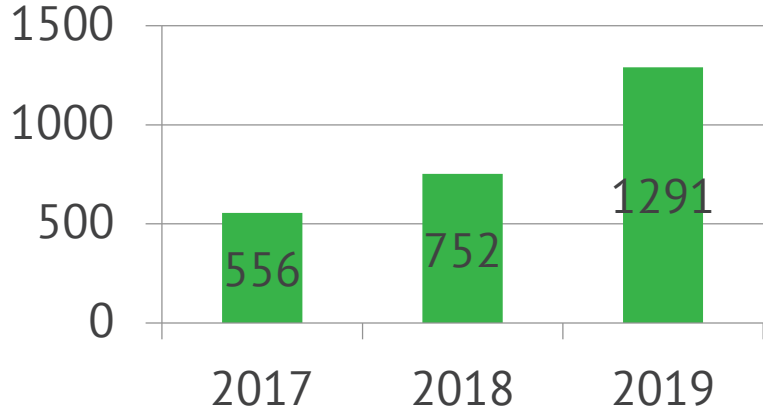


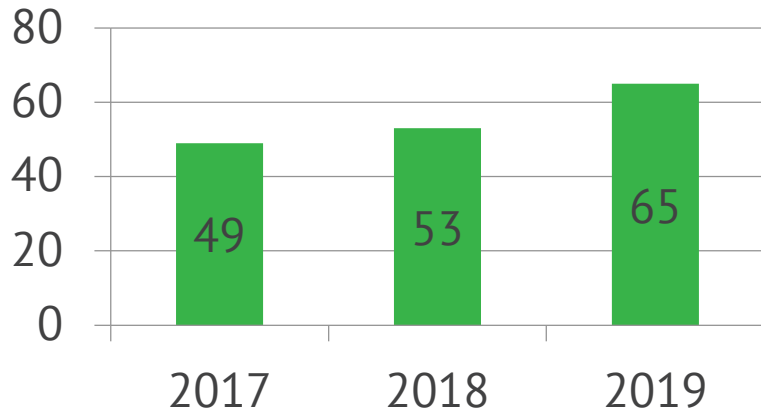


INTERNATIONAL POLYTECHNIC SUMMER & WINTER SCHOOLS

Key facts

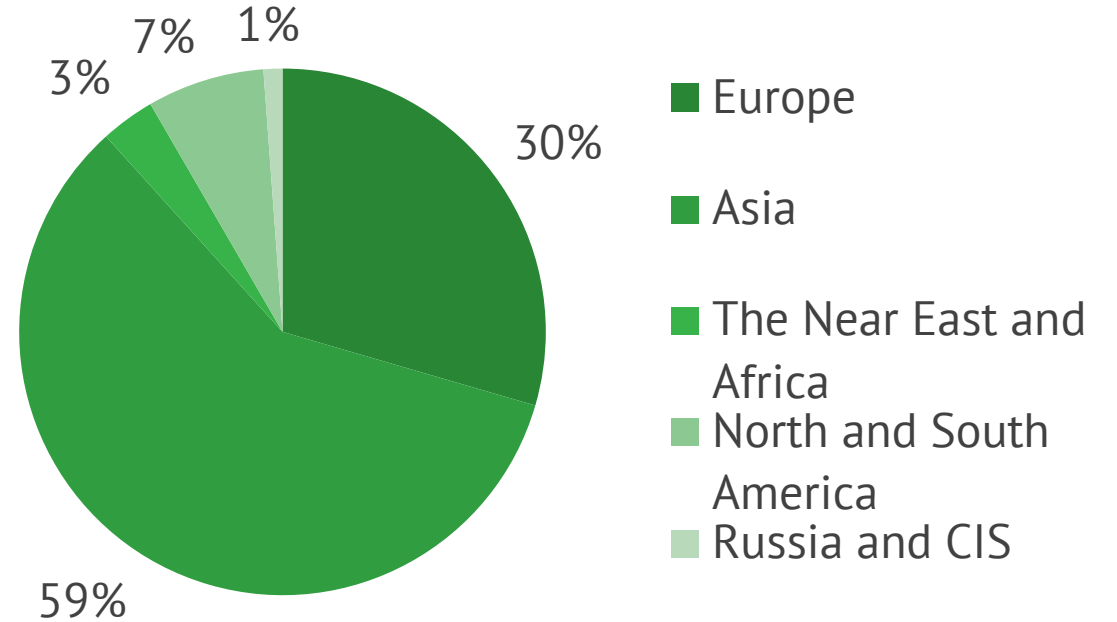


■ Number of participated students



■ Number of participated countries

Distribution by region (2019)



