



MOSCOW STATE (NATIONAL RESEARCH)  
**UNIVERSITY  
OF CIVIL  
ENGINEERING**



# BACHELOR AND SPECIALIST PROGRAMMES

catalogue  
2019

# Dear friends!

We offer you to link your fate with the construction - the most peaceful, creative, good-natured profession being in extreme demand at all times!

Each area of training in our university, each orientation and major are unique in their own way, and together they form a huge area of our professional responsibility for the construction (it's a national economy's engine on all parameters in general). We generate ideas, we give them creative intent, economically substantiate, engineer, design, construct a variety of objects, sometimes in the most difficult conditions, organize their operational efficiency, develop and implement new and unique materials and structures, protect the environment, manage production and sectors, create master plans for the development of territories and industry, form a constructive regional policy (make human life dignified, comfortable and safe).

Having got acquainted with our university, its traditions, unique spirit of professional camaraderie, with areas, orientations and majors, each of you will certainly find and choose your own way, your institute, your professors and Lecturers, new friends, and, quite likely, the Love of a Lifetime! And no matter what you've chosen, in any case, you will soon become a full member of the new great creative accomplishments in the vast expanses of our Motherland, in every corner of which the National Research Moscow State University of Civil Engineering (MGSU (NRU)) graduates have been working forging the glory of their country for almost a century!



*Welcome to your new home!*

Rector of MGSU (NRU)

Andrey Volkov

## «Applied mathematics»

Applied mathematics is a fundamental and, at the same time, universal applied field of professional competencies related to the construction, analysis and optimization of mathematical objects` models, processes and technologies in all areas of practical human activity, including science-related research and education. Exactly well-constructed mathematical models provide a basis to make the correct decisions of the tactical and strategic level, teach to think and systemically acquire information, make adequate

predictions, look for alternatives and compromises. Our graduates are in demand not only in the construction industry, where their traditional knowledge is extremely important, but also in other sectors of industrial production, economy, financial and social sectors, at the level of state administration, expert activities and consulting. Applied Mathematics is a major of analysts and executives, talented and creative people.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Application of mathematical methods to the solution of engineering and economic objectives	Institute of Fundamental Education (IFE)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), PHYSICS, RUSSIAN LANGUAGE

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- creation, application and research of the mathematical methods and models of objects and systems, processes and technologies intended for computation, analysis and preparation of the solutions in all areas of industrial, economic and social activities, science and engineering;
- knowledge-intensive software, information, computer systems and technologies, design automation systems, software verification;
- design of the findings and knowledge, probability theory and mathematical statistics, theory of stochastic processes, analysis of experiments, expert systems and consulting, system for the decisions synthesis and analysis, systems with the elements of artificial intelligence;
- application software in engineering and economy, engineering and computer graphics;
- theoretical mechanics, structural mechanics, materials mechanics, theory of elasticity, design and engineering, building structures;
- operating systems, design of local information computer networks and open systems, web-design.

### WORK & CAREER

In the high-tech and knowledge-intensive sectors of the construction and other branches, design institutes and organizations, design bureaus, financial-and-investment consulting companies, analytical structures of public authorities.

## 07.03.01

# «Architecture»

Architecture is a creative and, at the same time, engineering area of activities, art and science to design and construct buildings and facilities constituting a spatial environment for comfortable and safe human life and activity, which is also called architecture.

An architect's high mission is to follow human aspirations to create a better environment for themselves by a creative search of a compromise between functional (application, comfort, benefit), technical (strength, reliability, durability)

and aesthetic (beauty, symbolism) qualities of Labor objects. Architecture is performing society's vital functions and, at the same time, is forming them for the contemporaries and future generations. This unique feature determines exclusively the professional and social responsibility of an architect, turn a process of university training into some thing special in all areas: from the required spaces and multimedia 3D-studios, to the practicum at the Moscow's best architectural bureaus, and international academic mobility.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 5 years
EDUCATIONAL TRACK	INSTITUTE
Architecture	Construction and Architecture Institute (CAI)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, CREATIVE AND PROFESSIONAL ADMISSION TEST

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- theory and practice of analysis and design (creation, transformation, conservation, adaptation, use) of a harmonious, comfortable and safe artificial environment of life and activities (buildings, facilities, their complexes and elements);
- art and urban planning, drawing, painting, architecture and engineering graphics, spatial modeling, composition, design and bread-boarding;
- architectural constructs and engineering theory, technologies and materials, engineering systems;
- infrastructure planning, modeling of transport and crowd flows, land improvement, landscape design and visual analysis;
- management of urban and regional projects and programs, created-owned technical supervision and control over the construction, control of land use and site development rules;
- territorial information, architecture-and-engineering and geoinformation systems (GIS), multimedia computer technologies, design automation, 3D-visualization and presentation of design solutions;
- theory of architecture and urban planning, protection of historical and cultural heritage, reconstruction and restoration;
- ecology and geocology, biospheric compatibility, comprehensive security.

