

Course Specifications

From the academic year 2017-2018 up to and including the

Construction of Buildings II (E711054)

Course size (nominal values; actual values may depend on programme)

Credits 3.0 Study time 90 h Contact hrs 30.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2) Dutch lecture 30.0 h

Lecturers in academic year 2018-2019

Belis, Jan TW14 lecturer-in-charge

Offered in the following programmes in 2018-2019

	crdts	offering
Bachelor of Science in Engineering Technology (main subject Civil Engineering Technology)	3	A
Bachelor of Science in Civil Engineering Technology	3	A
Preparatory Course Master of Science in Civil Engineering Technology	3	A
Preparatory Course Master of Science in Land Survey Engineering Technology	3	A

Teaching languages

Dutch

Keywords

Load-bearing Structures, Global Stability, Concepts, Conceptual Support, Building Materials, Foundations, Building Components, Modulation, Construction Nodes and Details, Execution Techniques, Practical Examples.

Position of the course

Several approaches of load-bearing structures in buildings are analysed based on functional requirements, physical laws, technical requirements, etc. to result in a principally correct concept through integrating synthesis. A solution is found step by step by logical reasoning, and taking into account other building-related aspects, such as environment, economy, aesthetics and comfort). Principal concepts and simplified expressions aim at a fast and efficient support of the design concept and detailing. A myriad of illustrative practical examples is presented to make the treated principles, concepts, materials and techniques more tangible and concrete.

Contents

- Basic structural concepts, loads on structures, global stability concepts of buildings, high-rise buildings
- Terrain, soil, foundations, cellars
- Masonry structures
- Concrete structures
- Timber structures
- Steel structures
- Glass structures

Initial competences

Ontwerptools

Final competences

- 1 Analyse the horizontal and vertical global stability concept of buildings.
- 2 Understand and explain structural concepts and the functioning and detailing of load-bearing structures in buildings.
- 3 Master basic principles regarding terrain, soil, cellars and choice of foundations.
- 4 Name and recognise a number of internationally renowned engineering offices and structural designers.

- 5 Estimate quickly the dimensions of a number of important building components through simplified formulas and/or rules of thumb.
- 6 Reason and argument about the use of steel, timber, concrete, masonry and glass as materials for load-bearing structures.
- 7 Propose appropriate load-bearing concepts and according construction detailing.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture

Learning materials and price

Dutch syllabus, ca. 30 EUR

References

Addis, B. Building: 3,000 Years of Design, Engineering and Construction, Phaidon
Bone, A. Basisboek bouwkunde, ThiemeMeulenhoff
Hegger, M, Auch-Schwelk, V, Fuchs, M, Rosenkranz, T. Construction materials manual, Birkhauser
Herzog, T, Natterer, J, Schweizer, R, Volz, M, Winter, W. Timber Construction manual, Birkhauser
Schittich, C, Staib, G, Balkow, D, Schuler, M, Sobek, W. Glass Construction manual, Birkhauser
Schulitz, H, Habermann, K, Sobek, W. Steel construction manual, Birkhauser

Course content-related study coaching

The lecturer is available before and after lectures.

Evaluation methods

end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions, written examination with multiple choice questions

Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions, written examination with multiple choice questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

Written examination with open questions, possibly also a part with multiple choice questions

Calculation of the examination mark