

## Rules of application and accommodation conditions

Application for participation of students in the Summer School should be submitted by Universities where the students study. For this purpose, the University signs an **Agreement on Cooperation with the Institute of Mechanics of Lomonosov MSU**. Preparation of such Agreement usually takes 2 months.

**Deadline** for application is April, 30.

### Costs for participation in the School program for one person:

Tuition fee: 1000 USD (attendance of lectures, experiments, demonstrations, practical trainings);

Excursion costs: 300 USD (basic cultural program).

### Accommodation conditions and costs:

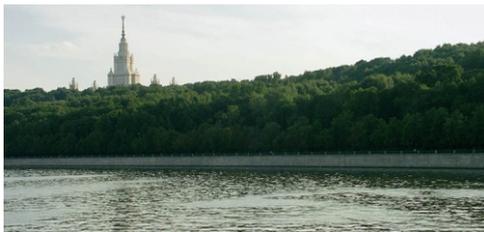
Students of the Summer School live in the dormitory in the famous Main building of LMSU (Moscow, Vorobievi gori, 1). This 240 m high edifice is one of the well-known symbols of Moscow. The accommodation price is about 250 USD per month. In the same building, there are several dining rooms (with usual lunch price about 5-10 USD) and multiple shops.

It takes about 10 minutes work to get to the Institute of Mechanics from the Main building of LMSU.

The LMSU campus is located not far from the downtown. It takes about 15 minutes to get from the "Universitet" subway station to the very center of Moscow.

### Weather in Moscow:

Usually the Moscow weather in July is very comfortable. Average daily temperature is about +25°C. Humidity is about 71%. Length of daylight is about 17 hours. The time difference with Taiwan is -4 hours.



<http://summerschool.imec.msu.ru>

## Contact information



### Institute of Mechanics of Lomonosov MSU

119192, Russia, Moscow,  
Michurinskiy prosp., 1

Tel./fax: +7 495 9395478

For detailed information and for application please write to any of the following organizers:



Senior Researcher  
Dr. **Liubov Klimina**  
klimina@imec.msu.ru



Leading Researcher  
Dr. **Yury Selyutskiy**  
seliutski@imec.msu.ru

Research and education process in our Institute of Mechanics is fascinating and challenging! We hope you could come to see it by yourself, to take part in many entertainment scientific experiments and to plunge into friendly atmosphere of Moscow!

We would be glad to share with you our scientific experience and to show to you the cheerful Moscow city which beauty is beyond expression!



**Welcome to join us next summer!**

<http://summerschool.imec.msu.ru>



Institute of Mechanics  
of Lomonosov Moscow State University



## 9th INTERNATIONAL SUMMER SCHOOL



## "Computer Technologies in Engineering Mechanical Problems"



The International Summer School "Computer Technologies in Engineering Mechanical Problems" is a program designed for University students studying different branches of mechanics and engineering. Participants are introduced to the unique academic and cultural environment of Lomonosov Moscow State University, Russia.

The Summer School is a comprehensive package involving academic tuition, and a wide range of cultural activities and excursions.

The Summer School is annually organized in the Institute of Mechanics of Lomonosov MSU which offers the unique base for theoretical and experimental scientific research and education. The first School was held in 2007.

<http://summerschool.imec.msu.ru>

## Academic program

lectures

experiments

practice

The Summer School "**Computer Technologies of Engineering Mechanical Problems**" is a program designed for University students studying different branches of mechanics and engineering.

Theoretical and experimental program of the School is held in laboratories of the **Institute of Mechanics of Lomonosov MSU**. Leading professors in different spheres of modern engineering science provide lectures and practical lessons and demonstrate corresponding experiments on unique facilities of the Institute.



Topics of the Summer School include:

- robotics, control and navigation;
- subsonic and super sonic aerodynamics;
- durability and creep at high temperature;
- hydrodynamics: testing of wave engines;
- optical visualization of deformations;
- special effects of heat and mass transfer;
- etc.

High level specialists introduce students into basic principles of construction, control and exploitation of varied robotic and mechatronic systems such as:

- wheeled autonomous mobile robots;
- flying autonomous mobile robots;
- passive and active exoskeletons;
- small-scale wind power systems;
- wave engine pilot boat;
- bionic robots and devices.



