

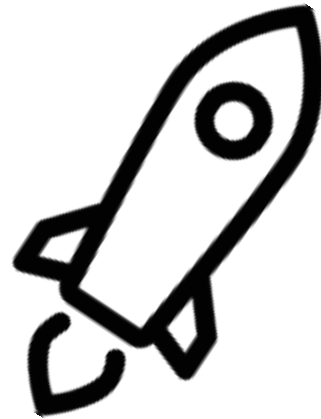


Space Technology

Programs in the field of “Space Technology”

Winter School:

- Space Technologies:
basics and theory



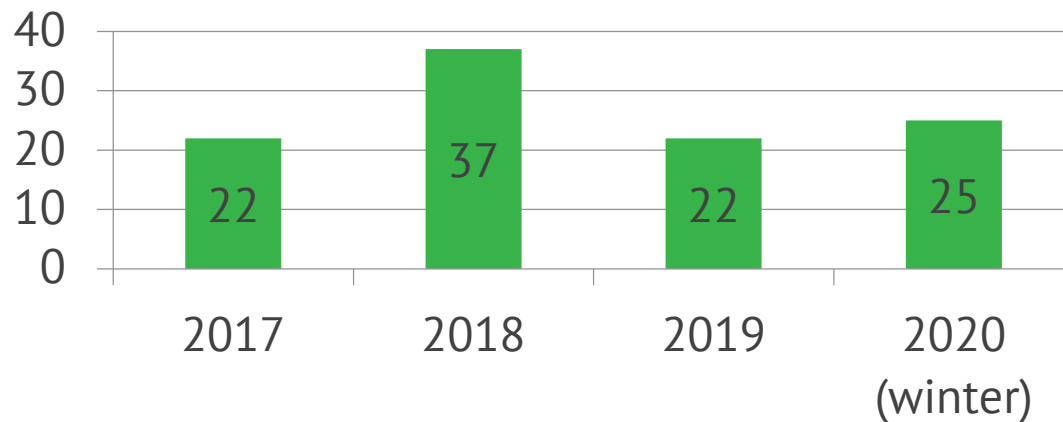
Summer School:

- Space Technologies

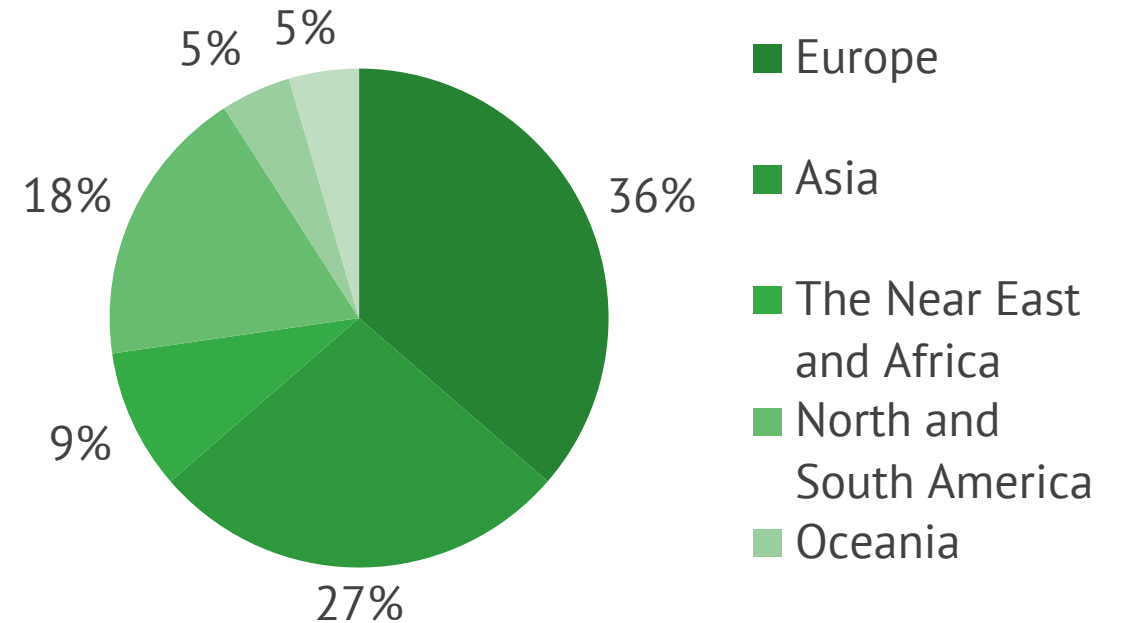


Key facts

A number of students per year



A distribution of students by region



Winter School “Space Technologies: basics and theory”

JANUARY 27 – FEBRUARY 7, 2020



Space Technologies: basics and theory

The Winter School course "**Space Technologies: basics and theory**" is suitable for senior undergraduate and graduate students as the first space technology course or an add-on course.

The program aims to provide advanced techniques of space engineering and understanding the core physics principles related to space exploration. Space industry problems are also considered during the program in addition to technology topics.

The theoretical courses cover astrophysics, space technology and physics. Students will train their practical skills during an interactive business simulation workshop.

The speakers are industry experts and scientists experienced in the field of space technology.

6-hours intensive course of Survival Russian is included into the syllabus.



