



## Course syllabus

Faculty of Technology

Department of Forestry and Wood Technology

1TS043 Träbaserade kompositmaterial, 7,5 högskolepoäng

1TS043 Wood-based Composites, 7.5 credits

### **Main field of study**

Forest and Wood Engineering

### **Subject Group**

Forest Science

### **Level of classification**

First Level

### **Progression**

G1F

### **Date of Ratification**

Approved by Faculty of Technology 2019-06-10

The course syllabus is valid from spring semester 2020

### **Prerequisites**

Forest products, 7.5 credits or equivalent.

## Objectives

After completing the course, the student shall be able to:

- describe lignocellulosic raw materials and adhesives used in wood composites and match components in relation to properties
- discuss sustainability aspects on use of natural fibers and renewable adhesives in wood composites
- explain production technologies of different wood composites
- analyse the importance of different properties of finished products in relation to their performance and environmental profile
- be familiar with manufacturing and testing of wood composites

## Content

The course comprises the following elements:

- Raw materials for wood composites
- Traditional and new sustainable adhesives for wood composites
- Production technologies of wood and natural fiber composites

- Properties of raw materials and finished products
- Sustainability issues of wood composites industries
- Production of wood composites and testing in the laboratory

## Type of Instruction

The teaching consists of lectures, laboratory work and field trips. Information on compulsory items is given in the schedule at the beginning of the course. For distance students, a computer with internet access is necessary. A headset with microphone is also required. In certain cases, distance students need to be physically present in the campus on specific dates instructed by the course coordinator.

## Examination

The course is assessed with the grades U, 3, 4 or 5.

The examination is based on two course parts- laboratory report (3.5 credits, P/F) and written exam (4.0 credits, F,3,4,5).

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.\*\*\*\*

## Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

## Other

The student is to be informed about the grade criteria for the course by the start of the course at the latest. Some elements of the course may entail costs defrayed by the course participant.

## Required Reading and Additional Study Material

Forest Products Laboratory (2010) Wood handbook-Wood as an engineering material. General Technical Report FPL-GTR-190. Madison, USA. 508 page.

Rowell M Roger (2005) Handbook of wood chemistry and wood composites. CRC Press, Florida, USA. ISBN: 0-8493-1588-3. 487 pages.

Stokke D Douglas, Wu Qinglin, Han Guangpin (2014) Introduction to wood and natural fiber composites. John Wiley & Sons Ltd., West Sussex, UK. ISBN: 978-0-470-71091-3. 287 pages.

Presentations and documents will be distributed during lectures, exercises and educational visits.