Forests, wood, and carbon

INTRODUCTION 24.4.2023

CHEM-C2740 5 cr

Aalto University
School of Chemical
Engineering

Welcome!

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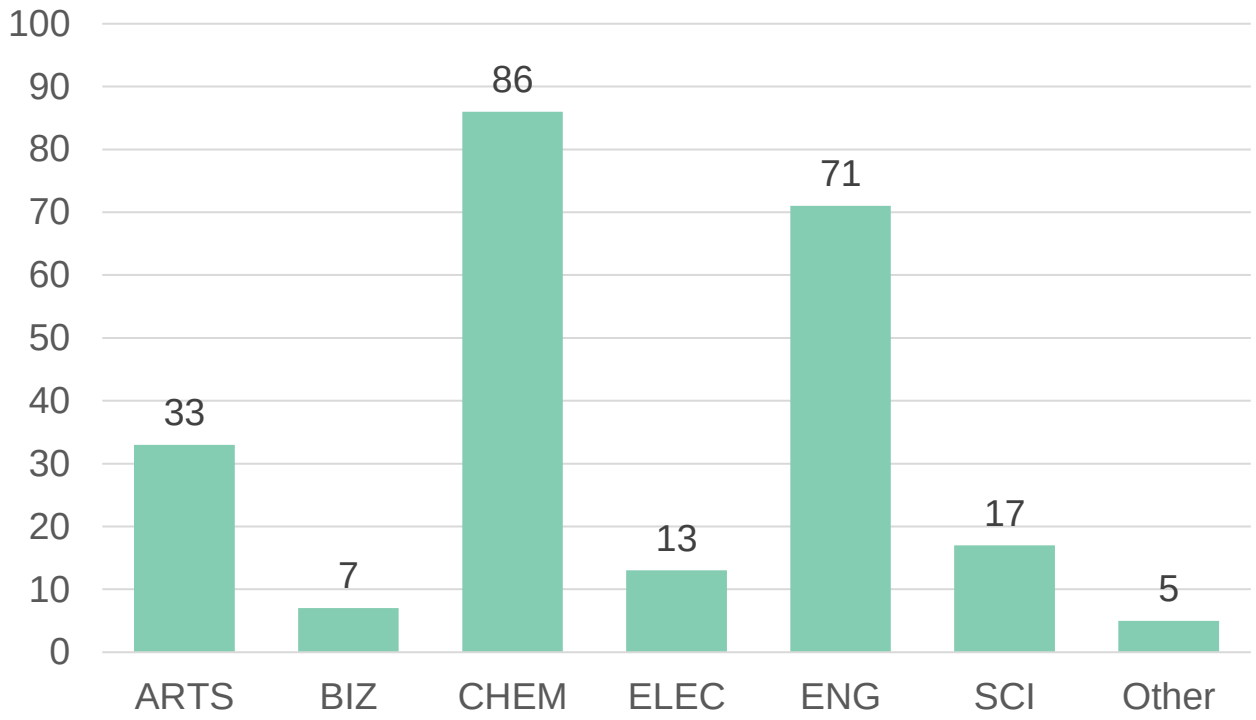
Students by department

24.4.2023

Altogether **232** students



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CHEM-C2470 / 5 CR

Forests, wood, and carbon

ONLINE course

- Students will learn about the role of forests in the carbon cycle and carbon storage potential of wood products.
- The basic structure of wood is presented with links to its properties such as appearance, dimensional stability, and strength.

24.4.–9.6.2023

No pre-requisites
For students in all fields
Proceed at own pace!
Registration in Sisu by 1.5.2023

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Course description and registration in Sisu:

After the course, students are able…

- to describe the role of **forests in the carbon cycle**
- to calculate the **carbon storage potential of wood**
- are able to list the common work phases of **life-cycle analysis**
- to describe the basic macro-level **structure of wood** and the basics of wood grain orientation
- to describe how moisture influences **wood dimensional changes and strength** at the cell-level
- to link the influence of grain angle, knots and other natural features of wood on its **movement, appearance, and mechanical** properties
- to list the most common **wood products** and their typical applications

How to pass the course?