Content of lectures include basic elements of theory in general branches of mechanics as well as application of such theory to **modern engineering problems**. New approaches to solving of actual practical tasks are introduced and illustrated.

Lectures and presentations of the School are usually provided in English, most of them are accompanied with translation into Chinese.



Most lectures are made by MSU professors. Usually several invited professors from other leading Moscow Universities and research Institutes come to present the state of art in particular scientific fields they are famous for.

Russian language courses are organized in the context of the School. At these courses students learn elements of the Russian language related with professional orientation. This part of the program is optional.



Lomonosov Moscow State University,  
Institute of Mechanics



Moscow State University is a major traditional educational center in Russia. It was established in 1755. Now it offers training and scientific research in almost all branches of modern science and humanities.



40 departments, 15 research institutes  
6 local branches in Russia and abroad,  
4 museums, the Science Park,  
2 large botanical gardens,  
1 km<sup>2</sup> floor area of main campus,  
1000 buildings and structures,  
2 space satellites launched.  
11 Nobel Prize winners,  
more than 40000 students,  
2500 full professors, 6000 PhDs,  
4000 international students annually.



The Institute of Mechanics founded in 1959 is a structural department of the Lomonosov Moscow State University.



Institute of Mechanics is one of the leading research centers in modern mechanics and **unique experimental base in the system of the higher education of Russia**. It is a scientific organization that unites different laboratories (primarily, in aerospace, mechatronics, control, strength, and biomechanics), facilities for experimental work and for training students. Directions of investigations of the Institute include:



Gas dynamics and heat-mass exchange,  
Mobile robots and mechatronic systems,  
Elastoplastic continua and constructions,  
Multicomponent and multiphase continua,  
Dynamics of rigid body in resisting medium,  
Qualitative analysis, estimation and control,  
Data-processing technologies in mechanics,  
Mechanics of natural processes, Biomechanics,  
Creep, long-term and high-temperature strength,  
Dynamic impacts upon continua and constructions,  
Media interacting with electric and magnetic fields,



Hydrodynamics of high-speed and unsteady processes in varied liquids,  
Studing of motion of continua with physical and chemical transformations.

Institute of Mechanics is strongly involved in educational process. Researchers hold lectures and workshops, and carry out scientific supervision. Students from different departments of LMSU and from other Russian and foreign universities perform practical works in various areas of mechanics using facilities of our Institute.

Scientific staff of the Institute comprises 6 Members and 2 Corresponding Members of RAS, 156 researchers with PhD, including professors and associate professors, over 30 members of Russian Academy of Natural Sciences and other scientific academies, including foreign national academies.

## Cultural program

events

sightseeing

activities

Students participating in Summer school not only are familiarized with theoretical and practical aspects of scientific problems, but also acquire invaluable experience of international communication and get acquainted with Russian culture and history.

Wide and diverse cultural program is organized every year. It includes several basic large excursions as well as numerous sightseeing tours, common sport-recreational activities and opportunities to familiarize with Russian traditional ballet, famous Russian circus, unique art galleries, reach and fascinating historical heritage of Moscow museums and palaces.

### Basic cultural program:

• **Moscow City Tour** including Novodevichy Monastery, Sadovoe Ring, Zaryadye, Vassilievski spusk.



• **Kremlin** - the famous Moscow castle



• **Red Square** called "the heart of Russia"

• **Holy Trinity-St. Sergius Lavra** - the most famous Russian Monastery situated in Sergiev Posad, a historical town near Moscow



• **Gagarin Cosmonaut Training Center** - the place where cosmonauts are trained before space flights



Sightseeing tours program usually include:

- Christ the Saviour Cathedral
- Boat trip along Moskva River
- Victory Park, panorama of Borodino battle,
- Square of Europe and blue glass bridge,
- Historical and landscape parks of Moscow,
- Arbat street and Traditional art market,
- All-Russian exhibition center with fountains,
- Museums, theaters, ballet, circus,



### Sport-relax program:

- biking on Vorobiev hills,
- ice and roller skating,
- swimming in the river,
- barbeque in the park,
- varied sport games.

During the School students overcome interlanguage barriers find many new friends from Russia and other countries.

