

**Division:** *Institute of Engineering and Technology*

**Academic programme:** *15.03.02 Technological Machinery and Equipment (Hydraulic and Pneumatic Automatic Systems)*

**Mode of study:** *full-time*

**Programme length:** *4 years*

**Programme level:** *Bachelor's degree*

**Language of instruction:** *Russian*

**Programme description:** *The unique character of the programme lies in its broad diversified interdisciplinary training with a powerful potential for further use in almost all spheres of industry, including such promising industries as robotics, mechatronics, flexible systems with artificial intelligence, etc.*

*The scope of professional activity of graduates includes design-and-engineering, production-and-technology, organisational-and-managerial activities on development, creation, operation, diagnostics and maintenance of hydraulic equipment and hydraulic and pneumatic machinery. Students of this programme obtain the skills of operating and designing hydraulic and compressor machinery, as well as systems based on them, which are competitive in the global market.*

*The SUSU Department of Hydraulics and Hydraulic and Pneumatic Systems is the only one in the Ural Federal District that trains specialists in the field of hydraulic, vacuum and compressor equipment. This in-demand profession and fundamental knowledge allow graduates to get a high-paying job anywhere in the world since practically all productions are based on hydraulic and pneumatic systems.*

**Main programme-specific classes:**

- *Computer Science and Programming*
- *Computer Graphics*
- *Using of Microprocessors and Microcomputers to Control Hydraulic and Pneumatic Systems*
- *Fundamental of Designing*
- *Fluid Mechanics*
- *Paddle Machines and Hydrodynamic Gear*

- *Positive-displacement Hydraulic Machines and Hydraulic Transmission*
- *Proportional Hydraulic and Pneumatic Control Systems*
- *Dynamics and Regulation of Hydraulic and Pneumatic Systems*
- *Compressors and Pneumatic Engines*
- *Hydraulic Drive and Hydraulic Equipment*
- *Pneumatic Drive and Automation Equipment*
- *Reliability and Diagnostics of Hydraulic Machinery, Hydraulic and Pneumatic Drives*

**Programme manager:** *Dariia F. Khabarova, Candidate of Sciences (Engineering), Head of the Department of Hydraulics and Hydraulic and Pneumatic Systems*