Mon 24.4.2023 at 9:15-10 Introduction @Zoom

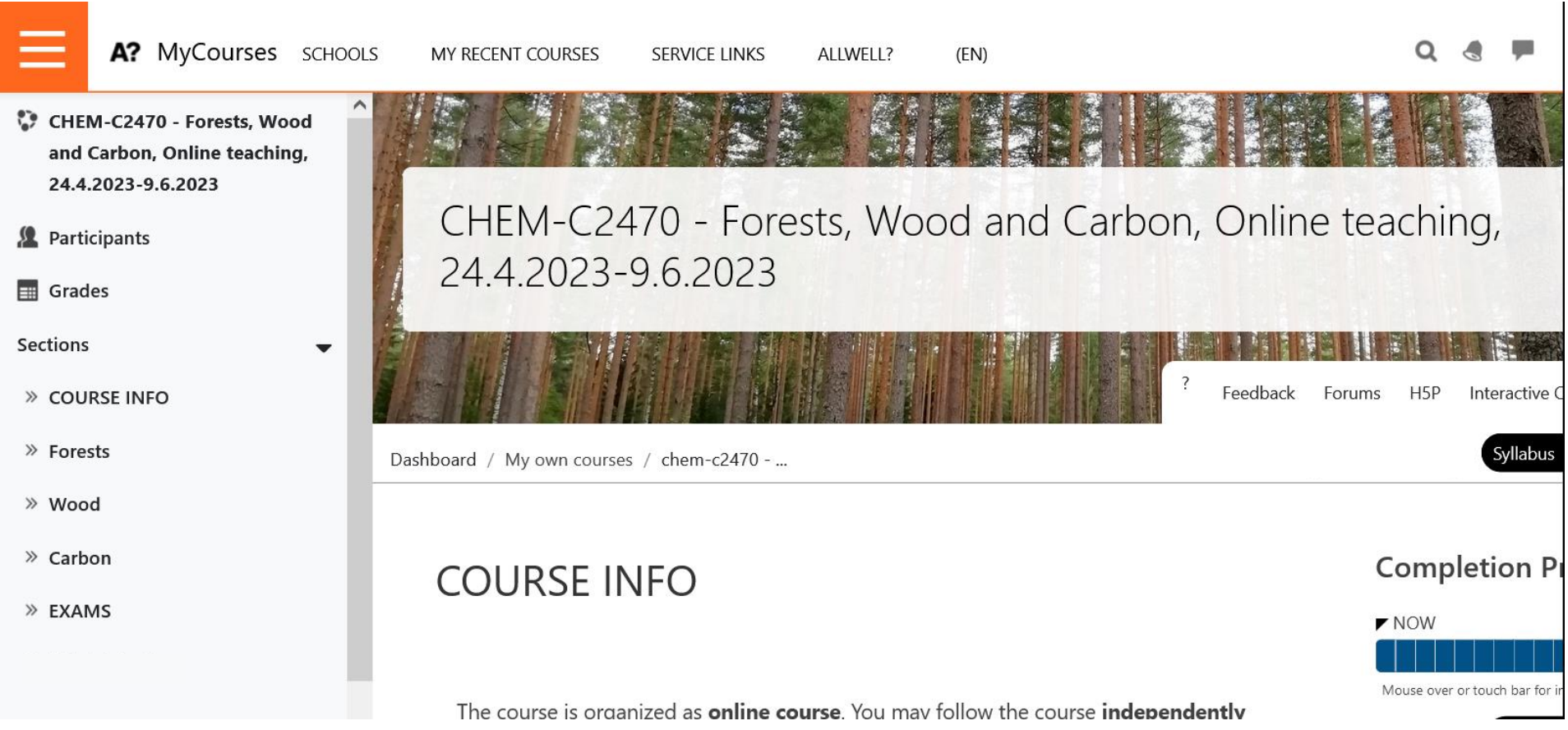
1. **Study the material at Aalto MyCourses workspace**
   - Practice with all the 7 online quizzes (100% correct)
2. **Do the 3 online exams in the workspace**
   - The exams you may do only once
3. **DL Wed 7.6.2023**
4. **Give feedback in MyCourses**

Fri 9.6.2023 at 9:15-10 Closing @Zoom

Participation to intro + closing sessions recommended (not compulsory)

