



About the program

The program is developed within ESSENCE project of the Erasmus+ CBHE program of the European Union for the preparation of masters in digital energy. The partners of the program are European and Asian universities.

Partner universities from the European Union:

- Riga Technical University (Latvia),
- University of Kosice (Slovakia),
- Grenoble Institute of Technology (France).

Partner universities from the Russian side:

- Tomsk Polytechnic University,
- Kazan Power Engineering University,
- Ural Federal University,
- North-Eastern Federal University

Partner universities from Vietnam:

- Ho Chi Minh Technological University
- Hanoi Mining and Geological University

Learning outcomes:

- ability to demonstrate understanding of Smart Energy Systems related problems and technologies;
- ability to identify and employ appropriate mathematical models of Smart Energy Systems components, simulation techniques and computational tools to find solution for industrial tasks ;
- ability to design SES and analyze performance of Smart Energy Systems while demonstrating the ability to explain each component and entire system behavior;
- ability to apply advanced mathematical techniques and algorithms for improvement of power system planning, operation and control.

Core Curriculum:

- Technologies of energy conversion in Smart Energy Systems
- Economics for Smart Energy Systems
- Power System Analysis
- ICT for Smart Energy Systems

- Artificial Intelligence and Machine Learning in Smart Energy Systems
- Optimization in Smart Energy Systems
- Energy Management System
- Micro Grids, Smart Grids and Super Grids
- Digital Technologies for protection and communication

Length of study: 2 years

Tuition fee per year: 220,000 RUB

Teaching Staff

- [Prof. Nikolay Voropai](#) (rus)
- Dr. Ilia Shuspanov
- Dr. Elena Stashkevich
- Dr. Dmitry Efimov

Internship and Careers Opportunities

Our students have internship at modern technologies and research laboratories of the University where they develop scientific projects, using the most modern equipment from leading foreign and Russian companies, manufacturers of electric power equipment.

Upon completion of training, it is possible to continue training in postgraduate studies at INRTU and ISEM SB RAS, work at energy companies, including foreign ones.