
MIPT
MOSCOW INSTITUTE
OF PHYSICS AND TECHNOLOGY
МФТИ
ЛАБОРАТОРНЫЙ КОРПУС
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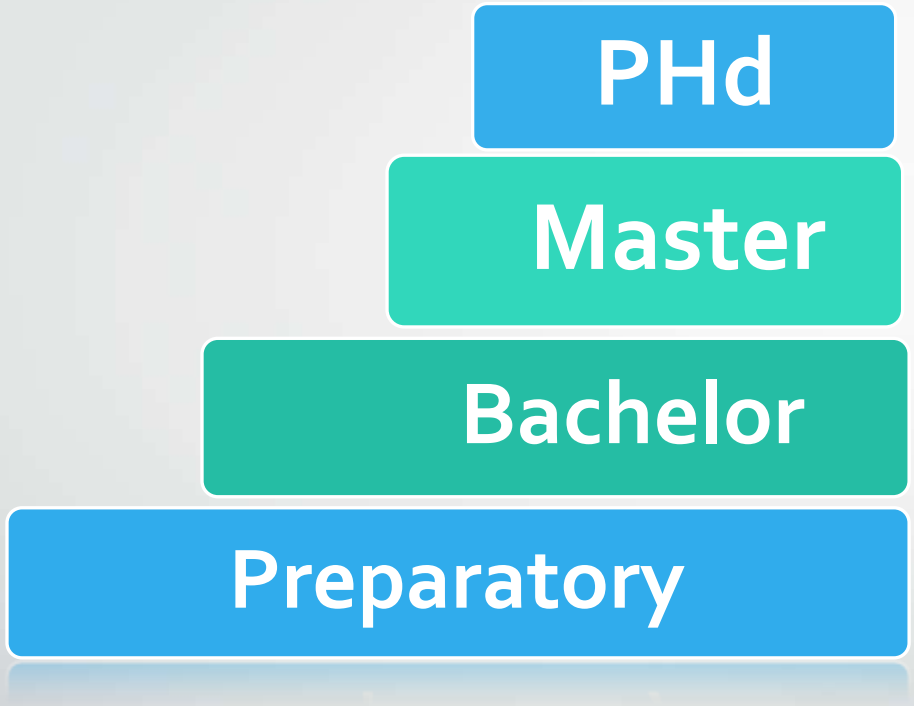
Programs of Education

MIPT
MOSCOW INSTITUTE OF PHYSICS AND TECHNOLOGY

Level of Education



700 students

46 countries

Short-Term Internship Programs

Language: English
Duration: from 1 to 10 months
ECTS credits: depends on the internship program
Entry requirements:

- Bachelor's/Master's/PhD or equivalent degree
- 20-35 years old
- High academic results
- Proof of English language knowledge equivalent to level B2 (TOEFL iBT, IELTS or equivalent)

Conditions Provided

- Accommodation

- Medical insurance

- Visa

Suggestions for BRICS Network University

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Main directions in the field of Energy

- Nuclear power & nuclear safety
- Energy efficiency and conservation
- Intellectual energetic (Smart Grids)
- Petroleum Engineering and Geophysics hydrocarbons

Options:

- Master programs in English
- Module courses
- Internship programs
- Summer schools
- Scientific conferences

Suggestions for BRICS Network University

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BEAM-PLASMA SYSTEMS AND TECHNOLOGIES

The program is targeted at fundamental and applied researches in plasma physics and plasma chemistry associated with advanced technologies; it is based on the system approach to the beam-plasma systems and to their life-cycle support.

The Master Program gives students unique chance to study advanced industrial and aerospace applications of the Electron-Beam Plasma. The Program is interdisciplinary and joins physical, chemical, engineering and biomedical aspects. All fundamental and applied problems are considered on the basis of system approach. Students acquire basic knowledge and professional skills and then they can elect specialization in scientific, engineering or business fields. In any case practical training by means of labs and participation in real projects are the main part of the educational process.

