

INSTITUTE OF ENERGY EFFICIENCY PROBLEMS



NATIONAL  
RESEARCH  
UNIVERSITY

MASTER OF SCIENCE DEGREE PROGRAM

**“SUSTAINABLE THERMAL AND ENERGY SYSTEMS”**

## Aim of the program

is to prepare qualified specialists with professional knowledge, skills and abilities to solve the following tasks in the field of industrial heat and power systems and social sphere:

- modern power engineering and heat installations development and maintenance;
- promising heat-and-power systems and equipment development and implementation;
- rational use of fuel and energy resources at industrial enterprises and utilities;
- to conduct a feasibility study with justification of the priority directions for solutions of resources saving problems with a combination of centralized and autonomous power supply including the renewable energy sources usage;
- advanced life support systems creation at enterprises and housing ;
- mathematical modeling of studied objects via modern computer programs.



# Disciplines and curriculum

The program consists of 17 modules and teaching practice, predegree practice, production practice, the research work and the state exam.

## Compulsory modules are:

1. Fundamentals of Systems Analysis and Design
2. Energy saving contemporary issues and sustainable development
3. Impact Pathways Analysis
4. Economy and business planning in industrial power engineering.
5. Automated control systems for technological processes in heat power engineering, heat engineering and heat technologies
6. Computer aided design engineering
7. Heat and mass transfer equipment at enterprises
8. Hydrogen and electrochemical power systems
9. Statistical methods for scientific research
10. Philosophy and Innovative Thinking in Engineering
11. Russian Language

# Disciplines and curriculum

## Elective courses are:

1. Energy audit and energy saving of industrial enterprises
2. Indoor microclimate analysis and design
3. Computer aided design engineering
4. Fuel supply systems
5. Thermal engineering software
6. Mathematical modeling of processes, equipment and systems



## Key Points

- studies in English
- scholarships and awards
- wide range of areas of expertise
- plenty of resources to do a profound research
- welcoming and friendly staff and tutors
- individual approach and on-going assistance
- scientific research activities, regular participation in seminars, conferences, and forums
- joint project and research activities with teachers' engagement
- communication with experts from leading energetic and engineering companies
- own dormitory for students.

## **SKILLS AND CAREER OPPORTUNITIES**

Graduates of the program are involved in the decision making or policy planning that will deliver sustainable, energy efficient systems to the global market.

Our students are welcome to participate in research projects together with local and international companies: Gazprom, RusHydro, Siemens, Mosenergo, PJSC MIPC”, LUKOIL and others.



## Essentials

<u>General requirements</u>	Degree of Bachelor / Specialist / Master in a related area of expertise; English language proficiency at B+
<u>Start of studies</u>	September, 1
<u>Duration of studies</u>	2 years (4 semesters)
<u>Total ECTS</u>	120 ECTS
<u>Degree</u>	MSc

## **Contact information**

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