Space Technologies: basics and theory

Program dates:

Arrival: Jan 25 – 26, 2020

Classes: Jan 27 – Feb 07, 2020

Departure: Feb 08 – 09, 2020

Duration: 2 weeks

ECTS credits: 4.0

Participation fee:

- **Early bird registration fee:** 510 euro
- **Regular registration fee:** 540 euro

Participation fee includes: tuition fee, study materials, visits to companies and cultural program.



Space Technologies: basics and theory

Deadline for registration

Early bird deadline: October 28, 2019

Regular deadline

- for non-EU citizens: November 18, 2019
- for EU, Iranian and Indian citizens, citizens of visa-free countries: December 16, 2019

Request the application form and submit the application package via e-mail: summerschool@spbstu.ru



The cultural program includes

- Excursion to the Hermitage, one of the world's largest and oldest museums of fine art;
- Pub Quiz;
- Excursion to the Kunstkamera museum, a cabinet of curiosity;
- Field trip to the "Baltika" Brewery/"Coca-Cola" factory where students can learn about the construction and logistic peculiarities of the plant;
- Full-day Wintry Event with sleigh riding and skating (optional for extra price).



Course description

Theoretical module:

- Cosmic rays: from physics to space technologies;
- Gravitational waves, gamma-ray bursts and neutrinos from collapsing stars;
- Experimental cosmology. From stars to the boundaries of Universe;
- The Friedmann Universe and Modern Cosmology;
- Tools of Radio Astronomy.

Satellite navigation systems and signal processing:

- Practice on satellite antenna signal processing;
- Satellite Communications;
- Global Navigation Satellite Systems;
- Processing GPS Signals to Determine Receiver Position and Time (practice on MATLAB);
- Frequency standards.

Satellite design:

- Nanosatellites Engineering (Electrical, mechanical and computer engineering aspects of nanosatellite system engineering);
- Projects consultations;
- Nanosatellite mission design;
- Motion in Space: Electric Propulsion;
- Substance in Space: Spectral Analysis.

Other developments in space industry:

- International spectrum management system for space applications;
- SPbPU main projects in space technologies;
- New materials for electronic production;
- Modern sensor systems based on nanostructures.



Course description

Program partners:

- The Institute of Applied Astronomy of the Russian Academy of Sciences;
- Pulkovo Observatory;
- Radio astronomical observatory "Svetloe";
- Ioffe Institute;
- Astronomicon.

Professors and lecturers:

- Aleksander Ivanchic, corresponding member of RAS;
- Aleksander Blinov, professor of Space Investigation department, SPbPU;
- Oleg Tsybin, professor of IPNT, SPbPU;
- Constantin Korikov, associate professor of IPNT, SPbPU;
- Denis Malygin, head of Astronomicon;
- Vladimir Mostepanenko, Pulkovo Observatory.



Summer School “Space Technologies”

JULY 13 – 24, 2020



Space Technologies

The Summer School course "Space Technologies" is suitable for senior undergraduate and graduate students as the first space technology course or an add-on course.

The program aims to provide advanced techniques of space engineering and understanding the core physics principles related to space exploration. Space industry problems are also considered during the program in addition to technology topics.

The theoretical courses cover astrophysics, space technology and physics. Students will train their practical skills during a hackathon (a creative coding marathon) and an interactive business simulation workshop.

The speakers are industry experts and scientists experienced in the field of space technology.

6-hours intensive course of Survival Russian is also included into the syllabus.



Space Technologies

Program dates:

Arrival: Jul 13 – 14, 2019

Classes: Jul 15 – 26, 2019

Departure: Jul 27 – 28, 2019

Duration: 2 weeks

ECTS credits: 4.0

Participation fee:

- **Early bird registration fee:** 510 euro
 - **Regular registration fee:** 540 euro
- Participation fee includes tuition fee, study materials, visits to companies and cultural program.



Space Technologies

Deadline for registration:

- Early bird deadline: March 25, 2019

Regular deadline:

- for non-EU citizens: April 22, 2019
- for EU and visa-free countries' citizens: June 17, 2019 (applicable for Iranian and Indian citizens as well)

Request the application form and submit the application package via e-mail: summerschool@spbstu.ru



The cultural program includes:

- Boat city tour for students to get acquainted with the beauty of the city.
- Excursion to the Hermitage, one of the world's largest and oldest museums of fine art.
- Pub Quiz in the city center of St. Petersburg.
- Field trip to radio astronomical observatory "Svetloe" with practice on Radiotelescope.
- Visit to the "Baltika" Brewery/"Coca-Cola" factory where students can learn about the construction and logistic peculiarities of the plant.
- Excursion to Peterhof palace-ensemble with picturesque gardens, a countless number of fountains and giant golden statues.
- Picnic at the seashore of the Gulf of Finland where students can enjoy Russian style barbecue (optional, for extra price).
- Excursion to Pushkin, former tzar summer residence famous for its palace and park ensemble. Students will visit the outstanding Catherine Palace with glorious Amber room (optional, for extra price).



Course description

Program partners:

- The Institute of Applied Astronomy of the Russian Academy of Sciences;
- Pulkovo Observatory;
- Radio astronomical observatory "Svetloe";
- Ioffe Institute;
- Astronomicon.



Professors and lecturers:

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- Oleg Tsybin, professor of IPNT, SPbPU;
- Vitaly Egorov, Dauria Aerospace;
- Denis Malygin, head of Astronomicon;
- Vladimir Mostepanenko, Pulkovo Observatory.

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