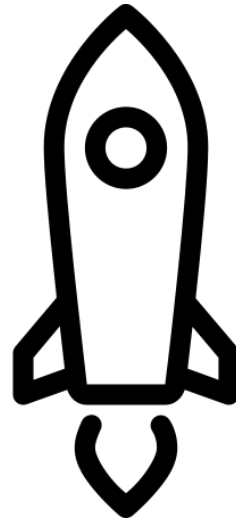
- Europe
- Asia
- The Near East and Africa
- North and South America
- Russia and CIS



Programs in the field of “Space Technology”:

Summer School:

- **Space Technologies**





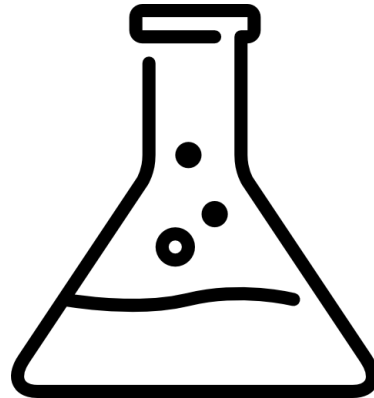
Winter School:

- **Space Technologies:
basics and theory**

Programs in the field of “Natural Sciences and Engineering”:

Summer School:

- Plasma Physics and Controlled Fusion (Polytech-SOKENDAI )
- Biomedical Engineering (Polytech – LUH )



Winter School:

- Plasma Physics and Controlled Fusion

Space Technology Natural Sciences and Engineering

“Plasma Physics and Controlled Fusion”

The primary objective of the course is to present the fundamentals of plasma physics particularly highlighting high-temperature plasma physics and its applications to controlled fusion.

” Biomedical Engineering ”

This course will cover fundamentals combined with up-to-date research topics in specific fields of Biomedical Engineering.

“Space Technologies: basics and theory” and ”Space Technologies”

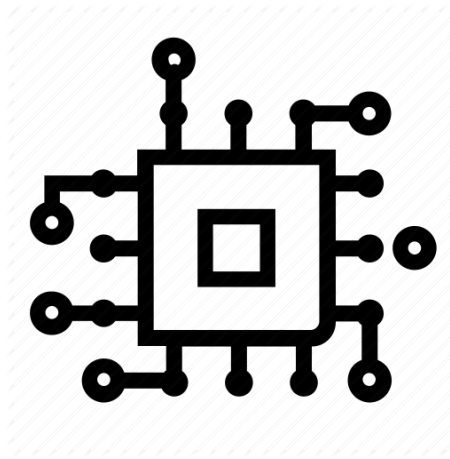
The program aims to provide advanced techniques of space engineering and understanding the core physics principles related to space exploration.



Programs in the field of “Digital Technology”:

Summer School:

- Additive Manufacturing and Joining Technologies (Polytech – Ecole Polytechnique )
 - Smart Manufacturing and Digital Future
 - Digital Construction
 - Digital Engineering
- 3D Design and Digital Fabrication




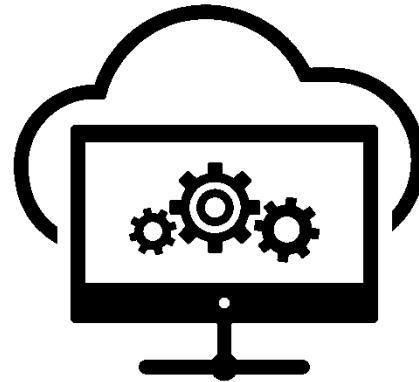
Winter School:

- 3D Concept Modeling

Programs in the field of “Information Technology”:

Summer School:

- Computer Modeling and Simulation for Engineers (Polytech – UNED )
- Modern SAP Technologies



Winter School:

- Smart Manufacturing and Digital Future
- Modern SAP Technologies
- Machine Learning: Theory and Application (St. Petersburg - Moscow)

Digital Technology

- **“3D Concept Modeling”**

This course aims at bridging the gap between ideas and their physical representation by introducing students to the basics of three-dimensional modeling, analytic drawing, mock-up making and rapid prototyping technologies.

- **“Additive Manufacturing and Joining Technologies”**

The program covers: AM and JT, powder production and characterization, metallurgical and mechanical properties, residual stresses and post-treatments, topological optimization.

- **“Smart Manufacturing and Digital Future”**

The program provides students fundamental and applied research activities in the field of intelligent robotics and control systems; practicing innovative technologies and hard- and software solutions for the problems of industrial automation and high-tech industrial control systems.

