



MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION

FEDERAL STATE BUDGETARY EDUCATIONAL INSTITUTION OF HIGHER EDUCATION "DON STATE TECHNICAL UNIVERSITY"

ACCEPTED

at meeting of the University Academic Council of

"29" 06 2023 № 12

APPROVED
Rector

B.Ch. Meskhi

« 29 » 06 2023

stamp

registration number 03.17-16.2-102

DESCRIPTION

The main professional educational programme of higher education

Intelligent transport systems

(name of the educational programme)

Intelligent transport systems

(specialization (profile))

23.04.01 Transport process technology

(code and name of the field of study)

full-time

form of study (full-time, part-time, extramural)

2022

year of admission

Agreed:

Representative of the employer or employers' association

Southern Technical Center LLC

Director



Naumenko E. Yu.

« 29 » 06 2023

2023

Agreed:

Employer's representative or employer's associations

Rostovpassazhirtrans

Vice Chief Director



Lashenko K. V.

(signature, stamp)

« 20 » 06 2023

2023

Rostov-on-Don
2023

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List of approval of the main professional educational programme of higher education

The main professional educational programme of higher education (hereinafter – degree programme) in the field of study 23.04.01 Transport process technology ‘Intelligent transport systems’ programme is developed by the department ‘Organization of transportation and road traffic’.

The reviews of the representatives of the relevant companies are on file with the graduation department.

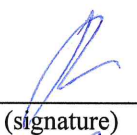
DEGREE PROGRAMME DEVELOPERS:

Head of the Master's programme



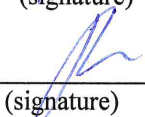
(signature) V.V. Zyryanov

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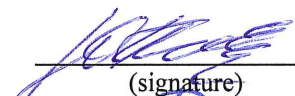
AGREED:

Vice-rector for Academic and International Affairs



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Chairperson of the DSTU Student council



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Head of Academic policy department



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SUMMARY

OF THE MAIN PROFESSIONAL EDUCATIONAL PROGRAMME OF HIGHER EDUCATION IN THE FIELD OF EDUCATION

Level of education

Master's degree

Degree programme profile:

Intelligent Transport Systems

Title and code of the broad field of education

23.00.00 Technique and technology of land transport

Degree programme:

23.04.01 Transport Process Technology

Workload (ECTS): 120 credits

Duration and mode of study according to the degree programme - full-time study is 2 years, extramural study - 2 years 4 months.

Qualification (degree) – ‘master’

Degree programme description - the digital transformation of the transport industry requires the training of specialists with knowledge and practical skills in the field of traffic management using intelligent transport systems, the development and use of innovative products and services.

Graduates of the educational program ‘Intelligent Transport Systems’ are in demand in the transport industry. Skills and competencies allow them to occupy innovative positions in the transport infrastructure, including those included in the atlas of new specialties: architect of intelligent control systems; operator of automated transport systems; transport network security engineer; builder of "smart roads", designer of intermodal transport hubs.

The educational program ‘Intelligent Transport Systems’ is unique on the territory of the Russian Federation. It is implemented in two languages: Russian and English. Graduates have the skills to implement: planning and organizing the work of transport complexes of cities and regions; improving the efficiency and safety of transport systems. The innovative focus of our graduates makes them highly competitive professionals in the transport sector.

Type(s) of professional activity(s):

- experimental research;
- organizational and managerial.

Strategic partners of the program (employers):

- MUP MTK ‘Rostovpassazhirtrans’
- Southern Technical Center LLC
- Department of transport of the city of Rostov-on-Don

- Department of Roads and Traffic Organization
- LLC ‘Modern Technologies’
- St. Petersburg State Institution ‘Directorate for the organization of traffic in St. Petersburg’

1 CHARACTERISTICS OF THE MAIN PROFESSIONAL EDUCATIONAL PROGRAM OF HIGHER EDUCATION

The main professional educational program of higher education, implemented in the direction of training 23.04.01 Technology of transport processes (master's program Intelligent transport systems) is a system of documents developed and approved in DSTU taking into account the needs of the regional labor market on the basis of the Federal State Educational Standard of higher education in the direction of training 23.04.01 Technology of transport processes, approved by order of the Ministry of Education and Science Of the Russian Federation dated 07.08.2020 No. 908.

The description of the educational programme regulates the goals, expected results, content, conditions and technologies for the implementation of the educational process, assessment of the quality of graduate training in this field of training and includes: curriculum, calendar training schedule, work programs of academic disciplines (modules), practices and state final certification, and other materials that ensure the quality of training of students, as well as the necessary methodological materials that ensure the implementation of the appropriate educational technology.