### WORK & CAREER

In the design institutions and organizations, architecture, landscape and engineering bureaus, technical and industrial design companies, construction organizations, regional and municipal public authorities on the field-oriented positions.

07.03.02

## «Reconstruction and restoration of architectural heritage»

High mission of the architect in the field of reconstruction and restoration of national architectural heritage is cultural heritage preservation and simulation for the future generation, shoring of foundation for the formation of the responsible and professional attitude to the history of creation, tradition, beauty and harmony.

Our students gain knowledge, skills, abilities and work experience not only in the field of architecture, but in the engineering element of architectonics which are so important

for the complex solving and often unique reconstruction and restoration problems of the memorials architectural heritage (buildings, constructions, building-up and architectural landscape).

We support for the future generations the objects of cultural heritage, professionally and responsibly adapt it to the modern usage, our work helps not to break off the history of Nations and generations threads.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 5 years
EDUCATIONAL TRACK	INSTITUTE
Reconstruction and restoration of architectural heritage	Construction and Architecture Institute (CAI)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PROFESSIONAL AND CREATIVE ADMISSION TEST

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- theory and practice of analysis and design (creation, transformation, conservation, adaptation, use) of the objects of cultural heritage;
- drawing, painting, architecture and engineering graphics, spatial modeling, composition, design and bread-boarding;
- architectural constructs and engineering theory, technologies and materials, engineering systems in the field of reconstruction and restoration;
- land improvement, landscape design and visual analysis, reconstruction;
- management of urban and regional projects and programs in the field of reconstruction and restoration of architectural heritage, created-owned technical supervision and control over the construction;
- multimedia computer technologies, design automation, 3D-visualization and presentation of design solutions.

### WORK & CAREER

In the design institutions and organizations, architectural, landscape and engineering bureaus, construction organizations, regional and municipal public authorities on the field-oriented positions.

## «Urban planning»

Urban planning is an extremely important area of professional activities providing for the strategic vectors, principles and mechanisms for sustainable territorial planning and development of territories. Our professors and lecturers will teach you to use the most advanced approaches and tools for implementing an urban policy at the level of general planning, design and functional zoning, transport and engineering infrastructure, creation of comfortable and safe living and working conditions for each person (in

the multi-scales megacities, city-forming principles and location of the cities and settlements. You will master the skills of urban planning analysis, modeling of land development's risks, determining of laying out and placement of infrastructure facilities. Also you will plunge into the urban planning theory, learn to look at architectural monuments through the eyes of a professional, preserve the rich historical and cultural heritage of our Motherland for ourselves and for future generations.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 5 years
EDUCATIONAL TRACK	INSTITUTE
Urban Planning	Construction and Architecture Institute (CAI)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PROFESSIONAL ADMISSION TEST

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- urban design policy and analysis, general planning, urban planning design and zoning, spatial organization of urban design;
- management of urban and regional projects and programs for sustainable development of territories;
- urban regulation, control of land use and building-up rules;
- planning of engineering and transport infrastructure, modeling of transport and crowd flows, land improvement, control over construction;
- architecture-and-construction design, modeling and breadboarding;
- urban planning theory, protection of historical and cultural heritage monuments, reconstruction of valuable building-up, visual landscape analysis;
- territorial information and geoinformation systems (GIS), multimedia computer technologies and design automation;
- ecology, geology and geoecology, biospheric compatibility, comprehensive security;
- regulatory and legal support of the urban planning activities.

### WORK & CAREER

In the design institutions and organizations, architectural bureaus, regional and municipal public authorities, responsible for the general and landscape planning, development of the territories, land-arrangement and cadaster.

# «Technosphere safety»

The modern scientific-technological progress determines the requirements to various production techniques, an intensive use is taking practically the greater part of our Life and activities. Along with a high efficiency and low cost of production engineering, the basic requirements to them are associated with the safety of the technosphere (a high-tech environment, which was created artificially by humans for humans; the buildings, structures, the industry, transport and infrastructure facilities must not be harmful to the environment and humans).

The technosphere safety is a comprehensive activity from work safety and environment protection to risk management, localization and elimination of the disasters after technogenic emergency situations. Our major efforts are focused on training of highly qualified professionals in the field of fire safety and engineering protection of the environment, which are some of the most in demand constituents of the integrated safety and security of any segment of the real economy sector.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Fire safety	Construction and Architecture Institute (CAI)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- risk and hazard assessment procedures, management of fire risks, fire extinguishing and fire safety;
- fire safety in the field of building materials and constructions, automatic fire fighting systems and equipment, flameproofing and explosion stability, fluid and gas dynamics;
- dangerous production processes and production areas, industrial safety, environment engineering protection;
- risk management, localization and elimination of the aftermaths of technogenic and natural emergency situations;
- environmental responsibility in the area of engineering and technologies, environment monitoring and environmental impact assessment, instrument;
- environmental constructions, land improvement, protection of territories against waterflooding, restoration of water bodies, industrial water treatment;
- rules, supervision and control in the field of hazard rating and anthropogenic impact on the humans and their habitat, metrology and certification;
- methods and equipment for protection of the humans and the environment from hazards, work safety.

