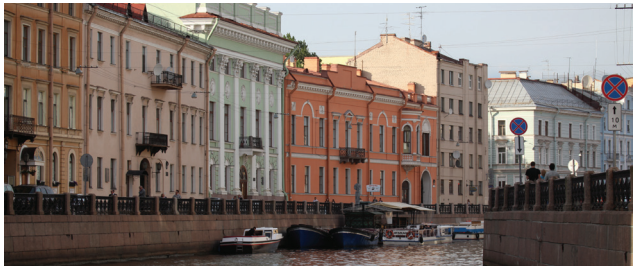
KEY FACTS

Admission requirements	Applicants are required to hold a Bachelor's, Specialist or Master's degree in related subject area. Applicants should demonstrate English language proficiency at B+ level.
Admission tests	Examination in the field of mechanics and an interview in English with a program coordinator (option - via Skype).
Admission procedure	Written on-line application. Application deadline – June, 30. Applicants may find more information available at the official website of SPbPU: www.english.spbstu.ru
Program starts	September 1 (Fall Semester)
Duration of program	2 years
Degrees awarded	Master of science (MSc)



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http://mech.spbstu.ru/

Peter the Great St. Petersburg Polytechnic University
National Research University

POLYTECH

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, Russia

www.english.spbstu.ru

Why Master's Degree Program in Engineering at Peter the Great St. Petersburg Polytechnic University?

- Education at one of the top Russian universities (QS Physics and Astronomy 201-250, THE 201-250)
- World-class professors of 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 Completion

MSc in Mechanics and Mathematical Modeling

The MSc program is led by the top-ranked professors of the Institute of Mathematics and Mechanics, Peter the Great 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 designed for training highly professional scientists and engineers with the theoretical 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 have developed practical skills and acquired the fundamental knowledge for a further professional career in international engineering and research companies.

KEY ADVANTAGES

The graduates will have an opportunity to get a challenging and well-paid job at research institutes, centres and labs. They will be able to find employment at R&D and engineering departments of oil and gas, automotive, power and engineering, or aerospace industries among others.

The balanced combination of theoretical courses in mechanics and mathematics with 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.

Duration and format

2 years

Total workload

Not less than 120 ECTS

TEACHING METHODS

World famous professors are invited to give short- and long-term courses. 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 resourses of SPbPU supercomputing center and a 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 a European universitiy.

PROGRAM PARTNERS

1. The University of Aberdeen is a public research-focused university in the city of Aberdeen, Scotland.

UNIVERSITY OF ABERDEEN *Master's internship "Aberdeen's Project"*

2. The Hamburg University of Technology is one of the youngest and most successful universities in Germany.

TUHH Technische Universität Hamburg-Harburg *Master's internship "Hamburg's Project"*

3. Institute for Problems in Mechanical Engineering of Russian Academy of Sciences.

IPME *Semester thesis*

4. Leibniz University Hannover is one of the largest and oldest science and technology universities in Germany.

Leibniz Universität Hannover

5. Lappeenranta University of Technology was established in 1969. Nowadays, LUT's strategic focus areas are green energy and technology.

LUT Lappeenranta University of Technology *Master's short- and long-term internships*

DEMSolutions FMC Technologies

Weatherford JORISIDE THE STEEL FUTURE EMPA Materials Science & Technology