Linnæus University

Jnr: UGA 2013/370-3.1.2

Course syllabus

Faculty of Technology
Department of Building Technology

4BY100 Bärande träkonstruktioner, 7,5 högskolepoäng
Load bearing timber structures, 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 2013-03-12
The course syllabus is valid from autumn semester 2013

Prerequisites
General entry requirements. Bachelor of Science within the field of civil engineering. Applicants who do not have the formal requirements may be validated as qualified by the program directors by showing that they have relevant working experience. Two years relevant working experience equal one year studies at university level.

Objectives

After this course students should:

- have an understanding for the basis of structural engineering and load combinations
- have an understanding for the behaviour of structures in timber and engineered wood products
- have the ability to design advanced timber structures including, stabilisation, advanced glulam beams, connections, deflections and vibrations
- be able to design and analyse advanced timber structures
- have an insight into the newest research within the field
- have the knowledge to apply, deepen and share the competence achieved.

Content
The course includes:

- the background to the design standards and load combinations
- basic understanding of wood as a structural material; grading, influence of service class and load duration
- design of timber members subjected to tension, compression or bending
- design of curved beams and beams with varying depth
- stabilisation of timber structures
- timber connections behaviour and design
- springiness, vibrations and deflections.

Type of Instruction
The teaching consists of lectures, exercises, laboratory work, project work and study visits. Teaching is done at physical meetings as well as using web tools and by home studies.

Examination
The course is assessed with the grades Fail (U) or Pass (G).
The assessment of student performances may be written and oral. The assessment will be based on submitted reports, on laboratory work and on exercises. To pass the course the objectives should be achieved.

Course Evaluation
A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed by the coordinating department.

Other
The course is given in Swedish, but literature in English may occur. Costs for travel, field trips etc. may apply.

Required Reading and Additional Study Material
Required reading
Crocetti, Roberto (ed.) (2013). 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
EN 1990: Eurokod – Grundläggande dimensioneringsregler för bärverk
EN 1991-1-1: Laster på bärverk – Del 1-1: Allmänna laster – Tunghet, egentyngd, nyttig last för byggnader
EN 1991-1-3: Laster på bärverk – Del 1-3: Allmänna laster – Snölast
EN 1991-1-4: Laster på bärverk – Del 1-4: Allmänna laster – Vindlast
EN 1995-1-1: Eurokod 5: Dimensionering av träkonstruktioner – Del 1-1. Allmänt – Gemensamma regler och regler för byggnader