1.1 The purpose and objectives of the educational programme

The main purpose of the educational programme is the training of qualified personnel in the field of technology and organization of technical and commercial operation of transport systems, organization based on the principles of logistics of rational interaction of modes of transport that make up a single transport system, organization of a system of relationships to ensure traffic safety in transport through the formation of students universal, general professional and professional competencies in accordance with the requirements of the Federal State Educational Standard of Higher Education, as well as the development of personal qualities (purposefulness, organization, diligence, responsibility, communication skills, tolerance, general culture), allowing to realize the formed competencies in professional activity. The educational programme aims to provide documentation and methodological support for the implementation of the Federal State Educational Standard of Higher Education and, on this basis, the development of students' personal qualities, as well as the formation of universal, general professional and professional competencies that contribute to successful activities in the profile of training.

In the field of education, the purpose of the educational programme is to form the socio-personal qualities of students: purposefulness, organization, diligence, responsibility, citizenship, communication, tolerance, increasing their general culture.

In the field of education, the purposes of the educational programme are:

- to form the competencies necessary for graduates to carry out professional activities in accordance with the Federal State Educational Standard of Higher Education;

- to form the ability to acquire new knowledge, psychological readiness to change the type and nature of their professional activities and to provide graduates with the opportunity to continue their education;
- to provide a variety of educational opportunities for students;
- to ensure the training of graduates who are able to show flexibility and activity in the changing conditions of the labor market for the fields of activity within the competence of the Master of Transport direction.

The program is implemented independently without the use of a network form.

Educational activities within the educational programme are implemented in English.

1.2 Qualification assigned to a graduate

Upon successful mastering of the educational programme, the graduate is awarded the qualification ‘master’ in the direction of training 23.04.01 ‘Technology of transport processes’.¹

1.3 The volume of the educational programme

The volume of the educational programme is 120 credit units for the entire period of study in accordance with the Federal State Educational Standard of Higher Education in this field of training and includes all types of classroom and independent work, practice and time allocated for quality control of mastering the educational programme by students.

1.4 The term of the educational programme obtaining

The term of obtaining of the educational programme in accordance with the Federal State Educational Standard of Higher Education in this field of full-time training is 2 years, in correspondence form – 2 years 4 months.²

2 CHARACTERISTICS OF THE GRADUATE'S PROFESSIONAL ACTIVITY

2.1 The field(s) of professional activity and the sphere(s) of professional activity of the graduate

¹ The qualification assigned to a graduate is determined in accordance with the Order of the Ministry of Education and Science of the Russian Federation No. 1061 dated September 12, 2013 "On approval of the lists of specialties and areas of higher education" (ed. dated 04/15/2021).

² The requirements for the terms of education are specified in accordance with the Federal State Educational Standard of Higher Education

The field of professional activity of graduates who have mastered the Master's degree program includes:

- technology, organization, planning and management of technical and commercial operation of transport and transport-technological means within the framework of the country's transport system;
- organization based on the principles of logistics of rational interaction of modes of transport that make up a single transport system;
- organization of a system of relationships to ensure safety and traffic management for the functioning of the transport complex.

2.2 Types (or kinds) of tasks and tasks of a graduate's professional activity

Experimental and research activities:

participation in fundamental and applied research in the field of professional activity;

analysis of the state and dynamics of quality indicators of objects of professional activity using the necessary research methods and tools;

creating models that allow predicting the properties of objects of professional activity;

development of plans, programs and methods of conducting research of objects of professional activity;

analysis, synthesis and optimization of quality assurance processes for testing, certification of products and services using problem-oriented methods;

comprehensive assessment of the effectiveness of the functioning of traffic management and safety systems;

information search and analysis of information on research objects; technical, organizational support and implementation of research; analysis of research results and development of proposals for their implementation; justification and application of new information technologies;

participation in the development of projects of technical conditions and requirements, standards and technical descriptions, regulatory documentation for new objects of professional activity;

formation of the objectives of the project (program) for solving transport problems, criteria and indicators for achieving goals, building a structure of their interrelations, identifying priorities for solving problems taking into account indicators of economic and environmental safety;

development of generalized solutions to the problem, analysis of these options, forecasting of consequences, finding compromise solutions in conditions of multi-criteria, uncertainty, project implementation planning;

development of plans for the transport enterprises, traffic management systems;

the use of information technologies in the development of new transport and technological schemes;

participation in the preparation of practical recommendations on the use of research and development results;

organizational and managerial activities:

organization of the work of a team of performers, selection, justification, adoption and implementation of management decisions in the context of different opinions, determination of the order of work;

organization and preparation of initial data for the selection and justification of scientific, technical and organizational solutions based on economic analysis;

improvement of the organizational and managerial structure of enterprises and objects of professional activity;

conducting an analysis of the costs and results of the activities of production units; finding a compromise between different requirements (cost, quality, safety and deadlines) in long-term and short-term planning and determining a rational solution;

organization and improvement of the accounting and document management system;

selection and development of rational standards for the operation and storage of vehicles and equipment;

ensuring the efficiency and safety of transport and technological cargo delivery systems;

organization of technical control and quality management of products and services;

implementation of control and management of traffic organization systems;

organization of work with the clientele;

development of systems for safe operation of transport and transport equipment;

improvement of the staff remuneration system;

preparation and development of certification and licensing documents.