### WORK & CAREER

In the design and construction organizations; the state fire-fighting service; environmental laboratories; federal, regional and municipal entities and organizations, which are responsible for construction, fire, industrial and environmental safety.

## 08.03.01

# «Construction»

Builder is a unique and respected profession, while construction is an economy's engine at all times. Today construction is a sector requiring complex and specialized knowledge. Our graduates - builders are responsible for the entire life cycle of modern industrial and civil buildings and facilities at the stages of their urban planning and investment concept creation.

Therefore, when choosing a Construction, during the first two years, you will get a basic set of professional competencies, which will be expanded and supplemented by knowledge, skills and abilities corresponding to the chosen training orientation at the senior terms. A builder is an engineering profession and at the same time creative and imbued with a spirit of professional partnership and traditions, implying a dynamic career growth, whose limit depends only on you.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
	EXTRAMURAL, 5 years
EDUCATION PROFILE	INSTITUTE
Industrial and civil construction	Construction and Architecture Institute (CAI)
Production and application of the construction materials, products and structures	
Construction of engineering, energy, hydraulic and environmental protection facilities	Institute of Hydraulic Engineering and Power Plant Construction (IHEPPC)
Heat and gas supply, ventilation, water supply and water disposal of the buildings, facilities, settlements	Institute of Engineering and Ecological Construction and Mechanization (IEECM)
Technical operation of the housing and public utilities facilities	
Real estate expert examination and management	Institute of Economics, Management and Information Systems in Civil Engineering and Real Estate (IEMISCERE)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- architecture and civil engineering;
- mathematical modelling, theoretical and structural mechanics;
- building structures (metal, reinforced concrete, masonry, wood-en and plastic) foundations and basements, soil mechanics;
- modern and perspective construction materials and products;
- engineering systems and infrastructure, including design and technical operation;
- construction production operational procedures, design of works performance and construction organization;
- project management, price formation and estimated rationing quality construction, technical regulation;
- management of real estate, municipal and urban infrastructure;
- construction informatics, computer-aided modelling, automation of design, engineering and management of construction;
- ecology, industrial and production safety, labor protection;
- other fields of knowledge and professional competencies according to the information higher.

### WORK & CAREER

In the design, construction and operating organizations, development companies, at the factories of the construction industry and at construction bureaus, regional and municipal public authorities, responsible for the organization and planning of the territories.





## Educational tracks:



INDUSTRIAL  
AND CIVIL  
CONSTRUCTION



CONSTRUCTION  
OF ENGINEERING, ENERGETIC,  
HYDRAULIC AND ENVIRONMENTAL  
PROTECTION FACILITIES



HEAT AND GAS SUPPLY,  
VENTILATION, WATER SUPPLY  
AND WATER DISPOSAL OF  
THE BUILDINGS, FACILITIES,  
SETTLEMENTS



TECHNICAL OPERATION  
OF THE HOISING  
AND PUBLIC UTILITIES  
INFRASTRUCTURE



EXPERTISE  
AND PROPERTY MANAGEMENT



PRODUCTION  
AND APPLICATION  
OF THE CONSTRUCTION  
MATERIALS, PRODUCTS  
AND STRUCTURES

## «Construction of unique buildings and facilities»

Modern civil engineering is a high-tech industry. Our country is justifiably proud of the large-scale and unique construction projects, which include hydro- and nuclear power plants, booster sites, super-long tunnels and bridges, berthing and offshore facilities, TV towers and multistoried buildings, subway, olympic Games stadiums and the sports infrastructure. Designing and construction of such facilities is a high responsibility, and only elite construction professionals can combine the best traditions of the Rus-

sian engineering school with science and good practices of creation and application of modern and advanced design and production technologies. It is just our university that has been training the specialists of such a high level for the whole country. This occupation is not suitable for everybody. However, with the help of our professors and teachers you are sure to master it, and someday, your name will be associated with the next legendary construction project of Russia and contribute to its pride.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
CIVIL ENGINEER	FULL-TIME, 6 years
SPECIALIZATION	INSTITUTE
Construction of high-rise and large-span buildings and structures	Construction and Architecture Institute (CAI)  Institute of Hydraulic Engineering and Power Plant Construction (IHEPPC)
Construction of critical hydraulic facilities	
Construction of thermal and nuclear power plants	
Construction of underground facilities	

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- architecture, design and engineering;
- mathematical modelling, theoretical and structural mechanics
- (strength of materials, theory of elasticity and plastic properties, statics, dynamics and stability of structures), construction aerodynamics;
- building structures (metal, reinforced-concrete, stone, wood and plastic), foundations and basements, soil mechanics, geology, tectonics;
- modern and advanced construction materials, nanotechnologies, composite materials;
- effective technologies and organization of building production, project management, construction quality control, rationing and technical regulation;
- construction informatics, computer-aided modelling, automation of design, engineering and management of construction;
- ecology, industrial and production safety, seismic stability, monitoring of facilities and structures;
- other fields of knowledge and professional competencies in accordance with specialization (see above).

