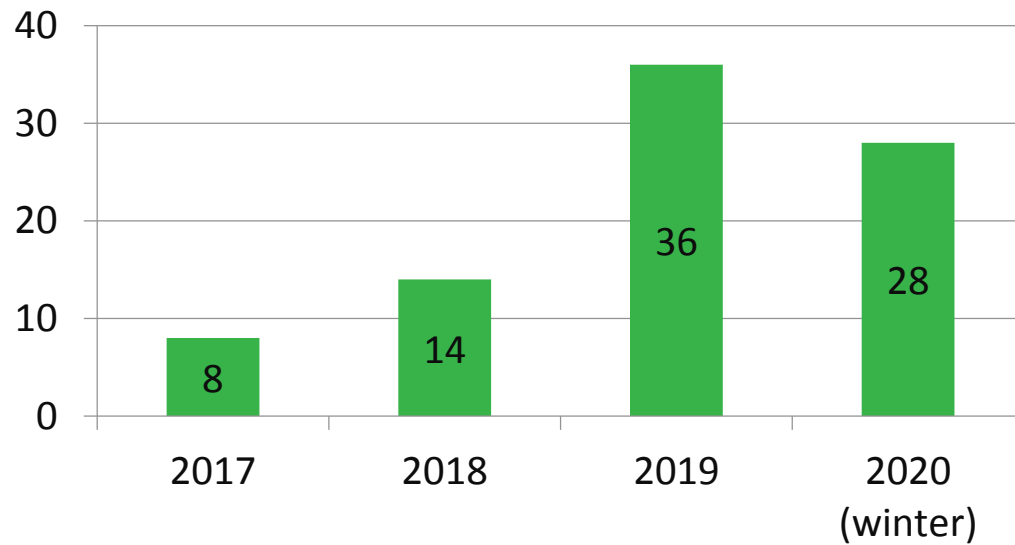




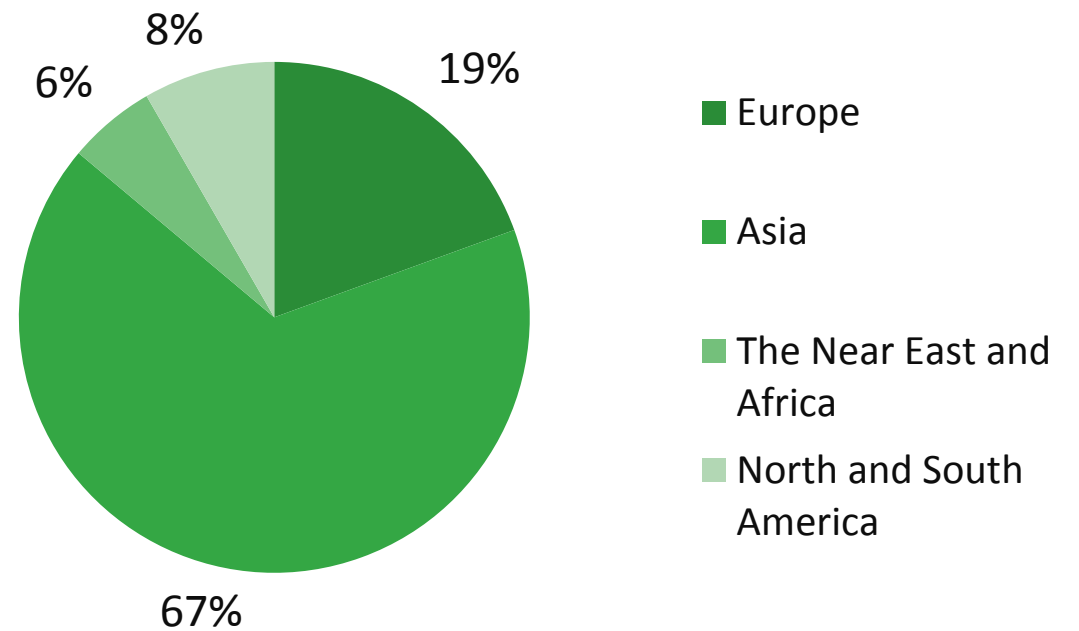
# Civil Engineering

# Key facts

A number of students per year



Distribution by region



# Programs in the field of “Civil Engineering”

Winter School

- **Civil Engineering**



Summer School

- **Civil Engineering**



# Winter School in the field of “Civil Engineering”

JANUARY 27 – FEBRUARY 7, 2020



# Civil Engineering

The outstanding winter school “Civil Engineering” is entirely carried out in English and is cut out for those who are keen on BIM technologies and energy-efficient buildings. Staying in our charming city with its marvelous architecture would be of a great value and contribution to this course.

