

Construction

South Ural State University

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

Language of study: **Russian, English**

Mode of study: **full-time**

Duration: **2 years - full time, 2,5 years - part time years**

Availability of free education: **yes**

Price: **161 600 rub. - full time**

Programme webpage at the university website:

<https://www.susu.ru/en/education/masters-degree-programs/080401-construction-construction-technologies-and-construction>

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Master's program is based on the FSES 3+ requirements. Graduates have all the necessary skills to work in the professional field of activity.

Areas of professional activity

- Design, construction, operation and reconstruction of buildings and structures;
- Engineering support and equipment of construction objects;
- Development of machines, equipment and technologies necessary for the construction and production of building materials, products and structures;
- Conducting research and educational activities.

Objects of professional activity

- industrial, civil buildings, hydrotechnical and environmental facilities;
- building materials, products and structures;
- systems of heat and gas supply, ventilation, water supply and drainage of industrial, civilian buildings and environmental facilities;
- machines, equipment, technological complexes and automation systems used in the construction and production of building materials, products and structures;
- land parcels, urban buildings and territories.

Professional activities

- production and technology;
- project management;
- research and teaching;
- innovative, research and design;
- professional assessment, regulatory and methodical assessment

Professional tasks

Innovation, research and design activities:

- collection, systematization and analysis of source data for the design of buildings, structures, engineering systems and equipment, planning and development of populated areas;
- feasibility study and making design decisions, coordination of work on parts of the project, design of parts and structures;
- development of methods and software for calculating the design object, calculation support for design and working documentation, finalization of documentation concerning completed construction object;
- development of innovative materials, technologies, structures and systems, including the use of scientific

achievements;

- ensuring conformity of developed projects and technical documentation to the given task, standards, norms, rules, specifications and other executive documents;
- supervision of project implementation;
- Production and technological activities:
- organization and improvement of the production process at an enterprise or a site, control over the observance of technological discipline, maintenance of process equipment and machines;
- improvement and development of new technological processes of construction production, production of building materials, products and structures, manufacturing of machines and equipment;
- development and improvement of quality control methods for construction, manufactured products, machinery and equipment, organization of metrological support of technological processes;
- development of documentation and organization of work on the quality management of technological processes at the enterprise and production sites;
- development and organization of environmental safety measures, control over their observance;
- organization of adjustment, testing and commissioning of facilities, samples of new and modernized products manufactured by the company;
- drawing up instructions for operating equipment and checking technical condition and residual life of construction objects and equipment, developing technical documentation for repair purposes;

Research and teaching activities:

- study and analysis of scientific and technical information, domestic and foreign experience in the field of activity;
- formulation of scientific and technical problems, selection of methods and means of finding solution, preparation of data for reviews, reports, scientific and other publications;
- mathematical modeling of processes in structures and systems, computer methods for the implementation of models, development of calculation methods and CAD tools;
- conducting experiments, metrological support, collecting, processing and analyzing results, identifying theory and experiment;
- development and use of databases and information technologies for solving scientific, technical and technical-economic problems in the area of professional activity;
- presentation of the results of the work performed, organization of the implementation of research results and practical developments;
- development of teaching aids, outlines of lecture courses and practical classes in the discipline of construction of secondary and higher vocational education;
- conducting classroom studies, managing course, diploma projects, educational and production practices of students;

Project management activities:

- preparation of baseline data, conducting a feasibility study, justification and selection of scientific, technical and organizational decisions for the implementation of the project;
- planning of work and payroll budget of an enterprise or site staff;
- development and execution of technical documentation (schedules, instructions, plans, estimates, applications for materials, equipment), as well as writing reports in accordance with approved forms;
- standardization and preparation for certification of hardware, systems, processes, equipment and materials;
- development of documentation and implementation of the enterprise quality management system;
- carrying out an analysis of the costs and results of operations of production units, organization of safe methods and monitoring work processes at the enterprise, organization of staff development and certification of personnel;

Professional assessment and regulatory and methodological activities:

- conducting technical assessment of construction projects; assessment of the technical condition of buildings, structures, their parts and engineering equipment, development of expert opinions; development of design assignments, technical conditions, enterprise standards, instructions and guidelines for the use of tools, technologies and equipment.

Specializations within this programme

Theory and Practice of Organizational and Technological and Economic Decisions

Construction Technologies and Construction Mechanics

The goal of the educational program 08.04.01 Construction, master's program Construction Technologies and Construction Mechanics is development of cultural and professional competences in accordance with FSES 3+ and training of qualified and competitive specialists in the of field construction; development of autonomy students for the purpose of creating self-sufficient employees.

Design Theory and CAD of Building Structures

Building Materials, Products and Structures Technology

It is aimed at developing students' personal qualities, as well as the formation of general cultural, general-professional and functional competencies in accordance with the requirements of the Federal State Education Standards of Higher Education. In the field of personal development it is aimed at developing of students' personal qualities that contribute to their creative activities, general cultural growth and social mobility. In the field of education it is aimed at the practical implementation of the requirements of the Federal State Education Standards of Higher Education in this sphere of training as a federal social norm in the educational and scientific activities of the university.

During the training students have a lot of room to fulfil themselves in creative and research activities: participate in research projects, conferences, etc.

Water Supply and Disposal

Heat and Gas Supply, Ventilation and Air Conditioning

The goal of the educational program 08.04.01 Construction is development of cultural and professional competences in accordance with FSES 3+ and training of qualified and competitive specialists in the field of Heat and Gas Supply, Ventilation and Air Conditioning; development of autonomy students for the purpose of creating self-sufficient employees.

Technology of Construction Materials, Products and Structures

Water Supply and Disposal

The goal of the educational program 08.04.01 Construction is development of cultural and professional competences in accordance with FSES 3+ and training of qualified and competitive specialists in the field of Water Supply and Disposal; development of autonomy students for the purpose of creating self-sufficient employees.