### WORK & CAREER

In hi-tech planning and design and construction organizations, state corporations involved in unique industrial construction projects, research institutes, the state structures and institutions, which are in charge of norm setting, technical regulation and construction management.



## Educational tracks:



CONSTRUCTION OF HIGH-RISE  
AND LARGE-SPAN BUILDINGS  
AND STRUCTURES



CONSTRUCTION OF CRITICAL  
HYDRAULIC FACILITIES



CONSTRUCTION OF THERMAL  
AND NUCLEAR POWER PLANTS



CONSTRUCTION  
OF UNDERGROUND  
FACILITIES

## «Informatics and computer science»

Any high-technology construction in the 21st century begins with a proper project, which creation is skilled and responsible work with the usage of the newest computation and clerical aids, communication and networking technologies, informatics, mathematical and computer modeling, systems and technics of data processing and storage, IT-infrastructure with elements of artificial intelligence. We train specialists in the field of modern automation control systems (ACS) in construction, statement, analysis and solving

of the problems of multidimensional designing, structural design, information modelling of the stages and elements of the building objects life cycle, geoinformation modeling of territories.

Our graduates create and use complex, integrated design systems, which are qualitatively changing modern and future construction.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Systems Engineering and Automation of Design in Construction	Institute of Economics, Management and Information Systems in Civil Engineering and Real Estate (IEMISCERE)
LIST OF ENTRANCE EXAMS	
MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS	
FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES	
<ul style="list-style-type: none"> <li>automation control systems (ACS) in construction;</li> <li>computer science and infrastructure, system firmware, system support and software;</li> <li>geometric modelling, computer design and image processing, pattern recognition;</li> <li>multidimensional information (3D, N-D) models and virtual reality;</li> <li>data and knowledge design, expert systems, solution synthesis</li> </ul>	<ul style="list-style-type: none"> <li>and analysis systems, system with the elements of artificial intelligence.</li> <li>geoinformation systems (GIS) and technologies;</li> <li>design and information modeling (BIM) of life cycles of buildings projects;</li> <li>design of local information computing networks and open systems;</li> <li>web-design and portal solutions;</li> </ul>
WORK & CAREER	

In the high-tech investment-and-finance, engineering, production and IT-companies, field-oriented structures of the federal, regional and municipal authorities of government.

## «Information systems and technologies»

One of the main characteristics of the modern society is the level of the information potential in part of getting, analysis and holding huge amounts of data. Information resources and new technologies change economic, industrial and social tendencies, claims suitable changes in the methods of management. The management of modern massive construction projects and manufacture are simply

impossible without information technologies. Our IT-specialists have the unique set of multipurpose competences, which are oriented to the problem solving of the effective construction of the information processes and systems in any branch, elaboration, global implementation and supporting life cycle of the automatized systems of all levels, work in command and responsibility for the outcome.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Systems Engineering and Information Technologies of Management in Construction	Institute of Economics, Management and Information Systems in Civil Engineering and Real Estate (IEMISCERE)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- automation systems in management (ASM);
- sectoral and multipurpose information, computing systems and technologies;
- design of local information computing networks and open systems;
- corporate (distributed, cross-platform, "cloud" information systems, system and application software of all levels;
- structure design and data manipulation and knowledge, data protection;
- systems analytics, «big data» elaboration, expert systems, synthesis and analysis systems, system with the elements of artificial intelligence;
- project management, logistics, virtual organizational structures;
- models and systems of electronic document flow.

### WORK & CAREER

In the high-tech investment-and-finance, engineering, production and IT-companies, field-oriented structures of the federal, regional and municipal authorities of government.

15.03.04

## «Automation of technological processes and productions»

In the modern stage of development of the industrial and civil engineering a qualified setting and addressing of objectives is becoming not just relevant for the creation and practical application of systems for computer-aided control of technological processes and productions, but the only possible direction of development of the scientific and technological progress and technical modernization of the sector.

Today it is impossible to imagine the construction-related process without automation. Lines of production of modern building materials and structures are robotized, any

construction site cannot do without various automated equipment, automatic machinery controls all technological cycles of engineering systems and networks of the urban and regional level.

Our graduates are the specialists in automation who are able to design the systems, to «see» the course of the process which is hidden behind the walls of buildings, machine frame and devices, to professionally diagnose and eliminate failures of the most complex technological processes and productions.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Engineering and Construction Technologies Automation	Institute of Engineering and Ecological Construction and Mechanization (IEECM)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- theory of automatic management, cybernetics in construction;
- robotics industrial complexes, teleautomatics and automatics;
- manufacturing management of building materials and constructions, reliability and efficiency management, ecological safety and audit;
- life cycle management systems, expert and intelligence systems of control;
- information modelling, virtual reality system;
- design of automatized and automation management systems;
- design of management, connection and safety systems;
- design of power supply systems;
- regulatory and engineering provision of building complex,
- metrology and sertification.
- automation of industrial processes;

### WORK & CAREER

In the knowledge intensive industries of manufactory, design and construction organizations, scientific and research institutions, public authorities.