2.3 Objects of professional activity of the graduate

The objects of professional activity of graduates who have mastered the master's degree program are:

organizations and enterprises of public and non-public transport engaged in the transportation of passengers, cargo, baggage and baggage, the provision of infrastructure for use, the performance of loading and unloading operations, regardless of their forms of ownership and organizational and legal forms;

traffic safety services of public and private transport enterprises, logistics services of industrial and trade organizations, freight forwarding enterprises and organizations;

services of the state transport inspection, marketing services and departments for the study and maintenance of the transport services market;

production and sales systems, organizations and enterprises of information support of production and technological systems, research and design organizations engaged in activities in the field of development of transport technology and technology of transport processes, organization and traffic safety, factories and schools for the

training of drivers, professional educational organizations and educational organizations of higher education.

2.4 Description of work functions in accordance with the professional standard (map of professional activity)

In accordance with the qualification requirements approved by the Ministry of Transport of the Russian Federation, Order No. 260 of 28.07.2020, the following qualification requirements are imposed on a specialist in the development of traffic management projects:

A specialist in the development of traffic management projects should know:

1) requirements of the legislation of the Russian Federation, subjects of the Russian Federation on the organization of traffic, on urban planning, on highways and on road activities, on road safety, on fire safety, on transport safety, in the field of environmental protection, on technical regulation and acts of technical regulation in these areas of activity;

2) basic principles and theoretical foundations of the organization of road traffic in the Russian Federation;

3) types of documentation on the organization of traffic and requirements for their content, rules for the development, modification and approval of documentation on the organization of traffic;

4) methods of traffic management;

5) methods of organizing public parking, including paid parking;

6) methods for determining and analyzing indicators of road traffic accidents and reducing the risk of road accidents through the implementation of measures for the organization of traffic;

7) principles of integrated use of technical means of traffic management, classification of technical means of traffic management, their purpose and rules of application;

8) the procedure and methods for monitoring traffic and determining the main parameters of traffic;

9) functional capabilities of traffic modeling, goals and objectives of modeling in the development of traffic management activities within the framework of traffic management projects.

A specialist in the development of traffic management projects should be able to:

1) develop traffic management projects;

2) carry out technical, economic and environmental justification of the measures being developed, determine the sequence of implementation of measures for the organization of traffic;

3) carry out traffic monitoring and determine the main traffic parameters, determine the reliability of monitoring data and use the monitoring results to predict changes in traffic conditions;

4) to prepare a task for conducting traffic modeling and use the results of modeling for the development and justification of measures for the organization of traffic.

In accordance with the qualification requirements approved by the Ministry of Transport of the Russian Federation, Order No. 260 of 07/28/2020, the following qualification requirements are imposed on a specialist in the development of integrated traffic management schemes (hereinafter referred to as DITMS):

A DITMS development specialist, in addition to the knowledge of a traffic management project development specialist, should know:

1) features of territorial planning taking into account different types of territorial planning structure of cities;

2) conditions of functioning of transport logistics systems, peculiarities of organization and planning of cargo transportation;

3) features of creating a system for organizing passenger transportation on regular transportation routes;

4) features of creating a network of cycling and hiking routes;

5) features of the organization and maintenance of paid parking systems;

6) goals, objectives and modeling opportunities in the development of activities within the framework of DITMS;

7) methods of selecting measures for the development of transport infrastructure and the sequence of their implementation in terms of socio-economic efficiency;

8) acts of technical regulation in the field of intelligent transport systems (hereinafter – ITS);

9) domestic and foreign experience in implementing ITS projects;

10) methods of constructing a hierarchically organized set of morphological descriptions of ITS subsystems and the relationships between them, as well as the relationships of software and hardware that make up them (physical architecture of ITS) and a hierarchically organized set of functional descriptions of subsystems, subjects and objects of ITS, as well as their interactions (functional architecture of ITS).

