

Wood - Realisation

Programme course

6 credits

Träteknik - Produktframtagning

TMKT81

Valid from: 2017 Spring semester

Determined by

Board of Studies for Mechanical
Engineering and Design

Date determined

2017-01-25

Main field of study

Mechanical Engineering

Course level

Second cycle

Advancement level

G2X

Course offered for

- Mechanical Engineering, B Sc in Engineering
- Design and Product Development
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

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 lecturers 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

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

Grades

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

Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Peter Hallberg

Examiner

David Eklöf

Course website and other links

<http://www.iei.liu.se/machine/courses/tmkt81>

Education components

Preliminary scheduled hours: 0 h

Recommended self-study hours: 160 h

Course literature

Additional literature

Books

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.