



Course syllabus

Faculty of Technology

Department of Building Technology

4BY108 Stabilisering av byggnader och takkonstruktioner i trä, 7,5 högskolepoäng

Lateral stability of buildings and roof structures of timber, 7.5 credits

Main field of study

Civil Engineering

Subject Group

Building Technology

Level of classification

Second Level

Progression

A1N

Date of Ratification

Approved by Faculty of Technology 2014-12-02

The course syllabus is valid from autumn semester 2015

Prerequisites

General entry requirements. Bachelor of Science in building technology or a corresponding subject. Applicants who do not meet this requirement may be validated to be eligible by showing that they have the equivalent knowledge through work experience. In such a validation process two years of relevant work experience is equivalent to one year of university study at undergraduate level.

Objectives

After completing the course the student is expected to:

- have knowledge about the mode of action of wood-based structural elements subjected for compressional forces
- have knowledge about the stabilization of the entire wooden structures as well as parts of wooden structures such as trusses and system of trusses
- have the ability to design wood structures including the stabilization of these
- have an understanding of the latest developments in the field of stabilization
- within their own profession be able to apply, deepen and share the skills acquired.

Content

The course comprises the following elements:

- stabilization of the wooden structures in general,
- principles for overall stabilization of roof structures,
- the background to the design codes and load calculations,
- the use of wood as a construction material; the influence of the strength class,

- climate and load duration,
- design of timber elements subjected for compression but also tension and bending,
- design and mode of action of mechanical timber joints,
- Introduction to design in the serviceability limit state.

Type of Instruction

The course consists of lectures, laboratory exercises, project work and field trips. Teaching takes place at physical meetings as well as through various web tool and through self-study.

Examination

The course is assessed with the grades Fail (U) or Pass (G).

Assessment is based on submitted reports, presentations of laboratory work and exercises. In order to pass the expected learning objectives to be achieved.

Course Evaluation

A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Other

The course is given in Swedish, but English literature may occur. Costs for student travel, field trips and the like may be added.

Required Reading and Additional Study Material

Required reading

Källsner, Bo (2015) *Häfte kring totalstabilitet hos takkonstruktioner av trä*, Linnéuniversitetet

Källsner, Bo och Girhammar, Ulf Arne (2008) *Horisontalstabilisering av träregelstommar Plastisk dimensionering av väggar med träbaserade skivor*, SP Rapport 2008:47

Crocetti, Roberto (ed.) (2015) *Limträhandboken*, Stockholm: *Svenskt Trä*

Bergkvist, Per (ed.) (2011) *Design of timber structures*. Stockholm: Swedish Forest Industries Federation.

Johansson, Marie (2012) *Övningar i träbyggnadsteknik*, Linnéuniversitetet.

Reference literature

SS-EN 1990: *Eurokod – Grundläggande dimensioneringsregler för bärverk*

SS-EN 1991-1-1: *Laster på bärverk – Del 11: Allmänna laster – Tunghet, egentynngd, nyttig last för byggnader*

SS-EN 1991-1-3: *Laster på bärverk – Del 13: Allmänna laster – Snölast*

SS-EN 1991-1-4: *Laster på bärverk – Del 14: Allmänna laster – Vindlast*

SS-EN 1995-1-1: *Eurokod 5: Dimensionering av träkonstruktioner*