In addition to the skills of a specialist in the development of traffic management projects, a DITMS specialist should be able to:

1) develop DITMS, as well as ITS projects as part of DITMS;

2) to substantiate and evaluate the volume and sources of financing of CSODD activities;

3) develop DITMS taking into account projects of socio-economic development of territories, as well as CSODD of municipalities having a common border with municipalities for which CSODD is being developed;

4) to assess the economic, social and environmental consequences of the implementation of the measures being developed;

5) apply the basic principles of the development and application of transport models, modeling of transport systems, methods for assessing transport accessibility, as well as the economic sustainability of the passenger transportation system by public transport;

6) predict changes in transport demand and distribution of movements by different modes of transport in the implementation of various scenarios for the development of transport infrastructure in accordance with socio-economic and urban development programs.

2.5 Key partners of the educational program

The key partners (representatives of employers' associations) involved in the formation and implementation of the educational programme in are:

- Municipal Unitary Enterprise MTK 'Rostovpassazhirtrans'
- Southern Technical Center LLC
- Department of Transport of the city of Rostov-on-Don
- Department of Highways and Traffic Management
- Modern technologies LLC
- St. Petersburg State Technical University 'Directorate for Traffic Management of St. Petersburg'

The educational program does not contain information constituting a state or other secret protected by law.

3 PLANNED RESULTS OF MASTERING THE MAIN PROFESSIONAL EDUCATIONAL PROGRAM OF HIGHER EDUCATION

The results of mastering the educational programme are determined by the competencies acquired by the graduate, i.e. his or her ability to apply knowledge, skills and personal qualities in accordance with the tasks of professional activity.

As a result of mastering this educational programme in the graduate should have the following competencies:

universal competencies (UC):

UC-1. Able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy of actions;

UC-2. Able to manage the project at all stages of its life cycle

UC-3. He is able to organize and manage the work of the team, developing a team strategy to achieve the set goal

UC-4. Able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction

UC-5. Able to analyze and take into account the diversity of cultures in the process of intercultural interaction

UC-6. Able to determine and implement the priorities of his own activities and ways to improve it based on self-assessment;

General professional competencies (GPC):

GPC-1. Able to set and solve scientific and technical problems in the field of his professional activity and new interdisciplinary directions using natural science and mathematical models taking into account the latest achievements of science and

technology;

GPC-2. Able to make informed decisions in the field of project and financial management in the field of his professional activity;

GPC-3. Able to manage the life cycle of engineering products taking into account economic, environmental and social constraints;

GPC-4. Able to conduct research, organize independent and collective research activities in solving engineering and scientific and technical problems, including planning and staging an experiment, critical evaluation and interpretation of the results;

GPC-5. Able to apply the tools of formalization of scientific and technical tasks, use application software for modeling and designing systems and processes;

GPC-6. Able to assess the social, legal and general cultural consequences of decisions taken in the implementation of professional activities;

professional competencies (PC):

the type of tasks of professional activity is organizational and managerial:

PC-1 able to organize traffic management activities and actions in relation to its participants;

type of tasks of professional activity – experimental research:

PC-2 able to use the skills of working with big data, planning, forecasting and modeling of transport processes and systems in professional activities;

type of tasks of professional activity – organizational and managerial:

PC-3 is capable of developing requirements for traffic management, the element and software base necessary to ensure the operation of services of intelligent transport systems, connected vehicles and highly automated vehicles.

In accordance with the requirements, indicators of achievement of universal, general professional and professional competencies have been established, which are formed in the document ‘Competencies achievement indicators’.

4 REQUIREMENTS FOR THE STRUCTURE OF THE EDUCATIONAL PROGRAM

4.1 Structure of the educational program

The structure of the educational program includes the following Блок s:

Block 1 ‘Disciplines (modules)’

Block 2 ‘Placement’

Block 3 ‘State final certification’

Table 1 - Structure and scope of the program³

Program structure	The requirement of the Federal State Educational Standard in ECTS
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³ In accordance with the Federal State Educational Standard

Block 1	‘Disciplines (modules)’	no less than 80
Block 2	‘Placement	no less than 21
Block 3	‘State final certification’	no less than 9
The volume of the programme		120

4.2 Block 2 ‘Placement

Block 2 ‘Practice’ includes study and industrial placement.

Types of study placement:

Specific types of educational practice are specified in the curricula.

Types of industrial placement:

Specific types of industrial placement are specified in the curricula.

When conducting an internship by directly performing certain types of work by students related to future professional activity, this type of placement is carried out in the form of practical training.

4.3 Block 3 ‘State final certification’

Block 3 ‘State Final Certification’ includes:

- preparation for the defense and the defense of the final qualifying work.

