

KEY FACTS

Admission requirements

Applicants are required to hold a Bachelor, Specialist or Master degree in related subject area. Applicants should demonstrate English language proficiency at B+ level.

Admission tests

An examination in the field of mechanics and an interview in English with a program coordinator (in person or via Skype)

Admission procedure

An applicant must complete a written online application. The application deadline is June 30. The applicants may find additional information at the official website of SPbPU: www.english.spbstu.ru

Semester and date begin

Fall semester – September, 1.

Length of program

2 years

Degrees awarded

Master of science (MSc)

CONTACT DETAILS:

St. Petersburg Polytechnic University

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POLYTECH

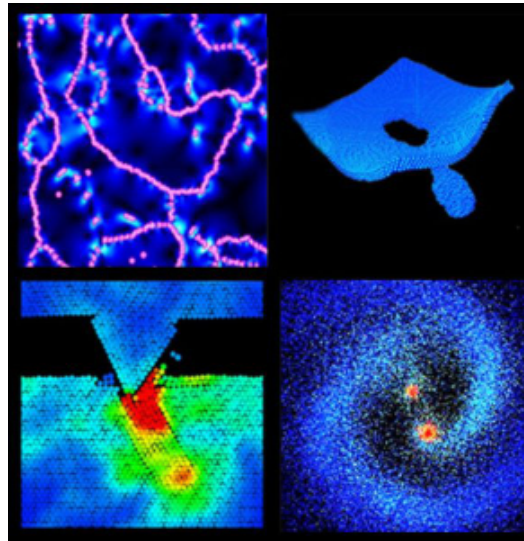
Peter the Great
St. Petersburg Polytechnic
University

NATIONAL RESEARCH UNIVERSITY
WITH A GLOBAL FOCUS

Master of science in mechanics and
mathematical modeling

MECHANICS AND MATHEMATICAL MODELING

International Master's Degree Program in English



KEY INFORMATION ABOUT THE STUDY
PROGRAM IN SAINT PETERSBURG

WWW.ENGLISH.SPBSTU.RU

REASONS TO TAKE MASTER'S DEGREE PROGRAM AT ST. PETERSBURG POLYTECHNIC UNIVERSITY

- EDUCATION AT ONE OF THE TOP RUSSIAN UNIVERSITIES (QS PHYSICS AND ASTRONOMY 201-250, THE 201-250)
- WORLD-FAMOUS PROFESSORS FROM SPbPU AND LEADING EUROPEAN UNIVERSITIES
- UNIQUE OPPORTUNITIES FOR INTERNATIONAL ACADEMIC MOBILITY: A SEMESTER ABROAD AT ONE OF THE SPbPU PARTNER UNIVERSITIES
- PARTICIPATION IN INTERNATIONAL SCIENTIFIC PROJECTS
- SUPPORT OF STUDENTS' INDIVIDUAL RESEARCH PROJECTS AND TECHNICAL IDEAS

PETER THE GREAT ST. PETERSBURG POLYTECHNIC UNIVERSITY

Founded in 1899 St. Petersburg Polytechnic University has recently gained the status of the National Research University. SPbPU is an acknowledged leader in the field of engineering education in Russia. 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 St. Petersburg Polytechnic University.

Institute of Applied Mathematics and Mechanics, SPbPU, was founded on the basis of the Faculty of Physics and Mechanics. The combination of academic learning and scientific research is a principle stated by A.I. Ioffe, founder of the Faculty. Nowadays this principle is fundamental in the Institute's educational process. The Institute's academic staff members are highly qualified specialists: professors, associate professors, scientists, including more than 30 members of Russian, International and Industrial Academies of Science.



CURRICULUM

1ST SEMESTER (30 ECTS)

- COMPUTATIONAL MECHANICS
- NONLINEAR DYNAMICS
- MATHEMATICAL METHODS IN MECHANICS
- TENSOR CALCULUS
- BIOMECHANICS
- ADVANCED PROBLEMS IN MECHANICS

2ND SEMESTER (30 ECTS)

- STATISTICAL PHYSICS
- MECHANICS OF MULTI-COMPONENT MEDIA
- IT IN MECHANICS
- MECHANICS OF THIN SHELLS
- ADVANCED MODELING IN MECHANICS
- RESEARCH SEMINAR

3RD SEMESTER (30 ECTS)

- DYNAMICS OF DISCRETE MEDIA
- IT IN MECHANICS
- PERSONAL RESEARCH PROJECT

4TH SEMESTER (30 ECTS)

- PERSONAL RESEARCH PROJECT / INDUSTRIAL INTERNSHIP
- MSc THESIS



MSc IN MECHANICS AND MATHEMATICAL MODELING

The MSc program is led by the top-ranked professors of the Institute of Mathematics and Mechanics, St. Petersburg Polytechnic University, as well as the top European technical universities. The underlying concept of MSc "Mechanics and Mathematical Modeling" is to provide the students with a balanced combination of the fundamental knowledge and practical skills in mechanics to model phenomena in physics, social sciences, biology, economy, etc. All lectures and seminars are delivered in English.

OBJECTIVE OF THE PROGRAM

The program is aimed at training highly professional scientists and engineers with the background and practical experience in theoretical mechanics, computational mechanics, IT, mathematical modeling and simulations, and distributed computing. The MSc program also develops leadership, analytical, cross-cultural and organizational skills. Upon graduation, the participants will acquire practical skills and fundamental knowledge for professional career development in international engineering or research companies.

KEY ADVANTAGES

- The graduates will have an opportunity to work in research institutes, centers and laboratories. They will be able to find employment at R&D and engineering departments of oil and gas, car-making, power and engineering, or aerospace industries among others.
- The balanced combination of the theoretical courses in mechanics and mathematics with the practical exercises, workshops and IT training sessions, simulations and distributed computing.
- Unique opportunities for international academic mobility: a semester abroad at one of SPbPU partner universities.
- An unrivalled opportunity for Russian and international students to participate together in SPbPU academic and extracurricular activities.

LENGTH OF THE PROGRAM

2 years, full-time

TOTAL WORKLOAD

120 ECTS

TEACHING METHODS

The world famous professors are invited to give short- and long-term courses. An individual training plan based on the students' scientific interests provides a wide choice of case studies, cross-cultural team work, expert workshops, study visits to enterprises and internships at research centers and companies of St. Petersburg. Special resources of SPbPU, the supercomputing center and digital fabrication laboratory "Fab Lab Polytech" will be available for students. Every student enrolled in MSc program "Mechanics and Mathematical Modeling" is offered to study a semester abroad at European universities.

PROGRAM PARTNERS

1. The University of Aberdeen is a public research-focused university in the city of Aberdeen, Scotland.
Masters's internship "Aberdeen Project"
2. The Hamburg University of Technology is one of the youngest and most successful universities in Germany.
Masters's internship "Hamburg Project"
3. Institute for Problems in Mechanical Engineering of Russian Academy of Sciences
Semester thesis
4. Leibniz University Hannover is one of the largest and oldest science and technology universities in Germany
5. Lappeenranta University of Technology was established in 1969. Nowadays, LUT's strategic focus areas are green energy and technology.
Master's short- and long-time internships



Materials Science & Technology