Mechatronics and Robotics

South Ural State University

Degree or qualification is awarded: **Bachelor's degree**

Language of study: **English**
Mode of study: **full-time**
Duration: **4 years**
Availability of free education: **no**
Price: **179 000 rubles**

Programme webpage at the university website:
https://www.susu.ru/en/education/english-taught-programs/150306-mechatronics-and-robotics-mechatronics

Programme curator: **Andrei Radionov**
Tel.: **+7(351)272-32-30**
E-mail: mechatronics@susu.ru

1. Areas of professional knowledge

Areas of professional knowledge of graduates: design, research, production and operation of mechatronic and robotic systems for automated production in Industrial engineering.

2. Objects of professional activity

The objects of professional activity of graduates are mechatronics and robotic systems, including information and sensor, actuating and control modules, their mathematical and algorithmic support, software, methods and means of their design, modeling, experimental research, debugging and operation, research and production testing of mechatronics and robotic systems with different application areas.

3. Types of professional activity

- design and engineering;
- research and development;

4. Professional activities

Research:

- compilation of mathematical models of mechatronic and robotic systems, their subsystems and individual elements and modules, that include information, electromechanical, hydraulic, electro-hydraulic, electronic devices and computer equipment.
- development of software that is necessary for information processing in mechatronic and robotic control systems and their design
- development of experimental models of control, information and actuating modules of mechatronic and robotic systems.
- experimental research using contemporary information technology
- analysis of scientific and technical information, Russian and foreign experience in the development and research of mechatronics and robotic systems,
- conducting theoretical and experimental research in the field of development of new samples and improvement of existing mechatronics and robotic systems;
- preparation of analytical reviews, scientific and technical reports on the research results, publication on research and development results.

Design and development:

- compilation of a feasibility study for projects to create mechatronic and robotic systems, their subsystems and individual modules,

- to carry out calculations and design of part devices and subsystems of mechatronic and robotic systems using standard actuating and control devices, automation equipment, measuring and computing equipment in accordance with technical task,
- to develop design and project documentation for mechanical, electrical and electronic components of mechatronic and robotic systems in accordance with existing standards and specifications,
- carry out preliminary tests of the components of the prototype mechatronic or robotic systems according to the specified programs and methods and keep the appropriate test logs.

Specializations within this programme

Mechatronics and Robotics (Mechatronics)

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