

Summer/Winter School on Heritage Science

Saint Petersburg Electrotechnical University "LETI"

Degree or qualification is awarded: **standard certificate**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 weeks**

Availability of free education: **yes**

Price: **30 000 rubles**

Programme webpage at the university website: <https://etu.ru/en/study/winter-and-summer-schools/heritage-science>

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"Heritage Science" is interdisciplinary educational course, which aims to help students with understanding of "how" and "why" the most actual tasks of Cultural Heritage preservation can be resolved by means of combined use of engineering and humanitarian knowledge. The aim of the school "Heritage Science" is to provide students with information about the current achievements in the use of physical, chemical, laser and optoelectronic techniques in Cultural Heritage preservation. Heritage Science is a new, but rapidly growing field of technical and natural sciences which deals with analysis, restoration and documentation of works of art.

Key points

- Heritage Science is one of the most important modern disciplines in preparing the qualified experts in the field of Cultural Heritage preservation;
- The course "Heritage Science" provides unique information about role of modern physical, chemical, laser and optoelectronic techniques in Cultural Heritage preservation;
- ETU "LETI" and our partners have considerable experience in this field, as well as specialized facilities;
- Participation in the school is a good option for those who want to upgrade professional knowledge through foreign experience;
- The students get 2 weeks of various practice, including access to University's and our partners' research laboratories.

About the program

The remnants of past civilizations are an important part of the historical and cultural identity of the population of each country. Exactly for this reason the Cultural Heritage preservation is one of main kinds of human activity for past 2 centuries around the world. Unfortunately, there are many factors of risks for preserving of our patrimony, which are both of natural origin (earthquakes, floods, fires, wind, sand, etc.) and on the human one (intentional damage, war destructions, anthropogenic air pollution). Recently, the latter has become the main cause of deterioration of monuments of architecture, historical buildings and museum collections in connection with the increasing role of environmental problems.

The uniqueness of each piece of Cultural Heritage treasury justifies the need of the most developed means in order to preserve the material itself against the many sources of deterioration. Because of this, the conservation community has always explored the potential of newly developed science & technology for solving the problems they are everyday facing. Since the opening of a modern meaning of restoration, chemistry has been most involved, providing reactants, poultices for consolidation, cleaning and protection. However, for last 2 decades physics, laser engineering and optoelectronics became disciplines which may give even more important contributions. It resulted in forming a new, but rapidly growing field of technical and natural sciences which deals with analysis, restoration and documentation of works of art, which is called the Heritage Science.

The School "Heritage Science" is focused on extra education of Bachelor's degree senior students and Master's degree students in physics, optics, electronics, electrical engineering, and materials science. This course includes lectures,

practical training workshops and master classes that will acquire and/or upgrade understanding of students of complex problems of restoration, storage and exhibiting of artworks and their solution by means of use of achievements of modern science.

The School "Heritage Science" covers the following areas of knowledge:

- Art history;
- Fundamentals of conservation of artworks;
- Basic principles of storage and exhibiting of works of art;
- Basic physical, chemical, laser and optoelectronic techniques and methods, which can be used in Cultural Heritage preservation for analysis, diagnostics, documentation, restoration and replication of artworks.

Participation in the School "Heritage Science" allows you to:

- Get general knowledge about the basic principles of Heritage Science;
- Study advanced physical, chemical, laser and optoelectronic techniques, which are used in Cultural Heritage preservation;
- Learn about the design and operation of modern lasers, laser and optoelectronic systems for restoration and analysis of artworks;
- Get skills of practical work on modern laser and optoelectronic equipment.

Specializations within this programme