



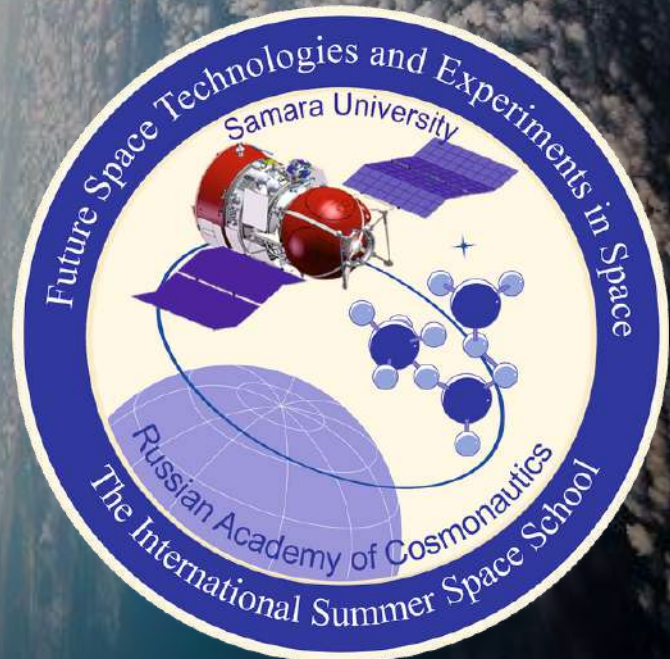
ALAR
Training Center



SUMMER SCHOOL

INTL SUMMER SPACE SCHOOL

**JUNE 20 – JULY 01
2022**

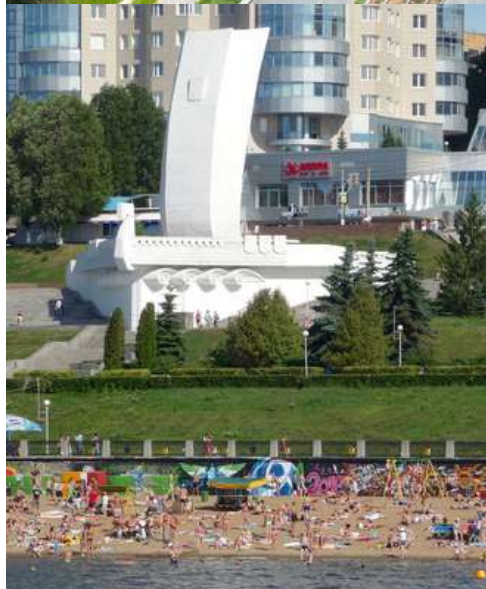


**DEDICATED TO THE 65-TH ANNIVERSARY OF THE
THE FIRST ARTIFICIAL EARTH'S SATELLITE
LAUNCH & THE 115-TH BIRTH'S ANNIVERSARY OF
S.P. KOROLEV**

ECTS credits: 5.0



**SAMARA
UNIVERSITY**



BRIEF DESCRIPTION

Attending the School participants have an opportunity to share their challenging ideas of new space missions with Russians and people from other countries and establish inter-university cooperation. Discussing the results of realized space projects, visiting lectures and seminars given by leading scientists and experts in the field of space technologies and space experiments. According to the concept of competitive activity participants included in one of the teams working on nano-satellite projects with regard to their interests and background.

AIMS

The overall aims of the School is to involve young people into the development of micro/nanosatellites and implementation of experiments in space, to provide new fundamental knowledge and skills in applied technologies.

Costs : Only for students **selected** to the 'Full time education stage'

1. Registration fee, migration support, 62h Russian survival virtual course with certificate of conclusion: US\$400 - until April 25th 2022
2. Studies, 5 ECTS Certificate, accommodation in university hostel, 3 meals a day, transfer from the airport (on the day of arrival) : US\$500 - on arrival

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Distant Education stage

Registration : Deadline - March 25th 2022

Entrance requirements: This stage is for free

- . Intermediate English B1 or higher
- . At least second year of university studies of technical directions or specialties

Duration: April 04 - April 17 , on-line at homeland

Applicants should study lecture materials and do assignments and tests on-line. During distance stage, participants will gain basic knowledge in the field of space flight mechanics and dynamics. According to the results of assignments and tests, participants for the full-time stage (in Samara) will be selected.

Full-time Education stage

Duration: June 20 - July 01 on-campus in Samara

Entrance requirements:

- . To approve the studies of 'Distant Education Stage' and obtain the necessary score to be selected for next stage

Main goals and topics of the School program:

- . Projects of scientific-educational nano satellites;
- . Advanced technologies (methods and devices) for research of space environment and remote sensing;
- . Attitude control technologies for nano satellites;
- . Advanced space navigation technologies;
- . Design principles of onboard electronic systems (sensors, onboard computers, communication systems, power supply systems) for nanosatellites;

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- . Relative motion in space (formation flight);
- . Piggyback launch of nano satellites;
- . Space Physics;
- . State-of-art technologies used in the design of nano satellite's (Solid Works / Altium Designer).

Courses:

- . Introduction to the nano satellite design
- . Design of electronic subsystems for nano satellites
- . The space environment and its impact on a spacecraft
- . MatLab for mission analysis
- . Mission analysis: space flight mechanics
- . Features of the nano satellite dynamics in LEO
- . The problems of nano satellite cluster launching and the deployers for nano satellites separation
- . Space navigation
- . Methods and algorithms for nano satellite attitude determination & control
- . Tests of nano satellites; facilities, types and programs of tests
- . Aviation engines history center / Nano satellite testing center
- . Introduction to the software development for nano satellite micro controllers
- . Operating of nano satellites and the ground operating center
- . Software development for micro controllers
- . Innovation education programs in space technologies of Samara University