- **“Digital Construction”**

The course provides students with comprehensive introduction to the process of construction object’s design, building and operation with application of different technologies assumed by the concept of digital economy.

- **“Digital Engineering”**

The program provides students with a challenging task of creating a proof of concept prototype of a raw idea from scratch in 15 days of intense group workflow.

Information Technology

- **“Smart Manufacturing and Digital Future”**

The program provides students fundamental and applied research activities in the field of intelligent robotics and control systems; practicing innovative technologies and hard- and software solutions for the problems of industrial automation and high-tech industrial control systems.

- **“Modern SAP Technologies”**

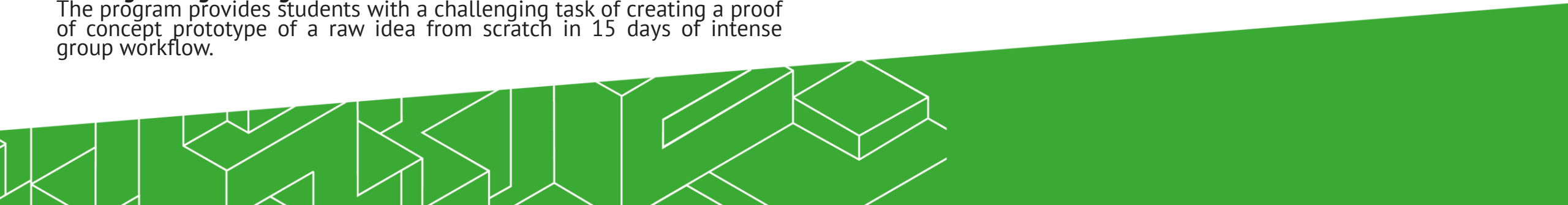
This course describes the fundamental theory of enterprise resource planning systems and shows how the basic business processes interact with the SAP ERP in different functional areas.

- **“Machine Learning: Theory and Application”**

The course introduces students to the theoretical foundations of machine learning and data science, their application in the field of process control and automation, as well as to the solution of real business problems with the help of computer vision, classification and regression algorithms.

- **“Computer Modeling and Simulation for Engineers”**

Introduction in Object-Oriented Modeling is based on two courses «Modeling and Simulation with Modelica for engineers» and «Rand Model Designer for beginners».



Programs in the field of “Civil Engineering”:

Summer School:

- **Civil Engineering**



Winter School:

- **Civil Engineering**
- **Digital Construction**



Programs in the field of “Energy Technology”:

Summer School:

- Nuclear Engineering
 - Turbomachinery
- Electrical Engineering
- Oil & Gas in Energy Industry
 - Renewable Energy
 - Energy Efficiency and Sustainable Development



Winter School:

- Nuclear Engineering
- Turbomachinery
- Electrical Engineering
- Oil & Gas in Energy Industry
- Renewable Energy
- Energy Efficiency and Sustainable Development

Civil Engineering

- **“Civil Engineering”**

The course introduces the basics of the BIM (Building Information Modeling), the concept of energy saving in the world, formation the energy efficiency in Russia and examples of its application in civil engineering and acquaints students with the principal trends of Russian architecture in a historical context.

- **“Digital Construction”**

The course provides students with comprehensive introduction to the process of construction object’s design, building and operation with application of different technologies assumed by the concept of digital economy – Building information modeling, Additive manufacturing and Building automation systems.

Energy Technology

- **“Nuclear Engineering”**

The course provides students with practical skills in modeling of different modes of nuclear power plant and deep knowledge in nuclear engineering, technologies, legislation, and innovations in Russian Federation and abroad.

- **“Turbomachinery”**

The program provides students with theoretical and practical skills in CFD modelling and deep knowledge in gas, steam and microturbines.

- **“Electrical Engineering”**

The program lectures cover general terms of power systems; basic concept of power system stability, electrical 3-phase system.

- **“Oil & Gas”**

The course provides a comprehensive overview of the oil and gas industry from upstream exploration and production to downstream refining, pumping, sales and marketing.

- **“Renewable Energy”**

The program provides an overview of technical and engineering aspects of innovative energy system design and implementation.

- **“Energy Efficiency and Sustainable Development”**

During this program students will gain essential technical skills in this area as well as study financial, marketing and managerial aspects of modern business.



Programs in the field of “Food Science”:

Summer School:

- **Molecular Gastronomy**



Programs in the field of “Business and Management”:

Summer School:

- Logistics and Supply Chain Management
- International Human Resource Management
 - Territorial Branding
- Innovative Marketing Technologies in Tourism
 - Doing Business in Russia
- International Business Analysis
- Entrepreneurship and Technology Leadership
 - International Strategic Management



Winter School:

- Doing Business in Russia

Business and Management

- **“Doing business in Russia”**

Within this winter course students will gain knowledge about Russian business, culture, identity, national history, government, customs, traditions.