5 DOCUMENTS REGULATING THE CONTENT AND ORGANIZATION OF THE EDUCATIONAL PROCESS IN THE IMPLEMENTATION OF EDUCATIONAL PROGRAMME

5.1 Curriculum, academic calendar, work programs of disciplines (modules), practices, state final certification program and methodological materials

The following components of the educational programme are posted in the electronic information and educational environment and on the official website of DSTU in the appropriate education level subsection ‘Education’:

- description of the educational programme;
- curricula;
- academic calendar;
- annotations to working programs of disciplines (modules), practices;

- working programs of disciplines (modules), practices;
- state final certification programs;
- methodological materials (including in the DSTU Electronic Library System).

5.2 Evaluation materials on disciplines (modules), practices, research work and state final certification

Evaluation materials on the educational programme allow to assess the level of competence formation and are developed in accordance with the Regulations on evaluation materials (evaluation tools).

Evaluation materials may contain: test tasks, control questions and standard tasks for practical and laboratory classes, for written works, control works, colloquiums, preparation of reports, abstracts, speeches, preparation of reports, group and individual projects, tests and exams; tests and computer testing programs; approximate topics of term papers, abstracts and etc., as well as other forms of control that allow assessing the degree of formation of students' competencies.

Evaluation materials for the final (state final) attestations include a list of competencies that students should master as a result of mastering the educational program, a description of indicators and criteria for assessing competencies, as well as other materials necessary for evaluating the results of mastering the educational program; methodological materials defining the procedures for evaluating the results of mastering the educational program.

Evaluation materials for each discipline (module), practice, state final certification are stored as part of the educational program in the structural unit of the university that implements the educational programme.

5.3 Methodological materials on disciplines (modules), practices, research work and state final certification

Methodological materials represent a set of methodological materials on the discipline (module, practice, final state certification), formed in accordance with the structure and content of the discipline (module, practice), the educational technologies used and the forms of organization of the educational process.

Organizational and methodological materials (guidelines, recommendations) allow the student to optimally plan and organize the process of mastering the educational material.

Educational and methodological materials are aimed at students' assimilation of the content of the discipline (module, practice, research, final state certification), and are also aimed at checking and appropriately assessing the formation of students' competencies at various stages of mastering the educational material.

Textbooks, manuals, teaching aids (materials or documentation), a workbook, a workshop, a task book are used as educational publications.

6 THE EDUCATIONAL PROGRAM RESOURCE SUPPORT

6.1 Educational, methodological and informational support of the educational process in the implementation of the educational programme

The educational program is provided with educational and methodological documentation and materials in all disciplines (modules), practices of the state final certification.

The implementation of the educational program is ensured by the access of each student to databases and library collections formed according to the full list of disciplines (modules) of the educational program. During independent training, students are provided with access to the Internet.

Each student is provided with individual unrestricted access to one or more electronic library systems (electronic libraries) and to the electronic information and educational environment of the university during the entire period of study. The electronic library system (electronic library) and the electronic information and educational environment provide the possibility of student access from any point where there is access to the information and telecommunication network 'Internet', both on the territory of the organization and outside it.

The electronic information and educational environment of the university provides:

- access to the electronic library system;
- access to electronic educational resources and/or professional databases (selection of information resources by subject) in accordance with the content of the educational program being implemented;
- access to an electronic learning system that ensures the interaction of teaching staff with students (personal accounts of students and teachers);
- access to an electronic schedule (an electronic schedule means a service through which each student can find out their current schedule of classes and sessions);
- access to students' electronic portfolios;
- access to curricula, work programs of disciplines (modules), practice programs, electronic educational publications and electronic educational resources specified in the work programs of disciplines (modules), practice programs according to the educational program.

The functioning of the electronic information and educational environment is ensured by appropriate means of information and communication technologies and the qualifications of employees who use and support it.

The Scientific and Technical Library of DSTU is equipped with the necessary telecommunication equipment, communication means, and electronic equipment, has free access to the Internet, and uses Wi-Fi technologies. For independent work of students, there are 5 reading rooms with 720 seats, including 42 automated workstations with access to the Internet and the electronic educational environment of the university.

The electronic library of the University, which includes access to resources, virtual services and information materials, is formed on a single portal of the Scientific

and Technical Library [https://ntb.donstu.ru /](https://ntb.donstu.ru/), which can be accessed from the electronic information and educational environment of the university. A ‘Single Search Window’ system has been formed on the library's website, which combines the search for its own and external resources of the Scientific and Technical Library.

Each student is provided with individual unrestricted access (remote access), including in the case of e-learning, distance learning technologies, to the electronic library and the electronic information and educational environment of the university, electronic library systems, modern professional databases and information reference systems, the composition of which is defined in the work programs of disciplines and is updated annually, to the electronic information resources of the NTB (<https://ntb.donstu.ru/content/elektronno-informacionnye-resursy>) from anywhere on the Internet 24/7, containing:

- ELS ‘University Library online’ (<http://biblioclub.ru>);
- ELS ‘IPRbooks’ (<http://www.iprbookshop.ru>);
- ELS ‘Lan’ (<https://e.lanbook.com>);
- ELS ‘Znaniy’ (<http://znaniy.com>);
- ELS ‘DSTU’ (<https://ntb.donstu.ru/ebsdstu>);
- electronic library of dissertations of the Russian State Library (<https://dvs.rsl.ru>);
- information and reference system ‘Techexpert: norms, rules, standards and legislation of Russia’;
- information and educational system ‘Rosmetod’ (<http://rosmetod.ru>) and others.

