



MASTER OF SCIENCE IN TECHNOLOGY AND ENGINEERING

ELECTRICAL POWER 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	<ul style="list-style-type: none"> • Bachelor's, Specialist's or Master's degree in the related subject area • English at B+ level
▶ Admission tests	<ul style="list-style-type: none"> • Multidisciplinary written exam in the related subject area • Interview with a program coordinator (option - via Skype)
▶ Admission procedure	<ul style="list-style-type: none"> • Written application • Previous education degree • Certificate of English • Deadline for documents submission – June, 30 • Foreign students may find more information at the official web-site www.eng.spbstu.ru.
▶ Program starts	Autumn semester – September, 1
▶ Duration of program	2 years
▶ 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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Why Master's Degree program in Technology and Engineering at Peter the Great St. Petersburg Polytechnic University?

- Peter the Great Saint-Petersburg Polytechnic University is one of the top Russian universities in electrical power engineering.
- “Electrical Power Engineering” Master's degree program is focused on foremost experience in the construction of electric power systems and application of modern electrical equipment.
- Students take part in academic mobility programs.
- Program graduates are highly trained for the professional activities in the field of electric power engineering and electric power equipment at multinational companies in different countries.
- Our graduates develop theoretical and practical competences enabling them to participate in research and development as well as testing and operation of modern electric power engineering systems.



Peter the Great St. Petersburg Polytechnic University

Peter the Great Saint-Petersburg Polytechnic University (SPbPU) was founded in 1899 by the order of Russian minister of finance Sergei U. Witte and since then has remained Russia's leading polytechnical university. In 2010 SPbPU gained the status of «National Research University», which appeared to be recognition of its role and capabilities both in specialist training and multidisciplinary scientific research and development. Nobel prize winners such as Pyotr L. Kapitsa, Nikolay N. Semenov and Zhores I. Alferov are only a few of hundreds of gifted and talented scientists whose professional activities are associated with Poly-technic University.

SPbPU today is a backbone, multidisciplinary university of Russian polytechnic education, leader in multidisciplinary scientific research, world-class industry technologies and high-technology innovations.



Curriculum

1st SEMESTER (30 ECTS)

▶ Compulsory subjects	<ul style="list-style-type: none"> • Computer-aided network and information technology in power engineering (4 ECTS) • Electrical power grid problems and technologies in large electrical power systems (5,5 ECTS) • Electromagnetic compatibility in electrical power engineering (5,5 ECTS) • High voltage technology (6,5 ECTS) • Power electronics (5,5 ECTS) • Electric power machines (5,5 ECTS) • Student research activity (4,5 ECTS)
▶ Elective subjects	<ul style="list-style-type: none"> • Russian language / English language (2 ECTS) • Modern problems in theory of electric circuits / Optimization methods in theory of electromagnetic field and electric circuits (4 ECTS) • Laboratory-based seminar at industrial facility / Laboratory-based seminar at study laboratory (3 ECTS)

2nd SEMESTER (30 ECTS)

▶ Compulsory subjects	<ul style="list-style-type: none"> • Extra chapters of mathematics (4 ECTS) • Energy economics (6,5 ECTS) • High voltage installations and equipment insulation (4 ECTS) • Control and operation systems at electric substations (3 ECTS) • Transients in electric power systems (5,5 ECTS) • HVDC transmission and technical applications of superconductivity (5,5 ECTS) • Ultra high voltage long-distance transmissions (5,5 ECTS) • Renewable energy sources (3 ECTS) • Modern equipment in electric power supply systems (5,5 ECTS) • Student research activity (3 ECTS)
▶ Elective subjects	<ul style="list-style-type: none"> • Russian language / English language (4 ECTS) • Laboratory-based seminar at industrial facility / at study laboratory (3 ECTS)

3rd and 4th SEMESTERS (60 ECTS)

▶ Compulsory subjects	<ul style="list-style-type: none"> • Philosophy of technology (4 ECTS) • Innovation management in industry (6,5 ECTS) • Application of ERP-system SAP in electrical power engineering (5,5 ECTS) • Overhead transmission lines design and development (5,5 ECTS) • Student research activity (7 ECTS)
▶ Elective subjects	<ul style="list-style-type: none"> • Computer simulation of high-voltage equipment / Physical basics of nondestructive testing (9 ECTS)
	<ul style="list-style-type: none"> • Student research activity (8 ECTS) • Research activity, master thesis preparation (37,5 ECTS) • State examination (3 ECTS)

MSc in Technology and Engineering

Master program «Electrical Power Engineering» includes courses with the focus on both the theoretical education and practical training. Students enrolled to the program acquire the knowledge of up-to-date and innovative technologies in electric power systems and applications of modern electric equipment.

Lectures and seminars are delivered by the leading professors of SPbPU with the participation of highly professional experts in electric power industry as well as guest professors from other Russian and foreign universities.

Program goals

The goal of the program is to train highly qualified specialists capable of solving complex engineering and management tasks in electric power industry. The program graduates will acquire the fundamental knowledge and develop practical skills in the field of electric power engineering and electric technology equipment.



ADVANTAGES OF THE PROGRAM

- ▶ The curriculum comprises lectures and practical training sessions, research activities, industrial internship and teaching practice, tours to industrial and energy facilities.
- ▶ The program is intended to enrich the knowledge and develop professional competences, skills and motivation for further career development, high professional performance and good standard of living.
- ▶ The program also provides students with the opportunities to build up a strong initial network that can help in starting their careers. A good command of English allows the participation in job training work-shops at the leading electric power companies worldwide.
- ▶ The program gives foreign students the opportunity to study in international and multinational academic environment, be involved in extracurricular activities at the University and find out more about Russian culture.



PROGRAM PARTNERS

1. Brandenburg University of Technology, Germany Double Degree program;



btu Brandenburgische Technische Universität Cottbus - Senftenberg

BTU is a young and dynamic university offering multiple career opportunities. The university offers both theoretical and applied science faculties and has strong relationships with largest industrial companies such as Siemens.

2. Leibniz Institute for Plasma Science and Technology, Germany



INP Greifswald

Leibniz Institute for Plasma Science and Technology (INP Greifswald) is the largest research institute for low-temperature plasma. Its fundamental research and technical applications contributes to the development of plasma processes.

3. Technical University Kosice, Slovakia



TUKE Technical University of Kosice

Technical University in Kosice is an internationally known university and the leading higher engineering institution in Slovakia. Wide theoretical and practical base (libraries and laboratories) provides perfect conditions for study and research activities.

4. Lappeenranta University of Technology, Finland



LUT Lappeenranta University of Technology

LUT is one of the pioneers in combining engineering and business. University focuses its activities on three main trends: «green energy» technology, sustainable competitive advantages and partnership with Russia.

5. RWTH Aachen University



RWTH AACHEN UNIVERSITY

RWTH ranks high positions in international university ratings, its graduates proved to be highly educated and professionally trained in different branches of German industry. RWTH is the main employer in Aachen region.