

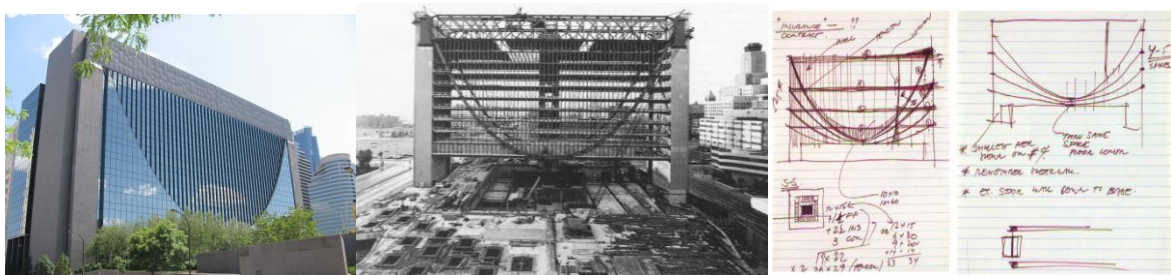
VSMN15, Integrated Design: Structural Design – Architectural Design, 7,5 credits

AAHN10, Integrated Design: Architectural Design – Structural Design, 7,5 credits

Course programme spring 2020

Introduction

The goal is to establish a common conceptual framework for the construction, optimization and architectural expression, in the interaction between engineers and architects during the last part of their training. The course is designed to run as a number of projects in which both engineers and architects will contribute to shaping, based on their individual professionalism. Some elements might be carried out individually by various student categories, but the key passages to be implemented jointly.



Course lay out

The course consists of a number of *lectures* introducing various examples, building a shared understanding of how we can consider structures. This common understanding also forms the basis for a dialogue-shaped design process starting from architects and engineers' skills.

Architects and engineers will work together with one smaller task ("Task A") and one larger project, which relate to the Architect's Studio Projects and will be divided into three assignments ("Assignment 1 – 3").

You will work in groups, with both engineers and architects, and consultation takes place in these groups. Consultation is scheduled and some consultation is compulsory, see next page.

Examination and compulsory attendance

The examination of the course is based on the active participation in the tasks and in the consultation. This means that all group members must be active and contribute to the groups' work. Thus, all students must attend at least 75% of the scheduled lectures, presentations and compulsory consultations (and attend all presentations done by their group). All students must participate in and actively contribute to all compulsory tasks and projects, i.e. tasks A + the project assignments 1 – 3. To verify the active participation, attendance lists will have to be signed at each lecture/presentation. Notes will be taken by the teachers during consultation, in order to document the activity of all group members. During presentations/critique all members of a group must be prepared to answer for the complete group. Grading in the course is pass/no pass (godkänd/underkänd). ECTS-grading is not used, see [LTH-webpage](#).

Course schedule

| Week | Day | Date | Start | End | Topic/Activity | Room | |
|------|-----|------------|-------|-------|---|--------|-------------|
| 4 | Tue | 2020-01-21 | 08:00 | 10:00 | Course introduction, course admin and introduction to Task A (ES, CM, AvB) | A:B | Task A |
| 4 | Tue | 2020-01-21 | 13:00 | 17:00 | Work with Task A, short presentation and feedback. (ES, CM, AvB) | A:3011 | |
| 5 | Tue | 2020-01-28 | 08:00 | 10:00 | Lecture 1, Intro to Project Assignment 1, CM, ES | A:B | Projects A1 |
| 5 | Tue | 2020-01-28 | 13:00 | 17:00 | Work with Assignment 1 | Studio | |
| 6 | Tue | 2020-02-04 | 08:00 | 10:00 | Lecture 2. Timber projects, timber structures (AvB, ES) | A:B | |
| 6 | Tue | 2020-02-04 | 13:00 | 17:00 | Work with Assignment 1, consultation, compulsory (ES, AvB) | A:3011 | |
| 7 | Tue | 2020-02-11 | 08:00 | 10:00 | Lecture 3. Conceptual Design Guest Lecture by Martin Fröderberg (Tyréns AB) | A:B | |
| 7 | Tue | 2020-02-11 | 13:00 | 17:00 | Work with Assignment 1, consultation available (ES, AvB) | Studio | |
| 8 | Tue | 2020-02-18 | 08:00 | 10:00 | Lecture 4. Timber structures/Forces in structures (ES) | A:B | Projects A2 |
| 8 | Tue | 2020-02-18 | 13:00 | 17:00 | Critique Assignment 1 (ES, CM, AvB) | Studio | |
| 9 | Tue | 2020-02-25 | 08:00 | 10:00 | Lecture 5. Glass as a load bearing material. Guest lecture by Kent Persson, (LTH). Intro Assignment 2 | A:B | |
| 9 | Tue | 2020-02-25 | 13:00 | 17:00 | Work with Assignment 2, consultation, available (ES, AvB) | A:3011 | |
| 10 | Tue | 2020-03-03 | 08:00 | 10:00 | Work with assignment 2 | Studio | Projects A3 |
| 10 | Tue | 2020-03-03 | 13:00 | 17:00 | Critique Assignment 2 (ES, CM, AvB) | A:3011 | |
| 13 | Tue | 2020-03-24 | 08:00 | 10:00 | Intro Assignment 3; Work with Assignment 3 | Studio | Projects A3 |
| 13 | Tue | 2020-03-24 | 13:00 | 17:00 | Work with Assignment 3 | Studio | |
| 14 | Tue | 2020-03-31 | 08:00 | 10:00 | Work with Assignment 3 | Studio | |
| 14 | Tue | 2020-03-31 | 13:00 | 17:00 | A3 consultation, compulsory (ES, CM, AvB) | A:3011 | |
| 15 | Tue | 2020-04-07 | 08:00 | 10:00 | Work with A3, consultation available | Studio | |
| 15 | Tue | 2020-04-07 | 13:00 | 17:00 | Work with A3, consultation available | Studio | |
| 18 | Tue | 2020-04-28 | 13:00 | 17:00 | Final critique Assignment 3 (ES, CM, AvB) | A:3011 | |

Deadlines

The work should be handed in by uploading to shared Dropbox folder no later than:

Task A – Tuesday, 21nd of January, 24:00 (Task finalized during the day).

Studio projects, Assignment 1 – Monday 17th of February, 24:00

Studio projects, Assignment 2 – Tuesday 3rd of March, 12:00

Studio projects, Assignment 3 – Monday 27th of April, 24:00

Teachers

Erik Serrano (ES), erik.serrano@construction.lth.se

Christer Malmström (CM), christer.malmstrom@arkitektur.lth.se

Alex van de Beld (AvB), Alex@albsurroundings.com

+ Guest teachers

Relevant reading for inspiration

Conceptual Structural Design, Olga Popovic Larsen and Andy Tyas, ISBN 0-727732

Form and forces: designing efficient, expressive structures, Edward Allen and Waclaw Zalewski.

Shell Structures for Architecture - Form Finding and Optimization, Sigrid Adriaenssens et al.

Engineering a new Architecture, Tony Robin ISBN 0-300-06116-1

Finding Form, Frei Otto, Bodo Rash, ISBN 3-930698-66-8

Structure & Architecture, Angus J Macdonald, ISBN 0-7506-4793-0

Structural Order in Space, Ture Wester, ISBN 87-981698-0-7

Building Structures, Malcolm Millais, ISBN 0-419-21970-6