23.05.01

## «Ground transport and process complexes»

The area of professional activities of our specialists includes the construction, transport, and special machine-building industry. It is directly aimed at the solution of vital problems of the imports substitution of the equipment and technologies for the production and operation of modern and advanced equipment models of machines and equipment, as well as the industrial and manufacturing complexes on their basis. You will have access to the modern technologies for designing of technological complexes of

all levels, cars, combined power plants, pipeline transport systems, a technological infrastructure of unique industrial production facilities, hi-tech and mobile equipment for rectification of the consequences of the emergency situations, special equipment, machinery and mechanisms. Our specialists develop and actively implement innovations in the field of the technological support of the industrial construction, transport and municipal infrastructure.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
SPECIALIST	FULL-TIME, 5 years
SPECIALIZATION	INSTITUTE
Lifting and transporting, construction, road-making machines and equipment	Institute of Engineering and Ecological Construction and Mechanization (IEECM)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- modeling, experimental engineering, production, upgrade, operation and maintenance of lifting and transporting, construction, road-making equipment and their components, as well as technological complexes on their basis;
- machine-building industry, theory of mechanisms and machines, machine components, fundamentals of design development, systems of automation and mechanization of the construction industry and industrial production;
- metal technology and construction materials, composite materials, nanotechnologies;
- designing and operation of elevators, hoists, moving staircases, passenger conveyors;
- electrical technology, electronics, electric equipment, electric drive, satellite navigation and positioning systems;
- combustion engines, hydraulic and pneumatic drive, machines with cars with combined power plants;
- industrial and environmental safety of transport and technological complexes;
- technical normalization and regulation in the field of designing and operation of transport and technological complexes, standardization and certification of machines and equipment.

### WORK & CAREER

In the high-tech sector of the construction, machine-building industry and other industrial production, design, construction and operating organizations, transport and logistics and industrial enterprises, experimental design offices.

## «Standardization and metrology»

The discipline is laid on training of highly-skilled specialists in the field of development, implementation and supervision of observance of norms, rules and requirements to products and services, their application (use), transportation and recycling, including all phases of development of production processes and industrial production. Our graduates develop metrological support facilities and quality management systems on the basis of the best domestic and foreign practices. Standardization and metrology

are the integral components of any innovation cycle, with the building sector being the most capital-intensive in this respect. It is here where the hi-tech solutions are specifically in great demand, and shortening of the timeframe for the innovation promotion is extremely important. A competently arranged standardization strategy is the shortest way to the technological and economic efficiency of any production facility, improving of quality, reliability and safety of products.



<b>DEGREE</b>	<b>TERM OF APPRENTICESHIP/MODE OF ATTENDANCE</b>
BACHELOR	FULL-TIME, 4 years
<b>EDUCATIONAL TRACK</b>	<b>INSTITUTE</b>
Standardization and metrology	Construction and Architecture Institute (CAI)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- standardization and metrology of products (services), processes and production facilities;
- equipment of factories, metrological and testing laboratories, methods and measuring means, tests and control;
- technical rate-setting and regulation, standardization and quality management systems, claims, metrological support of scientific, production, environmental and ecological activities;
- certification of production, technical means, systems, production processes and equipment, modern and advanced materials;
- accreditation of metrological and industrial testing, research and inspection divisions;
- simulation, planning, conducting of experiments and verification of their results;
- technical and legal documenting of metrological processes and results, certification and accreditation;
- methodical and technical support of control, measurements and trials, checkout circuits, calibration and operation of measuring means.

### WORK & CAREER

In the design and construction organizations, at the factories of the building industry and industrial production, federal and regional structures and institutions, which are responsible for quality, technical and industry regulation.



# «Management in technical systems»

The modern building, apart from the monolithic framing, filler structures and roof coating, is a complex of sophisticated engineering systems. Only highly trained professionals can skillfully combining theoretical knowledge and practical experience. The highest priorities of designing and construction are the energy and resource efficiency, environmental integrated security and comfortable living and working environment. In homes which are commonly referred to as «intelligent» or «smart» homes, the renewable

and alternative energy sources, industrial and household automatic devices, state-of-the-art information, communication and multimedia technologies must be extensively used. The development, engineering and commissioning of a great number of such technical systems is the area of professional activities of our graduates. Your tasks for the near future are the control of technical systems, without infringing the harmony of Nature and attaining a dramatically new level of technological development of the society.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Intelligent systems and automatic devices in construction	Institute of Engineering and Ecological Construction and Mechanization (IEECM)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- theory of automatic control, technical cybernetics;
- automation of building and construction engineering systems;
- technical systems management, reliability and efficiency management, ecological safety and audit;
- life cycle management systems, expert and intelligence systems of control;
- information modelling, virtual reality system;
- design of automatized and automation management systems;
- design of management, connection and safety systems;
- design of power supply systems;
- regulatory and engineering provisions of building complex, metrology and sertification.

