Master Program Structural Engineering and Design

Faas Moonen
Structural design focuses on:

The knowledge and application of

(1) structural materials,

(2) optimizing design and construction

(3) methods to solve mechanical problems.
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The knowledge and application of

(1) structural materials,

(2) optimizing design and construction

(3) methods to solve mechanical problems.
Structural design prepares for:

A profession as structural engineer, researcher or construction manager.
Courses and Projects
Courses **SD**

Core courses: 25 ECTS  
Specialization courses: 30 ECTS  
Free electives: 20 ECTS  
Graduation project: 45 ECTS  

Total: 120 ECTS
Core Courses **SD**

- Advanced *steel* and *aluminium* structures
- Advanced *concrete* structures
- *Resource efficient* structural design
- *finite elements* method 1 – energy methods and linear simulations
- *Stability of structures*

*5 COURSES – 5 ECTS (25 IN TOTAL)*
Specialization courses (1)

- Design project high rise buildings (10 ects)
- Design project: *Large span* structures (10 ects)
- Research projects (10 ects)
- Geotechnics, soil mechanics + seismic design (5 ects)
- Structural design: Capita Selecta (safety/research) (5 ects)
Specialization courses (2)

- Structural design with glass (2.5 ects)
- Digital design & manufacturing (2.5 ects)
- Advanced Timber structures (5 ects)
- Finite element method 2, non-linear and multi-scale simulations (5 ects)

9 COURSES – 55 ECTS in total (pick 30 ects)
Workshop

- Structural laboratory
- Internationally recognized for research on large structures
Subject

- 3D Printed
- Steel
- Glass
- Masonry
- Timber
- Aluminium
- Large structures
- Adaptive structures
- And many others...
Master thesis

Example: Research
Master project

*Example: Research*
Master project

Example: Design

Stadium, structure based on the Geiger cable dome principle (Tensegrity structure)

Student: Marc Nijenhuis
Master thesis

Example: Research

axially loaded with intended imperfection + experimental verification on 3D-printed polypropylene

Student: Derk Bos
Double track: SED + AUDE