VSB TECHNICAL UNIVERSITY OF OSTRAVA | FACULTY OF CIVIL ENGINEERING

Civil Engineering - Building Structures

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Faculty	Faculty of Civil Engineering
Type of study	Follow-up Master
Language of instruction	English
Code of the programme	N0732A260004
Regular period of the study	1,5 year
Cost	50,000 CZK per semester
Coordinating department	Department of Structures
Coordinator	prof. Ing. Radim Čajka, CSc.
Keywords	Bridges, Concrete Structures, Timber Structures, Steel Structures

About study programme

The Civil Engineering - Building Structures program is prepared as a 1.5 year master's program. It is focused on designing and implementing demanding structures of civil, industrial, engineering and transport structures. Theoretical disciplines in the field of strength and elasticity, finite element method and building dynamics are deepened. These findings are applied in the design and assessment of reinforced concrete, masonry, steel and timber structures and bridges.

Graduate's employment

A graduate of the follow-up Master's program Civil Engineering – Building Structures will find employment especially in companies and design offices designing civil, engineering and technological structures and bridges, or ensuring their operation, maintenance and reconstruction.
The graduate will be acquainted with the ways of designing structures of civil, industrial and technological constructions and bridges of reinforced concrete, prestressed concrete, but also of steel and wood-based materials.
The graduate will comply with the conditions for authorization in the fields of "Statics and Dynamics of Buildings", "Engineering Structures and Bridges", or "Testing and Diagnostics of Buildings" after meeting the requirements for professional practice.
The graduate will be theoretically equipped for follow-up university doctoral studies at the Faculty of Civil Engineering VŠB - TU Ostrava or at other building faculties in the Czech Republic and abroad.

Study aims

The aim of the study in the follow-up Master's program is to prepare the graduate for activities in the construction industry, for which he gains theoretical and professional knowledge and skills. Graduates will gain extended knowledge and skills in the areas of: designing, assessing and implementing steel, concrete, timber and composite structures; load on building structures; mathematical modeling of structural behavior, behavior of structures in extreme conditions, including fire resistance of structures and remediation and reconstruction of structures.

Graduate's knowledge

The graduates will be acquainted with the ways of designing structures of civil, industrial and technological structures and bridges of reinforced concrete, prestressed concrete, but also of steel and wood-based materials.

All subjects dealing with the design and assessment of building structures are inextricably linked to theoretical subjects in which graduates acquire practical skills to perform static and dynamic calculations based on Finite Element Method and the use of computer

technology, including modern software. The graduates will be acquainted with advanced modeling of the problems of statics and dynamics of building structures and also with the automation of static assessments. The course also includes subjects dealing with materials mechanics, probabilistic calculations in structures and demanding computational systems for special tasks.

Graduate's skills

Graduates of the follow-up Master's degree program Civil Engineering - Building Structures have the necessary skills in terms of using professional terminology and processing concepts, plans and technical documentation. They know the principles of the scientific methods of the field and can use them in a practical context. They can adopt and develop new theories and methods of the field, including their inclusion in application practice.

Graduate's general competence

Graduates of the follow-up Master's degree program Civil Engineering - Building Structures are able to use engineering approaches based on generally accepted computational methods and procedures, including standard and specialized software applications. They are able to evaluate new knowledge, taking into account the long-term societal implications of their use and to plan more extensive activities of a creative nature. They can acquire new expertise, skills and competences through their own creative activities. They will be able to independently carry out complex activities within the aforementioned professional areas and organize and lead implementation teams to solve complex large-scale contracts. They will be able to independently plan, implement, organize and decide on construction activities and work, whether directly in the construction industry or in design and construction practice.

Study curriculum

- form Full-time (en)