→ **Grading 0-5 (scale determined later)**

Course info in MyCourses



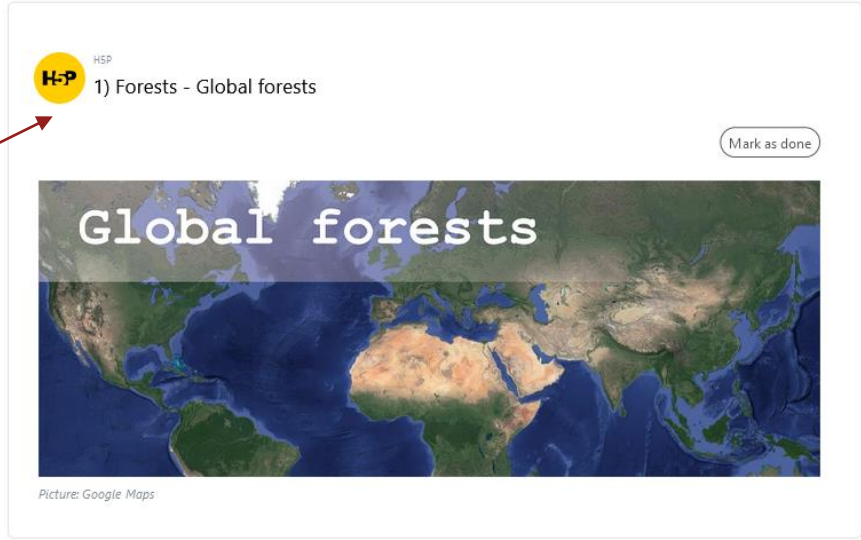
All materials in MyCourses

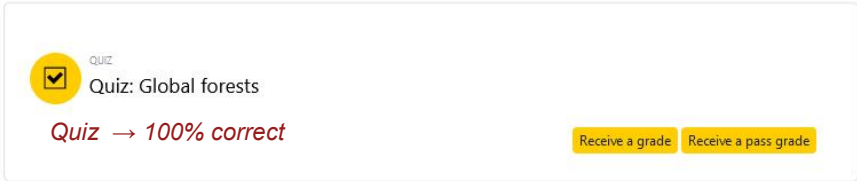
Sections

- COURSE INFO
- **Forests**
- Wood
- Carbon
- EXAMS

Exams → Become available after the first week

"Interactive book"