## Professors and lecturers:

- Aleksandr Vysotskiy, CEO of Vysotskiy consulting, expert in BIM;
- Tatiana Khvatova, Dr of Science;
- Daria Zaborova, leading lecturer of SPbPU.

## Partners:

- Autodesk Authorized Training Center;
- Autodesk Expert Elite.



# Building information modeling

The course introduces the basics of the BIM (Building Information Modeling), its conception, available software and ways to use this technology in real work process.

This course discusses how BIM provides contractors with the benefit of improved visualization of a construction project through the use of a 3D virtual model, establish a base of knowledge of BIM terminology and look at the benefits of BIM and case studies showing implementation before encouraging participants to study how they could implement BIM. Students do not only acquire a profound professional and methodical education but also the communication skills and cross-cultural experience necessary for future international management posts. The BIM program contains not only general BIM conception, but also its problems, solutions, ways to use and comparison of main software available today, and real experience of using Autodesk Revit – world-leading BIM platform, allowing create and manage projects faster and more economically;

The course is based on a real experience of BIM implementation in leading Russian's project and construction companies, BIM software teaching.

The lectures cover the essential features BIM modeling and leading software.



## Energy efficiency building

The course introduces the concept of energy saving in the world, formation the energy efficiency in Russia and examples of its application in civil engineering. At the beginning students are given brief introduction to the Energy consumption in the residential sector, thermal loss of buildings, the concept of heat and moisture transfer in enclosing structures, types and classification of environmentally friendly building materials.

Students will know how to determine the energy efficiency classes of buildings, basic indicators of energy consumption, they will consider economical and environmental aspects in the field of energy saving, the major green building rating systems LEED and BREAM.

The course is held in the form of workshop, where students will consider real projects of new and existing buildings, different ways of improving the energy efficiency of the building, using practical calculations and BIM (Building Information Modeling) technology.



## Russian civilization and architecture

The main purpose of the course is to acquaint students with the principal trends of Russian architecture in a historical context. The course introduces the history of building of St. Petersburg, the main architectural styles, outstanding architectural objects and their architects. The course introduced the basic geological, hydrological and geo-political terms and preconditions for the construction of St. Petersburg, the main building stages - the city basis, the first buildings, building periods. Supposed to study the most famous architects who participated in the construction of the city, the classification of architectural styles of St. Petersburg; the most outstanding architectural monuments - palaces, cathedrals, churches, bridges, the areas, museums. The course also includes a discussion of contemporary issues of historic buildings. Along with the theoretical classes student had a long open-air class during which they walked with the professor around the city and studied the architectural features of the buildings of Saint Petersburg.

## Survival Russian

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





# 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.

The course includes practical hands-on exercises with using modern software to design, test and implement corresponding project and technological solutions in the area of industrial and civil engineering.



## **BIM Tools and Technologies**

The course introduces students to the principles of effective work in BIM-environment. Students will learn the benefits of Building information modeling through the development of 3D virtual building model with unique architecture, structural frame and elaborate engineering systems. Moreover, the course provides different ways of improving building energy efficiency, using practical energy calculations and BIM technology.

The main feature of the course is variety of software and digital construction technologies that students may get acquainted with. The program provides you with working experience in Autodesk Revit – world-leading BIM platform, that allows fast and economically-efficient creation and management of projects. In addition, it contains learning of project navigation and collision search in NavisWorks, 3D printing method of building fabrication, and virtual tour via augmented reality smart glasses.

## **Digital project management**

The course discusses construction project planning, network analysis and management by means of MS Project. The Project Management program acquaints students with methods of effective work organization, types of calendar plans, network models, accurate resource planning, and principles of project optimization and control. Well-targeted project management as well as BIM application in construction helps to reduce design period significantly. During the classes, students develop a calendar plan based on the BIM model of the building with creation of a work structure and resource assignment in order to learn how to achieve the excellent project organization.



# Digital Construction

## Survival Russian

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

## Professors and lecturers

- Alexander Vysotsky, general director of LLC “Vysotskiy Consulting”;
- Daria Zaborova, assistant professor, department “Hydraulics and strength”;
- Daria Sprengel, specialist on construction, IBCON engineering company.

## Program partners

- Vysotsky consulting, IBCON.



