

## Secure high-performance computer systems (Master)

<b>Higher Education Institution</b>	National Research Nuclear University "Moscow Engineering Physics Institute"
<b>Country</b>	<a href="https://www.mephi.ru">https://www.mephi.ru</a>
<b>City</b>	Russia
<b>Web-site</b>	Moscow
<b>Name of the Programme</b>	Secure high-performance computer systems
<b>Degree awarded</b>	Master
<b>Qualification Level</b> (first/ second cycle)	Second
<b>Programme objectives; Profile</b>	<p>1. In the field of education the aim of the educational program is to prepare highly educated person in the field of information technologies to provide innovative reforms in Russia, the development of the country's competitiveness in the global high-tech markets, i.e. to give profound humanitarian, social, economic, mathematical and scientific knowledge for their subsequent use in engineering activities; to provide graduates with competences which enable them to work successfully in the field of professional activity, to have universal and domain-specialized competences, to promote social mobility and stability in the labor market.</p> <p>2. In the field of the individual's upbringing the goal of the educational program is to form social and personal qualities of graduates: dedication, organization, hard work, communication skills, ability to work in a team, responsibility for the final result of their professional activities in the field of information and communication technologies, citizenship, tolerance; improving their overall culture, the ability to independently acquire and apply new knowledge and skills.</p>
<b>Programme Duration</b>	2 years
<b>Total number of ECTS Credits awarded</b>	120 credits

<p><b>Curriculum analysis</b> (% and credits):</p> <ul style="list-style-type: none"> <li>- <b>engineering fundamentals and advanced engineering subjects (including final thesis)</b></li> <li>- <b>mathematics / natural sciences fundamentals</b></li> <li>- <b>humanities and socioeconomics studies</b></li> <li>- <b>other</b></li> </ul>	<ul style="list-style-type: none"> <li>- engineering fundamentals and advanced engineering subjects (including final thesis) 65,8%, 79 ECTS</li> <li>- mathematics / natural sciences fundamentals 20,0%, 24 ECTS</li> <li>- humanities and socioeconomics studies 14,2, 17 ECTS</li> </ul>
<p><b>Brief description of the programme</b></p>	<p>The program is implemented by the Department of "Computer Systems and Technologies" (Institute of Cyber Intelligence Systems). <b>Time of full-time study</b> - 2 years. According to this education program graduates receive a state diploma of NRNU MEPhI with the qualification of "Master" in "Computer Science and Engineering."</p> <p><b>The program is aimed to</b> the preparation of high qualified masters in the field of computer systems and technologies for the staffing of research institutes, enterprises of the nuclear, defense and other high-tech branches.</p> <p><b>Scientific director of the program:</b> Dr. Ivanov M. A., Postdoctoral Fellow, Professor, head of the "Computer Systems and Technologies" department, the author of more than 150 scientific and educational works.</p> <p><b>Feature of the preparation:</b> The program provides the formation of skills in the area of high-performance computing, including the use of hybrid supercomputing technology, development of digital equipment using advanced methods and tools for designing FPGA. Graduates with the master degree possess competences in the field of information systems architecture, secure system and application software development (including mobile platforms oriented software). Much attention is paid to the preparation of the competitive persons in the interests of high-tech industries informatization in a globalized</p>

	<p>world information space.</p> <p><b>Research work</b> is focused on master's basic and applied research aimed at the creation and implementation of high technology developments in the field of high performance computing with the use of modern protected information technologies.</p> <p><b>Occupational field of masters includes:</b></p> <ul style="list-style-type: none"><li>• development of computer systems and networks;</li><li>• design of digital equipment with the FPGAs;</li><li>• development of system and application software;</li><li>• comprehensive analysis of the information systems security.</li></ul> <p><b>The objects of professional activity of masters are:</b></p> <ul style="list-style-type: none"><li>• computer systems and networks in a secure realization;</li><li>• automated systems for information processing and management;</li><li>• computer-aided design systems;</li><li>• automated systems software;</li><li>• damaging software elimination tools.</li></ul>
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