Activities not evaluated

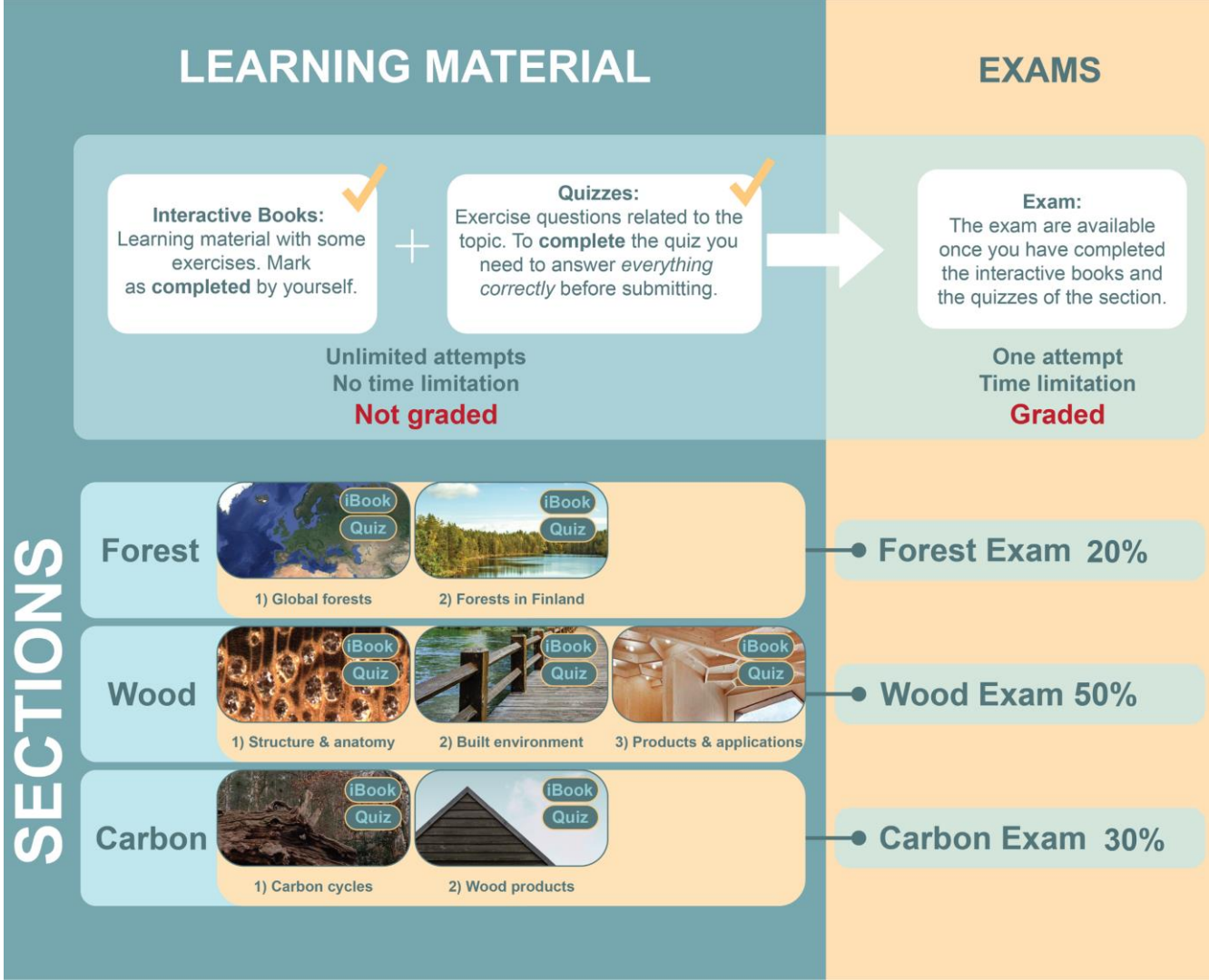




Quiz → 100% correct

Plan ahead!

- DL 7th June
- 6 weeks, make your own schedule!
- Reserve enough time for exams!



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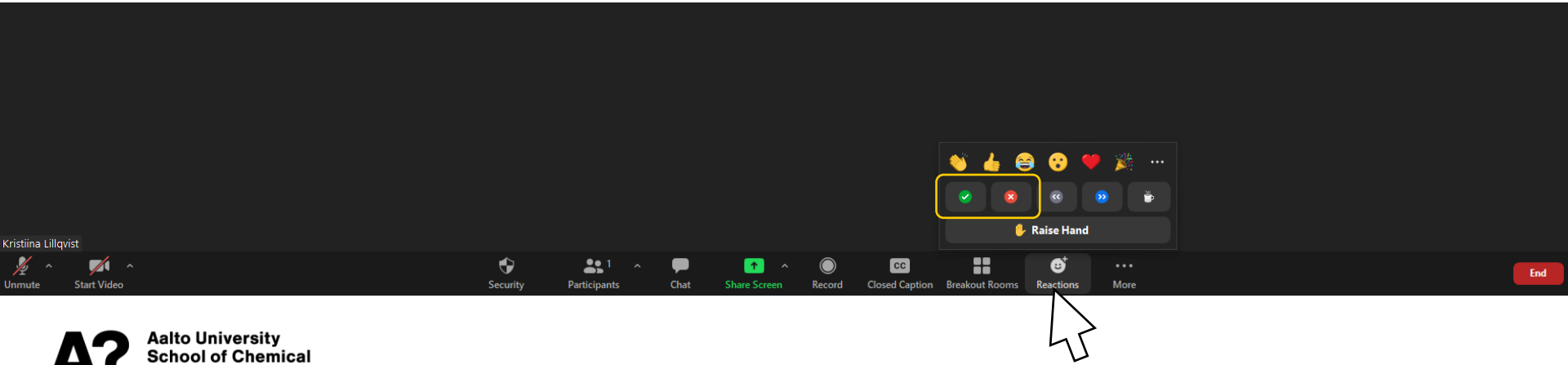
Yes / no questions!