### WORK & CAREER

In the knowledge intensive industries of manufactory, design and construction organizations, scientific and research institutions, public authorities.

## «Economics»

Economics of civil engineering is one of the most important and crucial industry development branch. If you decide to become an economist, will be sure to choose a sphere of activity which is associated with its real sector. It is a guarantee of an employment in the specialty. In this sense the construction industry is the most promising and dynamically developing market segment. At our university, along with general economic competence, you will be taught specifically the industry economy, will get a necessary combination of engineering knowledge and economic modeling skills in the field of the biggest, infrastruc-

al, socially-oriented, multiplicative and hi-tech industry, which is the construction. Nowadays civil engineering is oriented to the new level of the economic analysis that is the assessment of cost of the entire life cycle of buildings and constructions at the stage of the investment planning and designing. Along with the professional competence in the field of pricing and estimate budgeting, you will learn to manage the investment and construction projects and programs, will become a specialist in the area of management of innovations and budget planning at all levels.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
	EXTRAMURAL, 5 years
EDUCATIONAL TRACK	INSTITUTE
Economics of companies and organizations	Institute of Economics, Management and Information Systems in Civil Engineering and Real Estate

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, SOCIAL SCIENCE

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- economic modeling, analysis, forecasting;
- macro-economics, micro-economics, econometrics, statistics,
- institutional economics;
- theory of the industry-specific markets, marketing, world economy and international economic relations;
- organization, production planning and management, management of projects and programs, logistics at the factory, quality management;
- staff management, professional communications, the organization, labor norming and payment;
- business economics, budgetary planning, comprehensive analysis of financial and economic activity, economic evaluation of investments and innovations, risk management;
- financial planning, accounting and supervisory control, economic audit;
- pricing and estimate rationing;
- taxes, tax projection, accounting control;
- information systems and technologies in the economy, corporate information systems at factories;
- regulatory and legal support of industry-specific economic activities.

### WORK & CAREER

In investment and construction, developing and operating organizations and at the enterprises of the real economy sector, industry-specific and cooperating financial and economic structures of federal, regional and municipal governments.

## «Management»

Management is a science and art of administration. We train managers for the largest and most capital-intensive sector of the domestic real economy that is civil engineering. Our graduates are goal-oriented and ambitious professionals in a good sense. They are ready to assume responsibility for the administration of the factories and personnel, programs and projects. They are capable of analyzing, setting of goals and working out of solutions to industrial problems at all levels, searching for alternatives and reaching compromises, adopting innovations and

forecasting the future developments. The basic profiles of our activities are focused on organizational and economic specifics accordingly, which are the industrial and financial management. However, in any case with our help you will become a professional who is demanded on the labor market not hypothetically, will be demanded by the absolutely specific construction industry, which is the powerhouse of the national economy at any stage of its development, which guarantees a dynamical career growth.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Management in investment and construction sphere	Institute of Economics, Management and Information Systems in Civil Engineering and Real Estate (IEMISCERE)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, SOCIAL SCIENCE

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- corporate, competitive, organizational, functional, strategic planning and management of the factories and the organizations of all forms of ownership;
- economic modeling, analysis, forecasting, theory of industry-specific markets, marketing;
- organization, production planning and management, management of projects and programs, production Logistics, quality and change management, anti-crisis management;
- staff management, professional communications, HR and project teams management, motivation and incentives;
- budgetary and financial planning, pricing and estimate rationing, management of expenses, financial accounting and supervisory control, economic audit, tax projection;
- estimate and management of assets and capitals, management of investments and innovations, risk management, banks and credits;
- information systems and technologies in management, corporate information systems at factories;
- regulatory and legal support of industry-specific economic activities.

### WORK & CAREER

In industry-specific and other industrial organizations, at investment and construction, developing and operating businesses, financial and analytical companies, industry-specific management structures of the federal, regional and municipal level.

## 38.03.04

# «State and Municipal Management»

The subject of state management is in great demand among managers in the area of federal, regional, and municipal professional responsibility. The knowledge and competences enabling students to organize and manage public and municipal-level authorities, engaged in the performance of executive or legislative powers, serve to assess human capacity in any Russian industry. Effective control over the implementation of regional programs and projects is an integral part of public confidence in government services, government-owned corporations,

and leading enterprises of the key RF industries. MGSU's mission is to educate specialists by providing a systemic knowledge of theoretical and practical management in respect of public and municipal property, skills in the governing of social and legal relations between the state and citizens. Moreover, at our university the training is focused on the construction industry and the public utilities sector, which suffer from a substantial deficit of highly skilled personnel due to the large scale of problems typical for these industries.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Regional and municipal management	Institute of economics, management and information systems in civil engineering and real estate (IEMISCERE)