# Digital Construction

**Programs dates:**

**Arrival:** Jan 25 – 26, 2020

**Classes:** Jan 27 – Feb 07, 2020

**Departure:** Feb 08 – 09, 2020

**Duration:** 2 weeks

**ECTS credits:** 5.0

**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.

**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

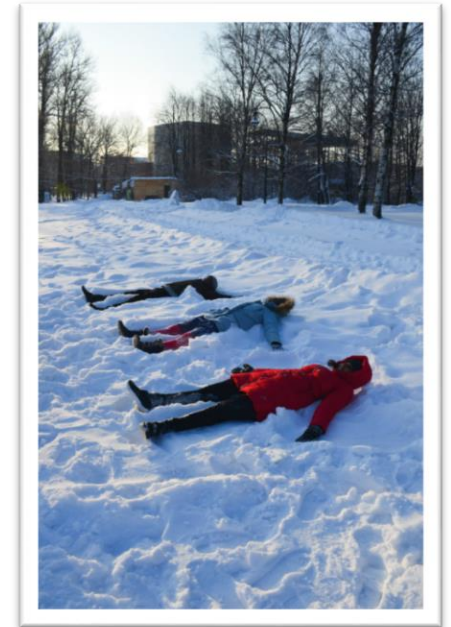
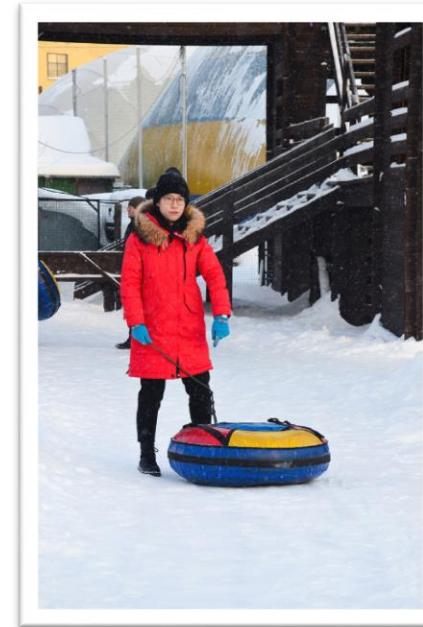
Request the application form and submit the application package via e-mail: [summerschool@spbstu.ru](mailto:summerschool@spbstu.ru)



# Civil Engineering and Digital Construction

## 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).



# Summer School in the field of “Civil Engineering”

AUGUST 5 – 16, 2020





# Civil Engineering

The outstanding summer school “Civil Engineering” is entirely carried out in English and is cut out for those who are keen on architecture and design solutions. Staying in our charming city with its marvellous architecture would be of a great value and contribution to this course.

## Professors and lecturers:

- Aleksandr Vysotskiy, CEO of Vysotskiy consulting, expert in BIM;
- Tatiana Khvatova, Dr of Science;
- Daria Zaborova, leading lecturer of SPbPU

## Partners:

- Autodesk Authorized Training Center;
- Autodesk Expert Elite;
- Vysotskiy Consulting



## Building information modeling

The course introduces the basics of the BIM (Building Information Modeling), its conception, available software and ways to use this technology in real work process.

This course discusses how BIM provides contractors with the benefit of improved visualization of a construction project through the use of a 3D virtual model, establish a base of knowledge of BIM terminology and look at the benefits of BIM and case studies showing implementation before encouraging participants to study how they could implement BIM. Students do not only acquire a profound professional and methodical education but also the communication skills and cross-cultural experience necessary for future international management posts. The BIM program contains not only general BIM conception, but also its problems, solutions, ways to use and comparison of main software available today, and real experience of using Autodesk Revit – world-leading BIM platform, allowing create and manage projects faster and more economically;

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## **Energy efficiency building**

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## **Survival Russian**

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



# Civil Engineering

**Program dates:**

**Arrival:** Aug 03 – 04, 2019

**Classes:** Aug 05 – 16, 2019

**Departure:** Aug 17 – 18, 2019

**Duration:** 2 weeks

**ECTS credits:** 5.0

**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.

**Deadline for registration:**

**Early bird deadline:** April 15, 2019

**Regular deadline:**

- for non-EU citizens: May 13, 2019
- for EU and visa-free countries' citizens: July 01, 2019 (applicable for Iranian and Indian citizens as well)

Request the application form and submit the application package via e-mail: [summerschool@spbstu.ru](mailto:summerschool@spbstu.ru)



# Civil Engineering

## 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.
- 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).



## Contacts

**International Education Office**  
**Department of International Educational Programs**

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