AF234V Wood durability 7.5 credits

Träbeständighet

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

The Built Environment

Specific prerequisites

Degree of Bachelor or Degree of Bachelor of Science in Engineering in civil Engineering, building Technology, architecture, forestry and wood technology or similar disciplines.

Intended learning outcomes

On completion of the course, the course participant should be able to:

- Explain the factors that influence durability of wood-based materials.
- Explain the difference between natural durability and wood protection treatments.
- Describe the importance of the durability for sustainability, life cycle and service life and

how these aspects can be influenced by means of wood protection treatments.
• Explain how treatments for decreased moisture absorption differ from rot resistance.
• Describe the most important methods to improve the durability of wood.
• Describe principles that contribute to choosing suitable wooden materials.
• Describe the causes of, and principles of design based wood protection and how this can be integrated in design and architecture in wood.
• Describe the bases for the different classes according to the NTR system.
• Describe strategies for service life based design.
• Based on given preconditions be able to suggest and design materials and design solutions for good durability of a wooden building.

Kursinnehåll

Kursen fokuserar på trä som ett förnybart byggnadsmaterial och på hur det kan behandlas för
god beständighet. I kursen ges en överblick över trämaterialets förutsättningar till beständighet och träbyggnaders förutsättningar för god beständighet och lång livslängd.

Kursen behandlar trä som byggmaterial från mikroskopisk nivå till applikationer i bärande konstruktioner och arkitektur, konsekvenser av nedbrytande faktorer vid användning i utomhusmiljö och vattenkontakt, förutsättningar för upprätthållen funktion över tid och hur trä kan behandlas och utformas för att möjliggöra detta.

Kursen går därutöver igenom underhåll under drift och förvaltning, besiktning samt den lagstiftning som gäller för beständighet och beständighetsklassade träprodukter.

Course contents

The course focuses on wood as a renewable building material and on how it can be treated for good durability. The course offers an overview of the preconditions of the wooden material, its durability properties and the preconditions for good durability and long service life of timber structures.

The course covers wood as building material from microscopical level to applications in load carrying designs and architecture, consequences of deterioration factors for uses in outdoor environment, water contact and preconditions for maintaince over time and how wood can be treated and designed to facilitate this.

In addition the course goes through during operation, administration and inspection and the legislation that applies to durability and durability classified wood products.

Examination

- PRO1 - Project assignment, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercise, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.
- The examiner may apply another examination format when re-examining individual students.

- If the course is discontinued, students may request to be examined during the following two academicyears.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.