The library fund is equipped with printed publications at the rate of at least 0.25 copies of each of the publications specified in the work programs of disciplines (modules), practice programs for one student from among persons simultaneously mastering the relevant discipline (module), undergoing appropriate practice (FGOS 3++).

Students from among persons with disabilities are provided with electronic educational resources in forms adapted to their health limitations.

The fund of periodicals contains, among other things, the following publications on the educational programme:

- electronic scientific journals on the NEL eLibrary platform (<https://elibrary.ru>);
- electronic scientific journals in the collection of ELS ‘Lan’ (<https://e.lanbook.com/journals>);
- electronic scientific journals in the collection of ELS ‘IPRbooks’ (<http://www.iprbookshop.ru/6951.html>);
- electronic scientific journals in the collection of the ELS ‘University Library Online’ (<http://biblioclub.ru>);
- electronic scientific journals in the collection of ELS ‘Znaniy’ (<http://znaniy.com>);
- specialized electronic periodicals in ISS ‘Techexpert’;
- archive of scientific journals of the Non-profit Partnership ‘National Electronic Information Consortium’ (NP NEICON) (<http://archive.neicon.ru>);

- archive of periodicals on the ScienceDirect platform of Elsevier publishing house (<https://www.sciencedirect.com>).

6.2 Staffing for the implementation of the educational programme⁴

The qualification of DSTU teaching staff meets the qualification requirements specified in the qualification reference books and (or) professional standards (if any).

At least 70 percent of the number of teaching staff of the university participating in the implementation of the educational program, and persons involved in the implementation of the educational program on other terms (based on the number of substituted rates reduced to integer values), must conduct scientific, educational, methodological and (or) practical work corresponding to the profile of the discipline (module) taught.

At least 5 percent of the number of DSTU teaching staff participating in the implementation of the educational program, and persons involved by the university in the implementation of the master's degree program on other terms (based on the number of replacement rates reduced to integer values), must be managers and (or) employees of other organizations engaged in work in the professional field corresponding to the professional the activity for which graduates are preparing (have at least 3 years of work experience in this professional field).

At least 80 percent of the number of DSTU teaching staff and persons involved in educational activities on other terms (based on the number of substituted rates reduced to integer values) must have an academic degree (including an academic degree obtained in a foreign country and recognized in the Russian Federation), and (or) an academic title (including an academic title obtained in a foreign country and recognized in the Russian Federation).

The general management of the scientific content of the master's degree program is carried out by a scientific and pedagogical employee of the organization who has an academic degree (including an academic degree obtained in a foreign country and recognized in the Russian Federation), who carries out independent research (creative) projects (participating in the implementation of such projects) in the field of training, who has annual publications on the results of the specified research (creative) activities in leading domestic and (or) foreign peer-reviewed scientific journals and publications, and also carrying out annual approbation of the results of this research (creative) activity at national and international conferences.

6.3 Material and technical support of the educational programme

The University has a sufficient material and technical base that ensures the conduct of all types of disciplinary and interdisciplinary training, laboratory, practical and research work of students provided for in the curriculum, and corresponding to the current sanitary and fire safety rules and regulations.

⁴ In accordance with the Federal State Educational Standard

The premises for independent work of students are equipped with computer equipment with the ability to connect to the Internet and provide access to the electronic information and educational environment of the organization.

The University is provided with the necessary set of licensed and freely distributed software, including domestic production (the composition is determined in the working programs of disciplines (modules), and is subject to updating (if necessary).

Students are provided with access (remote access), including in the case of e-learning, distance learning technologies, to modern professional databases and information reference systems, the composition of which is determined in the work programs of disciplines (modules) and is subject to updating (if necessary).

7 CHARACTERISTICS OF THE SOCIO-CULTURAL ENVIRONMENT OF THE UNIVERSITY, ENSURING THE DEVELOPMENT OF UNIVERSAL COMPETENCIES OF STUDENTS

The socio-cultural environment of the university is a set of conceptual, substantive, personnel, organizational and methodological resources aimed at creating a humanitarian environment in an educational institution that ensures the development of universal competencies of students.

