

Moscow State University of Civil Engineering (National Research University)

Master's Degree Program: Structural Engineering

Degree: MSc in Civil Engineering

Language of Study: English

Duration of Study: 2 Years, 120 Credits

Mode of Study: On-Campus Full Time

Tuition Fee: 350 000 RUB per year

Head of the Program: Dr. Tamrazyan Ashot Georgievich, PhD in Technical Sciences, DSc in Engineering, Head of the Department of Reinforced Concrete and Masonry Structures

Program Coordinator: Dr. Kharun Makhmud, PhD in Technical Sciences, Department of Reinforced Concrete and Masonry Structures

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Introduction

Construction industry is the locomotive of any economy at all times. Working in this industry requires deep, complex and specialized knowledge. The contemporary world dictates new rules for the use of free space for construction, so the Structural Engineering program is distinguished by a large-scale diversification of the knowledge and skills studied. This engineering and at the same time creative profession requires a flexible, non-standard approach, but, at the same time, thoughtful and well-founded solutions for the construction of structures for both residential and non-residential purposes.

The Structural Engineering program is focused on training masters in the field of design and construction of buildings and structures for various purposes, research of structures under various types of loads and impacts. The program provides for an in-depth study of scientific, theoretical and methodological aspects in the field of studying the operation of structures and their design in accordance with the requirements of contemporary standards. It includes courses of the general scientific part (basic part), courses on the study of normative standardizing documentation (Russian and foreign), applied reliability issues, methods of experimental research of structures, as well as automated systems for the design of buildings and structures.

Program Advantages

The competitive advantages of the Structural Engineering program include:

- Comprehensive education with a wealth of knowledge in the field of design and construction of buildings and structures for various purposes.
- Knowledge of the specifics of various building and structures using modern calculation methods and computer modeling design allows graduates to work in any region of the world.

- Comprehensive development of students' research skills, the opportunity for their participation in the implementation of scientific projects in collaboration with leading enterprises in the construction industry.

- Lectures and master classes by invited scientists, joint creative projects and international conferences.

- International study groups allow to build students' own network of professional international contacts already at the university.

The acquired skills in developing the design and construction of buildings and structures will allow Structural Engineering graduates to carry out large-scale, highly technical projects.

Study Process

Study process of this master's degree program include:

- Lectures;
- Seminars;
- Course assignments;
- Individual study;
- Scientific research internship;
- Industrial internship.

Examples of Master's Theses Topics

- ✚ Stress-strain state of reinforced concrete slabs with different support conditions under static-dynamic loads;

- ✚ Stress-strain state of reinforced concrete beams when they are pushed by columns with a cross-sectional aspect ratio of more than two;

- ✚ Stress-strain state of reinforced concrete slabs taking into account nonlinear deformation of reinforced concrete;

- ✚ Study of the load-bearing capacity of corroded reinforced concrete retaining walls;

- ✚ Study of the effect of sudden removal of one of the load-bearing structures when designing the protection of a building from progressive collapse;

- ✚ Study of the static-dynamic strength of concrete at the initial level of cracking;

- ✚ Study of the stability of compressed reinforced concrete elements taking into account the rheological properties of concrete;

- ✚ Study of deflections of post-tensioned beamless slabs with different column grids;

- ✚ Limit state of compressed reinforced concrete elements under short-term destructive dynamic impact;

- ✚ Influence of inertia forces on the load-bearing capacity of beams along inclined sections;

- ✚ Influence of high-cycle loading on the stress-strain state of reinforced concrete bendable structures;

- ✚ Influence of non-load-bearing structures on the dynamic parameters of earthquake-resistant frame buildings under low-intensity loads.