathematical foundations of transport theory, generalized functions, integral transform methods, etc.

Research work of students is carried out in close connection with the work conducted at the Department and in the offices of the Russian federal nuclear center – VNIIEF.

Graduates of the department receive training for solving a wide range of tasks in the interests of scientific research and production enterprises of the nuclear and other high-tech industries.

**Enterprises for internship and employment of graduates**:

Russian Federal Nuclear Center VNIIEF; enterprises of Rosatom state corporation.