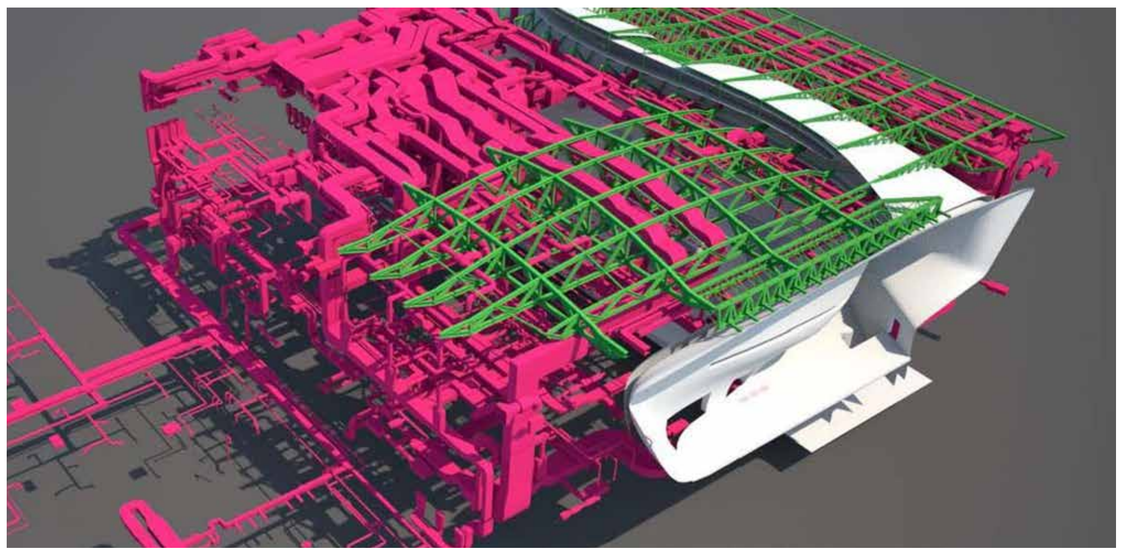
Master's Programme in

Building Technology

The Master's Programme in Building Technology offers students a comprehensive academic and professional knowledge of the diffrerent diciplines within civil and structural engineering.



Civil engineering plays a key role in creating safe and healthy build infrastructures, which are essential elements of everyday life and well-being. The Master's Programme in Building Technology deals with design, construction, use, and maintenance of buildings and structures such as bridges, earth-retaining walls, reservoirs, canopies, dams and towers that are an essential and valuable part of the build environment. It involves structural engineering, building physics, construction management, and concrete technology including also topics related to the operation of buildings as energy aspects of building services technology, indoor air quality, and fire safety engineering.

The target is to provide a robust theoretical basis as well as practical skills for a professional career and postgraduate studies within the fields of the programme. Emphasizing energy efficiency the programme allows for different professional roles of engineers for the needs of modern society covering all phases of a building process from design and analysis to construction, energy efficient operation, and renovation process.

Master's thesis (30 cr)

Elective studies (30 cr)

Advanced studies (30 cr)

Advanced studies (30 cr) are composed of 6 courses of 5 cr selected freely from the listed courses. The courses can also be used as elective studies.

Construction and maintenance

- Building information modelling in construction
- Concrete technology
- Experimental methods in building materials
- Operations management in construction
- Maintenance and repair of structures
- Production technology of concrete structures
- Strategic management of construction business

Indoor environment quality

- Applied building physics and design
- Design of energy efficient buildings
- Indoor air quality
- Indoor environment technology
- Fire dynamics and simulation
- Fire risk and evacuation analysis

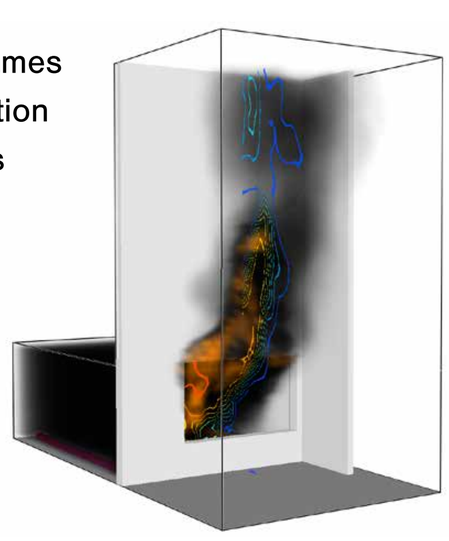
Structural Engineering

- Advanced finite element methods in civil engineering
- Design of structures against dynamic loadings
- Engineering design exercises
- Prestressed and composite concrete structures
- Reinforced concrete structures
- Steel composite structures
- Steel structures
- Structural mechanics: material modelling in civil engineering
- Structural mechanics: plate and shell structures
- Structural mechanics: stability of structures
- Wood composite structures
- Wood structures

Common studies (30 cr)

Obligatory courses (5 cr each)

- Structural Mechanics: Beams and Frames
- Engineering Computation and Simulation
- Structures from Concepts to Products
- Building Materials Technology
- Construction Management
- Heat and Mass Transfer in Buildings



Aalto University
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