

Wood - Realisation

Programme course

6 credits

Träteknik - Produktframtagning

TMKU02

Valid from: 2021 Spring semester

Determined by

Board of Studies for Mechanical Engineering
and Design

Date determined

2020-09-29

Main field of study

Product Development, Mechanical Engineering

Course level

First cycle

Advancement level

G2X

Course offered for

- Bachelor of Science in Mechanical Engineering
- Master of Science in Design and Product Development
- Master of Science in Industrial Engineering and Management - International
- Master of Science in Industrial Engineering and Management
- Master of Science in Mechanical Engineering
- Master of Science in Energy - Environment - Management

Prerequisites

Manufacturing Technology, Production Engineering or similar.

Intended learning outcomes

The aim of this course is for the student to obtain thorough knowledge of wood production and how to manufacture a wooden product. The student should know how different wood materials are processed, joined and surface treated and also the new requirements for production adjustments of the new wood-based materials. The student should know the various manufacturing and automation processes that are used in wood industry such as drying, sawing, laminating, bending, molding, etc. It is important that the student gets a good picture of Swedish wood manufacturing industry, how it works and what challenges it faces, both in terms of large-scale and small-scale production. The student should also be able to argue for and against wood compared to other materials when looking at production processes and energy consumption, flexibility and lead times, tooling costs, finish treatments, etc.

Course content

The course consists of some interconnected parts:

Wood products – Material selection, mechanical requirements, joining methods, adhesives and surface treatment.

Wood production - machining, sanding, lacquering, bending and mold-forming.

Swedish Wood Manufacturing Industry - Orientation, products, exports and imports, its development and importance for Sweden.

Why wood? - How does the production methods of wood differ compared to other materials?

Theory in the subjects above will also be sought for individually and presented both orally and in seminar reports. Then students will then immerse themselves into a subject that they present to the other students. Some of the lectures will be performed by experts from industry and other relevant organizations.

The course includes a project where the students will manufacture a specific product based on given conditions. The goal for the project is a complete product and to this a report describing the industrial production of the same product. It is of great importance in this course that the student should learn by practice and in addition to this relate to industrial manufacturing and theoretical aspects.

Teaching and working methods

The course consists of lectures in combination with laboration, study visits and a project work. Resources such as the material library and the wood workshop will be used in the laboration as well as in the project. The course is offered to many different programs which allow a natural training in communication between professionals/engineers as well as a scope for exciting results and depth of the projects.

Examination

LAB1	Laboratory work	U, G	1 credits
PRA1	Project assignment	U, 3, 4, 5	5 credits

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses

TMKT81 - Wood – Realisation
TMKA04 - Wood – Innovation

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is Swedish, the course as a whole or in large parts, is taught in Swedish. Please note that although teaching language is Swedish, parts of the course could be given in English. Examination language is Swedish.
- If teaching language is Swedish/English, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English (depending on teaching language).
- If teaching language is English, the course as a whole is taught in English. Examination language is English.

Other

The course is conducted in a manner where both men's and women's experience and knowledge are made visible and developed.

The planning and implementation of a course should correspond to the course syllabus. The course evaluation should therefore be conducted with the course syllabus as a starting point.

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Mikael Axin

Examiner

David Eklöf

Education components

Preliminary scheduled hours: 60 h

Recommended self-study hours: 100 h

Course literature

Other

See suggestions on the course web site.