### LIST OF ENTRANCE EXAMS

MATHEMATICS (advanced), SOCIAL STUDIES, RUSSIAN LANGUAGE

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- State regional and municipal management; public and political management; self-management;
- Public policy and geopolitics; government authorities; economic regulation; management of industries and development, programs, investments and innovations; crisis management;
- Regional economy; territorial administration; demography; development of regions and territories; special economic zones;
- Law; conflicts of interest and powers; conciliation procedures; judicial practice;
- Public service; personnel policy; personnel management; professional communications; candidate pool; international models of public service;
- Federal and municipal property; budget and financial planning; accounting and control; auditing; tax planning; accounting and reporting;
- Public information systems of federal, regional, and municipal level; informational support of government authorities and subjects of the Federation; case analysis centers.

### WORK AND CAREER

Professional branches of federal government authorities, regional and municipal government authorities, industrial enterprises and utilities services providers; professional public associations.

38.03.10

## «Hosing services and communal infrastructure»

Economic resilience and scale of any government, the level of citizen’s life, territorial and industrial development should have a strong foundation: it’s an effective communal complex. Our apartments need to be light and warm, buildings need to be solid and beauty, moreover it’s should be comfortable, clean and safely outdoors. Who and how should manage all this processes? How much does it cost to the government, to every city and of course to the citizens? What challenges and what problems should be solved to find the happiness from the communication with

our relatives and the coziness in our homes and flats without any accidents and damages, irresponsibility some of colleagues and the figures in the accounts for communal? Give the answer to all these questions, to solve these problems professionally and responsibly is the minimal qualification level of our graduates. Furthermore they have knowledge in the areas of economy, workforce management, necessary engineering knowledge, etc. which will help you to become in-demand and opinion leader at any level in every Russian region.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Hosing services and communal infrastructure	Institute of Economics, Management and Information Systems in Civil Engineering and Real Estate (IEMISCERE)

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, SOCIAL SCIENCE

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- exploitation of buildings, constructions, complexes and territories, among them civil, industrial and special buildings and the objects;
- economy and management of the investments to the communal complex;
- utility networks, systems and infrastructure of buildings, cities and territories;
- people and collective management, social initiations and psychology;
- real estate management and real estate appraisals;
- energy and another resource efficiency of housing and utilities complex, alternative sources of energy and infrastructure («passive», «active», «smart» houses and systems);
- regulating and tariffing of housing and utilities sector, normative technical and economic documents, federal legislation;
- safety of communal complex, natural environment protection, «green» technologies.

### WORK & CAREER

In investment and construction, developing and operating organizations of all forms of ownership, specialized public authorities of all levels – councils, prefectures, municipalities, municipal governments – sector ministries and departments.

## «Construction» (Branch of «MGSU (NRU)» in Mytischki)

The builder is a respected, unique profession, while construction is any economy's engine at all times. Nowadays construction industry is an area requiring a comprehensive and wide range of special knowledge. Our graduates are the builders, and they bear responsibility for the entire life cycle of modern buildings and civil and an industrial structures. At the stages of the city development plan and designing, we should think about efficient construction, maintenance, repairing and redesigning the of facilities,

as well safely and profitably recycle them in the future. Choosing the «Construction» majoring in the process of studies, you will get professional competence skills and abilities, which are sufficient for coping with the above stated challenges at a professional level. A builder is an engineering profession being at the same time creative and imbued with a spirit of professional camaraderie and traditions, implying a dynamic career growth, the limit of which now depends on you.



DEGREE	TERM OF APPRENTICESHIP/MODE OF ATTENDANCE
BACHELOR	FULL-TIME, 4 years
EDUCATIONAL TRACK	INSTITUTE
Industrial and civil construction	Branch of «MGSU (NRU)» in Mytischki

### LIST OF ENTRANCE EXAMS

MATHEMATIC (profile), RUSSIAN LANGUAGE, PHYSICS

### FIELDS OF KNOWLEDGE & PROFESSIONAL COMPETENCIES

- architecture, design and engineering;
- mathematical modeling, theoretical and structural mechanics;
- building structures (metal, reinforced concrete, masonry, wooden and plastic) foundations and basements, soil mechanics;
- engineering systems and infrastructure of buildings and facilities
- construction production operational procedures, design of works performance and construction organization;
- project management, price formation and estimated rationing, quality construction, technical regulation;
- construction informatics, computer-aided modeling, automation of design, engineering and management of construction;
- ecology, industrial and production safety, labor protection;
- modern and perspective construction materials and products.

### WORK & CAREER

At the design, construction and operating organizations, development companies, at the construction industry businesses, at the engineering offices, federal, regional and municipal structures and institutions, which are in charge of the organization and management of the construction activities.

