

International Polytechnic Summer School "Computer Modeling and Simulation for Engineers"

Peter the Great St. Petersburg Polytechnic University

Degree or qualification is awarded: **Internationally Recognized SPbPU Certificate with list of completed courses, grades and ECTS**

Language of study: **English**

Mode of study: **full-time, distance learning**

Duration: **2 weeks**

Availability of free education: **no**

Price: **270-510 Euro**

Programme webpage at the university website:

https://summerschool.spbstu.ru/programs/computer_modeling_and_simulation_for_engineers/

Programme curator: **Department of International Educational Programs**

Tel.: **+7 (812) 534-25-31**

E-mail: summerschool@spbstu.ru

August 2 - August 13, 2021

The course curriculum includes:

- - Introduction in Modelica (Dymola, OpenModelica);
- - Introduction in MVL (MwStudium, Rand Model Designer).

Introduction in Object-Oriented Modeling is based on two courses «Modeling and Simulation with Modelica for engineers» (prof. Alfonso Urguia, Spain) and «Rand Model Designer for beginners» (prof. Yuri Senichenkov, Russia) developed for InMotion Project. Modelica and Model Vision Language are object-oriented, equation based modeling languages for modeling and simulation complex dynamical systems. Models of complex dynamical systems are hierarchical, component models with event-driven behavior. Both courses include lectures, practical work and independent work with tools for visual modeling.

Curriculum

- - Isolated models based on differential and difference equation / lectures;
- - Simple dynamical systems / practical workshop;
- - Hybrid system and State Machines / lectures;
- - Event-driven behavior: bouncing ball, ideal diode / practical workshop;
- - Classes, objects, inheritance, packages and libraries / lectures;
- - Components with inputs/outputs («Causal» modeling) / lectures;
- - Control systems: PID regulator / practical workshop;
- - Components with contacts/flows («Physical» Modeling) / lectures;
- - Electrical and Hydraulic component systems / practical workshop.

Duration: 2 weeks

Participation fee:

Online format: 270 eur

On-site format: 510 eur

Participation fee includes tuition fee, study materials, field trips (for on-site format) and cultural program.

Cultural program

Socio-cultural program of extracurricular activities and networking events are included*:

Online format:

- - Online Pub Quiz;
- - Online Interactive Tour to SPbPU Museum;
- - Online broadcasting of excursion to the Hermitage museum;

On-site format:

- - 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;
- - 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);
- - Excursion to Peterhof palace-ensemble with picturesque gardens, a countless number of fountains and giant golden statues (optional, for extra price)

*All of the listed above activities are planned to take place but in case any of those will have to be cancelled, an alternative event will be offered to participants.

Deadline for registration

Online format: July 19, 2021

On-site format:

- for EU- or visa-free countries nationals: July 05, 2021
- for non-EU nationals: May 24, 2021

Specializations within this programme