Faculty of Health, Science and Technology
Construction Engineering

Syllabus

Course Approval
The syllabus was approved by the Faculty Board of Health, Science and Technology on 18 February 2014 , and is valid from the Autumn semester of 2014 at Karlstad University.

Course Code: BYGB21
Engineering Design: Timber Structures, 5.0 ECTS Credits
(Träkonstruktion, 5.0 Swedish credit points)
Degree Level: Bachelor
Progressive Specialisation: G1F (First cycle, has less than 60 credits in first-cycle course/s as entry requirements)

Language of Instruction
Swedish

Prerequisites
House Building Technology 7.5 ECTS cr (incl. calculation of cumulative loads according to the Euro codes)
Strength of Materials for Building Construction 7.5 ECTS cr or equivalent

Major Field of Study
BYA (Building Technology)

Learning Outcomes

The aim of the course is to introduce students to construction calculation and that students develop basic knowledge of timber construction elements and skills to design and dimension simple timber elements.

For the grade 3, students should, on completion of the course, be able to:
- give an account of the calculation principles and theoretical relationships applied in the course,
- correctly perform calculation of cumulative loads and calculate the dimensions of simple timber designs with given conditions,

For the grades 4 or 5, students should, on completion of the course, in addition be able to:
- demonstrate further knowledge and skills in calculation of cumulative loads and timber design dimensioning,
- perform more complex calculations and make reasonable assumptions and controls.

Content and Form of Instruction

The course deals with the preconditions for dimensioning such as partial coefficient method, calculation of cumulative loads, dimensioning and design principles, and dimensioning in accordance with current norms and standards for the material timber.

The course comprises the following components:

- design calculation norms
- load and calculation of cumulative loads
- the properties of timber
- bending moment capacity
- deformation
- transverse force capacity
- strain and stress capacity
- dimensioning for fire resistance
- nail joint
- bolted joint

Instruction is in the form of lectures, calculation workshops, and field trips.

Reading List

See separate document.

Examination

Assessment is continuous for the grade 3 and based on written exams. For the grades 4 or 5, assessment is based on a final written exam.

Grades

One of the grades 5 (Distinction, 4 (Merit), 3 (Pass), or U (Fail) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The course BYGB21 cannot be included in the same degree programme as the course BYGB17.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.

Karlstads universitet 651 88 Karlstad, Sweden
Tel +46-54-700 10 00 Fax +46-54-700 14 60
information@kau.se www.kau.se