Suggestions for BRICS Network University

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BEAM-PLASMA SYSTEMS AND TECHNOLOGIES

Studied Courses include:

- Electron kinetics
- Plasma physics
- Plasma chemistry
- Plasma medicine
- Chemistry of high energies for inorganic, organic and bio-organic matters
- Plasma technical systems
- System analysis and simulation of Beam-Plasma Systems
- Industrial Beam-Plasma technologies
- Aerospace Beam-Plasma technologies
- Elective discipline

Suggestions for BRICS Network University

BEAM-PLASMA SYSTEMS AND TECHNOLOGIES

	1st SEMESTER	ECTS credits	2nd SEMESTER	ECTS credits
		30		30
1st YEAR	Russian as foreign language	2	Russian as foreign language	2
	Program orientation course	2	Selected sections of general Physics	2
	Selected sections of general and bioorganic chemistry	2	Selected sections of advanced mathematics	2
	Selected sections of general Physics	2	Plasma physics	3
	Selected sections of advanced mathematics	2	Plasma technical systems	3
	Selected sections of computer science.	2	System analysis and simulation of Beam-Plasma	3
	Electron kinetics	2	Chemistry of high energies for inorganic, organic and bio-organic matters	2
	Personal research project	16	Personal research project	13
2nd YEAR	3rd SEMESTER	30	4th SEMESTER	30
	Russian as foreign language		Personal research project Master thesis	
	Plasma chemistry	4		
	Beam-plasma technologies. Manufacturing technologies.	4		20
				10
	Personal research project	19		
	Qualification exam	3		

Suggestions for BRICS Network University

ENERGY TECHNOLOGIES & ENVIROMENTAL SAFETY

The program is aimed at training professionals in the field of modern safety technologies of nuclear energy and industry, the ecological impact of objects of nuclear energy and industry on the environment and the population, the economic efficiency of the nuclear industry development in view of environmental and safety.

Master's program will allow students be oriented in the wide range of actual investigations related to:-Safety problems of different types of reactors; Advanced methods of analysis of various aspects of the safety of reactor facilities and nuclear power plants; New approaches to modeling of physical and chemical processes and heat hydrodynamic processes in nuclear reactors; Ensure the safety of radioactive waste disposal and radio ecological nuclear power plant

Suggestions for BRICS Network University

ENERGY TECHNOLOGIES & ENVIROMENTAL SAFETY

Studied Courses:

- The physics of fast gasdynamic processes
- Hydrodynamics of multiphase flows
- Computational Methods in Solid Mechanics
- Physical fundamentals of radiobiology
- Basics of Radiation Biology
- Physical and mathematical models and software systems in radiation ecology
- Methods of disposal of radioactive waste and spent nuclear fuel
- Economy of Energy safety
- Statistics of extremum and the Risks theory

Suggestions for BRICS Network University
ENERGY TECHNOLOGIES & ENVIROMENTAL SAFETY

	1st SEMESTER	ECTS credits	2nd SEMESTER	ECTS credits
		30		30
1 YEAR	Russian as foreign language	2	Russian as foreign language	2
	Re-introduction to General Physics	2	Fundamentals of fluid dynamics and heat transfer	3
	Re –introduction to Higher Mathematics	2	Hydrodynamics of multiphase flows	3
	Selection sections of Nuclear Physics	2	Basics of Radiation Biology	3
	Program orientation course	3	Computational methods in continuum mechanics	3
	Personal research project	19	Personal research project	16
2 YEAR	3 rd SEMESTER	30	4th SEMESTER	30
	Russian as foreign language	2	Economy of the nuclear energy safety	
	Mathematical modeling and numerical methods	3		4
	Physical processes in nuclear reactors	3		
	Non-classical transport in geological media	3		
	Methods of disposal of radioactive waste and spent nuclear fuel	3	Personal research project Master thesis	16
	Personal research project	14		10
	Qualification exam	2		

Suggestions for BRICS Network University

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