The university carries out systematic work on the implementation of youth policy and educational work, the organizational structure of the educational process is effective – the Department for Educational Work and Youth Policy, the Department for the Development of Student Sports, as well as the Student Council, student associations and the Commissioner for Students' Rights.

Educational activities and extracurricular general cultural work at the university are organized in a number of areas:

- 1) 'Civil-patriotic education'. Rallies and festive mass events dedicated to public holidays, memorable dates of the history of Russia are organized and held: Defender of the Fatherland Day, Victory Day, Cosmonautics Day, etc. Open lectures, military sports games are held, film screenings are organized.
- 2) 'Creative education'. The creative abilities of students are being realized in creative collectives that carry out their activities at DSTU: the Bravo Studio theater; the DSTU creative center, within which such creative collectives as the Lis Theater, the Impulses pop collective, the Zodchie Theater of Modern Choreography, the Imedi exemplary folk choreographic ensemble work, dance theater "Without limit", dance group "D'angels", studio of choreographic miniatures "Arabesque", vocal studio "New Generation", Don KVN center, etc.
- 3) 'Cultural and moral education'. A significant contribution to the educational work is made by the cultural center and the Scientific and Technical Library of the University.

The Cultural Center forms a cultural and aesthetic environment at the university and instills the basics of corporate culture in students. This is facilitated by the fact that the main solemn events and holidays at the university are accompanied by the removal of the university's flag, listening and singing the DSTU anthem, which was created on the initiative of the cultural center.

On the basis of the scientific and technical library, book exhibitions, review lectures, literary and musical compositions that contribute to the cultural development of the student's personality and the prevention of negative social phenomena are regularly held.

- 4) 'Social interaction'. Students of DSTU participate in volunteer groups and annual actions: 'Backpack of happiness'; 'Days of donor coming of age'; 'Santa Claus Bag', etc.
- 5) 'Psychological education'. Active work is being carried out and activities are being carried out in the following areas: psychological education; comprehensive work on the socio-psychological adaptation of first-year students; psychological diagnostics; group training work; psychological counseling and correction.
- 6) 'Физическое воспитание'. The festival of student sports 'Burevestnik', the sports contest of freshmen, the rally 'Winter Cup of DSTU', etc. are held.

The following student public organizations are successfully functioning at the university:

1. Student Council of DSTU, including student Councils of dormitories;;
2. Primary trade union organization of students of DSTU;
3. Volunteer centers: volunteer center for social work 'Burning hearts', volunteer center 'Zvezda', student psychological unit 'SoDeistvie';
4. The headquarter of the student detachments of DSTU;
5. Commissioner for the Rights of students of DSTU.
- 7) 'Student self-government'. DSTU attaches particular importance to the development of student self-government, in which the Student Council of DSTU plays an important role. There are representatives of the Student Council at every faculty, in every dormitory and in every academic group.

An important role in the educational process is played by traditional mass events held by the university for the formation and development of corporate culture: Freshman Day, Art Week, Tatiana's Day, 'Miss DSTU', etc.

An important role in the general cultural development of students of the university is assigned to the Primary trade union Organization of students of DSTU, which unites students of the university to implement the tasks assigned to it. Such tasks include: protection of professional, labor, socio-economic rights and interests of trade union members; providing trade union members with legal and social protection; conducting negotiations with the university administration, concluding a collective agreement and its implementation, providing material and consulting assistance to trade union members, exercising public control over the operation of the catering complex, etc.

The activities of the University History Center are of great importance in educational work. Here you can get acquainted with the history and traditions of the university, learn a lot about outstanding people directly involved in many events: veterans of the Great Patriotic War, the leaders of production, graduates of the university.

The university has a Psychological support Center, a youth center for the prevention of negative phenomena 'Quality of Life'.

For recreation and sports, students and university employees are given the opportunity to visit sports facilities, including: the sports and recreation complex of DSTU with a swimming pool, athletics arena, sports and recreation complex 'Raduga', sports and recreation complex 'Builder', recreation center of DSTU on the left bank of the Don, sanatorium-dispensary 'Zarya', equestrian club of DSTU 'Horse running', aeronautics club 'Don Sky', yacht club 'Quiet Don' and other elements of sports infrastructure (large university gym, mini-football field, gyms in dormitories, billiard club, football field and obstacle course).

The university has created a socio-cultural environment necessary for the formation of a civil, legal and professional position of participation, readiness of all members of the team to communicate and cooperate, to the ability to perceive social, personal and cultural differences with tolerance.

Information about extracurricular work is posted on the university's website. Social networks are actively used in this direction. Announcements about the events and their social significance are placed on the information stands of the faculty. Curators of groups and deputy deans introduce students to the schedule of upcoming events and organize their participation.

