



Why Master's Degree program at Peter the Great St. Petersburg Polytechnic University?

- Master program "Power Plant Engineering" is delivered in English.
- World-famous professors from SPbPU and other leading Russian and European technical universities.
- Unique opportunities for international academic mobility. One semester abroad at academic partners of SPbPU.
- Multidisciplinary studies covering different fields: Energy Technology, Electrical Engineering, Civil Engineering, and Economics.
- Wide range of elective courses that gives possibilities to individually profile the education depending on the field of interest.
- It is difficult to imagine the world without energy. Choosing the Master Program "Power Plant Engineering" the student builds up his secure future!



Peter the Great St. Petersburg Polytechnic University

In 2010 Peter the Great St. Petersburg Polytechnic University gained the status of the "National Research University"; also known as Polytech, an acknowledged leader in Russian engineering education. Nobel Prize winners P.L. Kapitsa, N.N. Semenov, Zh.I. Alferov are only a few of hundreds of gifted and talented scientists whose professional activities are associated with Polytechnic University.

The Institute of Energy and Transport Systems covers two study areas – Electromechanical and Power Machinery.

Electromechanical division was formed on the basis of the Faculty of Electrical Engineering training highly qualified specialists in the field of electric power production, transferring and distribution as well as design and after-sales service of electrical engineering, electromechanical and electrophysical equipment for electric power plants, electricity supply networks, industrial plants and new electrotechnologies.

Power Machinery division was formed on the basis of the Faculty of Power Engineering founded in 1934. Scientists and graduates from the Faculty made enormous contribution to the development of power engineering and national defense. At present the branch is one of the leading training centres for specialists in the field of heat-and-power engineering, power and transport engineering industry.

MASTER OF SCIENCE IN TECHNOLOGY

POWER PLANT ENGINEERING

International Master's Degree program in English

Key information about the study program in Saint-Petersburg, Russia



www.eng.spbstu.ru

KEY FACTS

▶ Admission requirements	Applicants are required to hold a Bachelor's degree in Energy Technology, Power Machines, Power Engineering or an equivalent degree according to the educational system of the country they come from, all applicants must demonstrate English skills at B+ level.
▶ Admission tests	Examination in the field of power plant engineering and an interview in English with a program coordinator (option – via Skype).
▶ Admission procedure	Written on-line application. Application deadline – June, 30. International applicants may find more information concerning admission at the official website of the Department coordinating the program: www.nnhpe.spbstu.ru/en/category/foreign-student/ .
▶ Program starts	Autumn semester – September, 1st
▶ Duration of program	2 years
▶ Total workload	120 ECTS
▶ Degrees awarded	Master of science (MSc)
▶ Tuition fee	for Russian students — 190 000 RUB / year for foreign students — 260 000 RUB / year

CONTACT INFORMATION

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Curriculum

1st SEMESTER (30 ECTS)

► Compulsory courses	<ul style="list-style-type: none"> English for Technical Communication (2.5 ECTS) Numerical Methods in Heat and Mass Transfer (5 ECTS) Power Machines (5 ECTS) Steam Boilers (5.5 ECTS) Electrical Machines (3 ECTS) Mathematical Physics (3 ECTS) Thermal Power Plants (6 ECTS)
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2nd SEMESTER (33 ECTS)

► Compulsory courses	<ul style="list-style-type: none"> English for Technical Communication (2 ECTS) History and Philosophy of Science (2 ECTS) Modern Energy Problems (3 ECTS) Modes of Operation of Thermal Power Plants (4 ECTS) Pump Equipment of Power Plants (3 ECTS) Energy Efficient HVAC Systems (3 ECTS) Energy Systems Engineering (3 ECTS)
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► Elective courses	<p>Group A (4 ECTS):</p> <ul style="list-style-type: none"> Energy Efficient Buildings and Structures or Energy Audit of Buildings and Constructions <p>Group B (4 ECTS):</p> <ul style="list-style-type: none"> Renewable Energy: Resources and Technologies or Computer Technologies in Science and Industry <p>Group C (5 ECTS):</p> <ul style="list-style-type: none"> Modern Energy Technologies or Bioenergy Technology Solutions
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3rd SEMESTER (30 ECTS)

► Compulsory courses	<ul style="list-style-type: none"> Ecology (2 ECTS) Maintenance Management (3 ECTS) Innovation Management in Industry (4 ECTS) Modeling of Process Engineering (3 ECTS) Energy Efficiency and Energy Saving in Industry (5 ECTS) Advanced Topics in Modeling of Energy Systems. Combined Cycle Power Plants (4 ECTS) Waste Heat Recovery Techniques (4 ECTS)
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► Elective courses	<p>Group D (5 ECTS)</p> <ul style="list-style-type: none"> Network Problems and Electrical Systems or Technology High Voltage Technique
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4th SEMESTER (27 ECTS)

► Compulsory courses	<ul style="list-style-type: none"> Scientific and Research Practice (10 ECTS) Pedagogic Practice (2 ECTS) Scientific and Research Work. Master Thesis Completion (15 ECTS)
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MSc in Power Plant Engineering

The Master's Degree Program in Power Plant Engineering comprises a wide range of power engineering subjects aimed at theoretical and practical training.

The program is implemented with the participation of leading professors of Peter the Great St. Petersburg Polytechnic University and other leading Russian and foreign universities. All lectures and seminars are delivered in English.

Objective of the program

The Master's Degree program has been developed to train highly qualified professionals to design, operate and maintain power plants.

Upon graduation the participants will become proficient in the field of modern energy sector. Our graduates of "Power Plant Engineering" Master's Degree Program are highly-trained professional engineers capable of the analysis, evaluation and implementation of the state-of-the-art technical solutions aimed at improving the energy efficiency of power plants. Our graduates develop practical skills and professional competences in the design and operation of power plants, including construction, commissioning, start-up and management; and the capability to simulate and analyze the operation of power plants with the use of up-to-date sophisticated software.



KEY ADVANTAGES

- The program provides our students with:
 - extensive interaction between lecturers and students during scientific and research work;
 - the profound knowledge and wide network of international contacts for further careers in top positions in energy companies;
 - tours to industrial facilities.
- The program offers a unique opportunity to have an internship at the leading Russian energy companies.
- The program gives foreign students the opportunity to study in international and multinational academic environment, be involved in extracurricular activities at the University.
- Unique opportunities for international academic mobility. One semester abroad in one of the partner universities.

Length of the program and format

2 years, classes are held 3-4 times a week

Total workload

120 ECTS

TEACHING METHODS

The program aims to develop practical skills and professional competences in the field of:

- advanced knowledge of thermodynamics;
- operation and design of power plants;
- development of energy efficient technologies and solutions in energy industry;
- modeling of power plants;
- modes of operation of power plants;
- environmental safety;
- power management.

PARTNERS



1. Lappeenranta University of Technology, Finland. Strategic focus areas of this university are green energy, technology and the sustainable value creation, and the international role as a hub of Russian relations. Master 's degree program "Energy Technology".



2. Leibniz University of Hannover, Germany. This university is a member of nine leading Institutes of Technology in Germany.



3. GTTK-1 is the leading producer of electricity and heat in the North-West region of Russia and the second largest power generating company in Russia.



4. South-West Power Plant is the energy facility of a new generation equipped with the state-of-the-art equipment, modern energy systems and process automation.



SIEMENS