# ADMISSION PROCEDURE for foreign citizens

To apply for admission to National Research Moscow State University of Civil Engineering (NRU MGSU) a foreign citizen has to prepare and submit to the University the following documents:

1. The completed Application form for foreign students;
2. The notarized copy of the educational document, legalized in the country of issue, including a copy of the page with the legalization mark - THE LAGALIZATION MARK IS NOT REQUIRED FOR THOSE, WHO APPPLY FOR THE RUSSIAN LANGUAGE PROGRAM or WHOSE EDUCATIONAL DOCUMENTS ARE ISSUED IN RUSSIA;
3. The Russian translation of the educational document, certified by translator;
4. The copy of the first page of foreign passport;
5. The copy of previously obtained Russian visa;
6. The Russian translation of the first page of foreign passport, certified by translator - THOSE WHO HAVE A COPY OF THE PREVIOUSLY OBTAINED RUSSIAN VISA ARE NOT REQUIRED TO SUBMIT IT;
7. The copy of the payment document confirming transfer of the application fee to NRU MGSU - HAS TO BE PAID IN RUBLES TO THE UNIVERSITY BANK ACCOUNT.

NOTE: Foreign citizens who apply for Bachelor's degree, Master's degree or PhD program must legalize their educational documents if they are issued in a foreign country, not in Russia. The legalization mark can be obtained only in a country of issue of educational documents. To consult on legalization of educational documents, please, contact staff of the office #201A of the International Education Center of NRU MGSU (phone number: +7 (499) 929.50.12).

The mentioned above documents have to be either e-mailed at [inter@mgsu.ru](mailto:inter@mgsu.ru) or submitted by a foreigner representative to the office #201A International Education Center of NRU MGSU.

## Application deadline:

July (for fall semester); November (for spring semester).

Classes start: fall semester - on September Bachelor's and Master's, on October Russian language programs; spring semester - February.

Periods of arrival and registration at NRU MGSU: fall semester - from August till September (Bachelor's, Master's and Russian language programs); spring semester - from January till February.

UPON ARRIVAL AT THE UNIVERSITY a foreign applicant must submit the following documents:

1. The original educational document of the Russian national standard or an original educational document with the awarded degree and an official transcript to it issued in a foreign country (the transcript should include: list of studied subjects, total amount of class hours, credits, number of study weeks, received final grades, explanation for grading system, list of practical trainings, course papers and final qualification theses):
  - the document of full secondary general education or secondary professional education - FOR THOSE APPLYING FOR BACHELOR or SPECIALIST DEGREE PROGRAM (from the first year of study);
  - the document of full secondary general education or secondary professional education, as well as academic transcript on unfinished higher education or diploma on the finished four-year education without awarding the Bachelor degree - FOR THOSE APPLYING FOR BACHELOR or SPECIALIST DEGREE PROGRAM (from the second or third year of study);
  - Bachelor or Specialist degree diploma - FOR THOSE APPLYING FOR MASTER DEGREE PROGRAM;
  - Master or Specialist degree diploma - FOR THOSE APPLYING FOR PhD PROGRAM.
2. The notarized copy of the educational document and the official transcript to it, legalized in the country of issue, including a copy of the page with the legalization mark - THE LAGALIZATION MARK IS NOT REQUIRED FOR THOSE, WHO APPPLY FOR THE RUSSIAN LANGUAGE PROGRAM or WHOSE EDUCATIONAL DOCUMENTS ARE ISSUED IN RUSSIA;
3. The Russian translation of the educational document and the official transcript to it, certified by translator;
4. the Certificate of successful completion of the pre-university training course or the pre-university department - NOT REQUIRED FOR THOSE WHO APPLY FOR THE PRE-UNIVERSITY LANGUAGE PROGRAM;
5. The copy of payment document confirming the transfer of the tuition fee for the academic year or for one semester - HAS TO BE PAID IN RUBLES TO THE UNIVERSITY BANK ACCOUNT;
6. The copy of the first page of foreign passport;
7. The copy of previously obtained Russian visa;
8. Medical certificate, certifying absence of medical contraindications for studying (including the results of blood test for Anti-HIV (AIDS) and Syphilis (VDRL); results of Chest X-Ray test), with Russian translation, certified by a translator of the Russian Consulate in home country or a certified translator in the Russian Federation;
9. Copy of health and life insurance valid in Moscow region;
10. 4 color photos sized 3x4 cm.

ENROLLMENT TO THE UNIVERSITY is carried out on basis of documents presented by a student (the list of documents, please, see above), successfully passed entrance exams (not required for those applying for the Russian language program and for 2nd, 3rd, 4th years of study of Bachelor or Specialist degree programs), signed study contract and paid tuition fee.

To consult on admission procedure for foreign citizens, please, contact the staff of the International Education Center of NRU MGSU.

A: 26, Yaroslavskoe avenue, office 201A, Moscow, Russian Federation

T: +7 (499) 929.50.12

E: [inter@mgsu.ru](mailto:inter@mgsu.ru)

Working hours: Monday through Friday from 9:00 a.m. till 13:00 p.m., from 2:00 p.m. till 18:00 p.m., Friday - till 4:30 p.m.



MOSCOW STATE (NATIONAL RESEARCH)  
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