8 FEATURES OF THE ORGANIZATION OF THE EDUCATIONAL PROCESS FOR PEOPLE WITH DISABILITIES

DSTU has created special conditions for obtaining higher education according to educational programs for students with disabilities.

Special conditions for obtaining higher education according to educational programs by students with disabilities are understood as learning conditions, including the use of special educational programs and methods of teaching and upbringing, special textbooks, teaching aids and didactic materials, special technical means of teaching for collective and individual use, the provision of tutor services (from among the teaching staff), sign language interpreter, a psychologist, a social pedagogue, providing students with the necessary technical assistance; conducting group and individual remedial classes, providing access to DSTU buildings and other conditions, without which it is impossible or difficult for students with disabilities to master educational programs.

Information about special conditions created for students with disabilities is available on the university's website (<https://clck.ru/FJWKV>).

The education of students with disabilities can be organized both jointly with other students, and in separate groups or according to an individual curriculum (based on the student's application).

When studying in separate groups of students with disabilities, the number of groups is no more than 15 people.

The term of obtaining higher education according to an individual plan for persons with disabilities, if necessary, can be extended, but not more than 1 year (bachelor's degree, specialty) or 6 months (master's degree).

Material and technical support of the educational process:

1. For persons with hearing disabilities:

- availability of sound-amplifying equipment, multimedia and other technical means of receiving and transmitting information in accessible forms;

- the classroom where students with hearing impairment study will be equipped with computer equipment, audio equipment (acoustic amplifier and speakers), video equipment (multimedia projector, TV), electronic whiteboard, multimedia system.

2. For persons with visual disabilities:

- availability of electronic magnifiers, video magnifiers, programs of non-visual access to information, speech synthesis programs and other technical means of receiving and transmitting educational information in forms accessible to this category of students;

- in classrooms, it is necessary to provide for the possibility of viewing remote objects (text on the blackboard, slide on the screen) using video magnifiers for remote viewing.

3. For persons with disabilities who have disorders of the musculoskeletal system:

- availability of computer equipment with special software adapted for students with disabilities, alternative information input devices and other technical means of receiving and transmitting educational information in forms accessible to students;

- using special features of the Windows operating system, such as an on-screen keyboard with which you can enter text, configuring Windows actions when typing using the keyboard or mouse.

Educational and methodological support of the educational process for students with disabilities provides:

1. Inclusion of specialized adaptation disciplines in the curriculum for the purpose of additional individualized correction of violations of educational and communicative skills, professional and social adaptation. The set of these disciplines is determined based on the specific situation and individual needs of students with disabilities based on the student's application.

2. In the educational process, socially active and reflexive teaching methods, technologies of socio-cultural rehabilitation should be widely used in order to assist in establishing full-fledged interpersonal relationships with other students, creating a comfortable psychological climate in the student group.

3. Providing students with disabilities with special printed and electronic educational resources in forms adapted to their health limitations (students with hearing

impairment receive information visually, visually impaired – audibly (using speech synthesizer programs).

4. For internships for persons with disabilities, if necessary, special jobs are created in accordance with the nature of violations and taking into account the professional type of activity.

5. For the current monitoring of academic performance, intermediate and final attestation, evaluation materials are created adapted for persons with disabilities and allowing to assess the level of formation of all competencies declared within the educational program.

The form of the current and intermediate certification for students with disabilities is determined by the teacher in accordance with the Regulations on the current control and intermediate certification of students. If necessary, a student with disabilities, taking into account his individual psychophysical characteristics, is given the opportunity to pass an interim certification orally, in writing on paper, in writing on a computer, in the form of testing, etc., or is given additional time to prepare an answer.

9 REQUIREMENTS FOR THE APPLIED MECHANISMS FOR ASSESSING THE QUALITY OF EDUCATIONAL ACTIVITIES AND TRAINING OF STUDENTS IN WITH THE EDUCATIONAL PROGRAM

The quality of educational activities and training of students within the educational programme is determined within the framework of an internal evaluation system, as well as an external evaluation system, in which the university participates on a voluntary basis.

In order to improve the educational program of the DSTU, when conducting a regular internal assessment of the quality of educational activities and training of students within the educational programme attracts employers and (or) their associations, other legal entities and (or) individuals, including teaching staff of the university.

Within the framework of the internal system for assessing the quality of educational activities within the educational programme, students are given the opportunity to assess the conditions, content, organization and quality of the educational process as a whole and individual disciplines (modules) and practices.

An external assessment of the quality of educational activities under the educational program within the framework of the state accreditation procedure is carried out in order to confirm the compliance of educational activities under the educational programme with the requirements of the Federal State Educational Standard, taking into account the corresponding approximate basic educational program.

External assessment of the quality of educational activities and training of students in the educational program can be carried out within the framework of professional and public accreditation.