- **“Logistics and Supply Chain Management”**

This course introduces the challenges of managing supply chains and how innovative technologies and management techniques are used to overcome these challenges.

- **“Territorial branding”**

The program provides students with practical introduction to such a topical phenomenon as branding of areas, cities and regions.

Food Science

- **“Molecular Gastronomy”**

During the course students are engaged with interactive lectures and training cooking classes with tasting sessions. These classes are designed to provide students with the new skills of cooking popular dishes of traditional and modern Russian cuisine.



Business and Management

- **“Innovative Marketing Technologies in Tourism”**

The course covers such topics as international tourism marketing, segmentation and targeting, consumer behavior, digital marketing and more.

- **“International Human Resource Management”**

The program covers such aspects as teamwork in the global market, managerial skills in the context of the Fourth Industrial Revolution and current trends in this area.

- **“International Business Analysis”**

The course connects skills in economics, management and international relations with the special characteristics of business dealing in Russia.

- **“Entrepreneurship and Technology Leadership”**

The program shows the way how to commercialize ideas by guiding through the processes of ideation, investigating the market, raising finance and presenting ideas.

- **“International Strategic Management”**

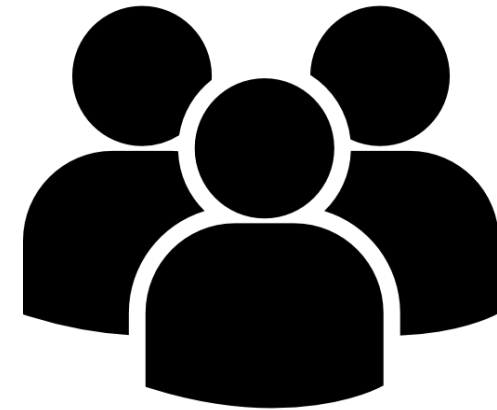
During the course students will study the main features of business environment in Russia, especially the strategies of international companies in Russia.



Programs in the field of “Humanities”:

Summer School:

- **Leadership in Communication**
 - **Sociocultural Studies**



Programs in the field of “Russian Studies”:

Summer School:

- Russian Language, Politics & Art in the White Nights (session 1)
- Russian language, Literature & Business Culture
 - Russian language for Business Communication (session 1, 2)
 - Russian language, Politics & Art (session 2)
 - Intensive Survival Russian Language for Exchange Students
 - Russian language, History & Literature
 - Preparation for TORFL test



Winter School:

- Russian Language and Culture

Humanities

- **“Leadership in communication”**

During the course the course students will know general principles of leadership and social communication, key scientific concepts about leading, social communication and interaction.

- **“Sociocultural Studies”**

This program combines Sociology, Social Anthropology, History, Social Geography and focuses on the interaction between Russian people and their environments, built and natural, and on local-global linkages.

Russian Studies

- **“Russian Language & Culture”**

The course offers intensive Russian language study combined with the English-taught courses on History, Art & Contemporary Russian life and diverse cultural activities.

- **“Russian Language, Politics & Art” (sessions 1, 2)**

This program combines intensive Russian language study and courses on Politics and History of the Russian Art covering the main stages, events and reforms of the Russian political system and providing an overview of the Russian art in a historical context.

- **“Russian language, Literature & Business Culture”**

Students will improve the key communication skills, feel confident about using the Russian language and form comprehensive understanding of the Russian culture, literature, mentality and business environment.



Russian Studies

- **“Russian language for Business Communication” (sessions 1, 2)**

During the program students will increase business-related vocabulary, improve writing skills and learn how to efficiently put those into practice during negotiations, presentations etc.

- **“Intensive Survival Russian Language for Exchange Students”**

This intensive course focuses on speaking, so that by the end of the summer school the students could communicate with the native speakers and understand them better.

- **“Russian language, History & Literature”**

Intensive language study is combined with courses providing an overview of the main historical stages of country’s development with the analysis of the trends and problems emphasized in the Russian Literature.

- **“Preparation for TORFL test”**

The program involves tutorship of the Russian language professors, analysis of the sample tests, explanation of the important requirements and assessment scales.





Contacts

International Education Office
Department of International Educational Programs

- summerschool@spbstu.ru
- +7 (812) 534-25-31
- +7 (812) 534-13-65
- office 227, 28, Grazhdanskiy prospect, 195220, St. Petersburg, Russia