

Conceptual Design (E044902)

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

Credits 5.0

Study time 150 h

Course offerings and teaching methods in academic year 2024-2025

A (semester 2)

English

Gent

lecture

group work

Lecturers in academic year 2024-2025

De Pauw, Bart

TW15

lecturer-in-charge

Offered in the following programmes in 2024-2025

[Master of Science in Civil Engineering](#)

crdts

5

offering

A

Teaching languages

English

Keywords

construction concept, requirements programme, holistic view

Position of the course

Experiencing the evolution from an analytical design to the development of a holistic concept, with the integration of form, function and meaning of a structure. The followed method is based on the passing of conceptuel methods, mathematical and fysical modelling and their experimental evaluation. This method is founded on "see and feel" and "touch and feel".

Contents

- Analytical concept development: Involvement of a concept, Analytical method for concept development
- Towards the holistic concept: Sources of concepts, Horizontal and linear structures, Making schemes for numerical models and resources, Vertical structures, Experimenting with numerical and physical models
- Generating concepts: Coverings, Developing an integrated concept
- assessment of the behaviour of a structure, designed oneself: testing of a physical model

Initial competences

Mechanics of materials; Structural analysis I, II and II; Reinforced and prestressed concrete.

Final competences

- 1 Determine the list of requirements for a structure; develop basic concepts; assess experimentally physical model
- 2 Derive requirements for a concept, developed one-self; design a numerical model; use advanced software for structural analysis; build a physical model of an advanced concept; develop original concepts for structures
- 3 Give sufficient attention to generate alternatives for structures; persuing originality and additional value in basic concepts

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

Group work, Lecture

Study material

None

References**Course content-related study coaching**

The teacher is available before and after courses.

Assessment moments

end-of-term and continuous assessment

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

Oral assessment open-book

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

Oral assessment open-book

Examination methods in case of permanent assessment

Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

During examination period: oral open-book exam, written preparation. During semester: graded workshop results (with report as end result (group work)).
Frequency: 3 guided workshops.

Calculation of the examination mark

Special conditions: 80% non-periodic evaluation and 20% periodic evaluation.