- To start learning process
- Does not influence your grade
- Use yes / no –buttons in Zoom



In Finland more forests are felled than they yearly grow?

YES
The area and biomass is reducing

NO
The area and biomass are increasing

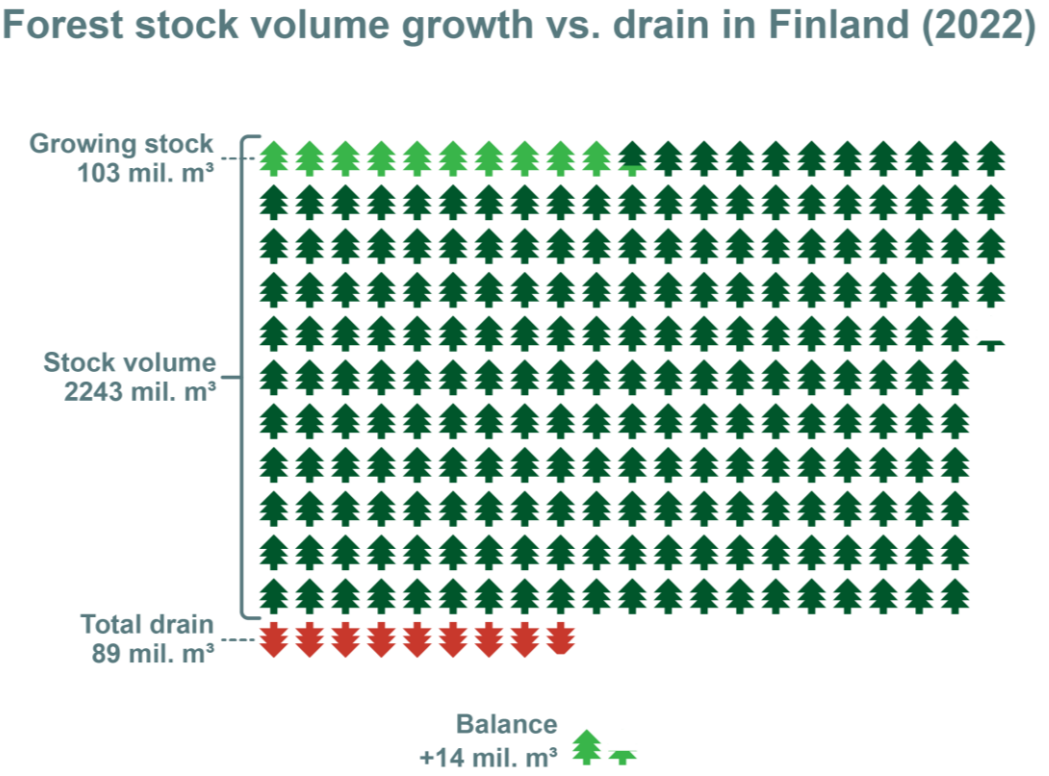


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Illustration: Niilo Lehtonen

Carbon in a tree gets released to the atmosphere when the tree is felled?

YES
It is released.

NO
It is not released.

Picture: Kristiina Lillqvist

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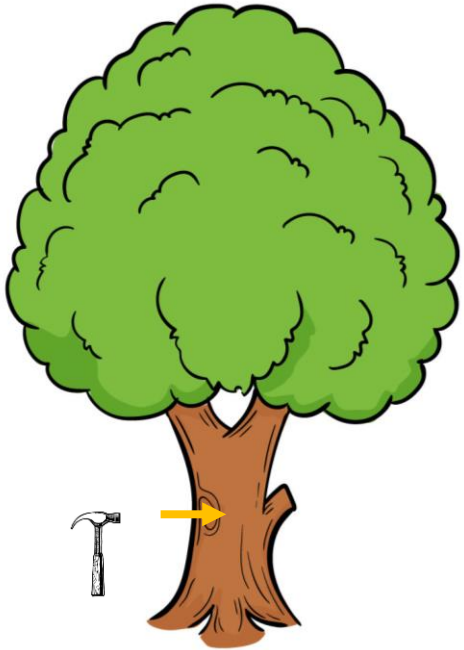
Nail stays at the same height after 10 years?



YES
It stays approximately at the same height

NO
It moves upwards

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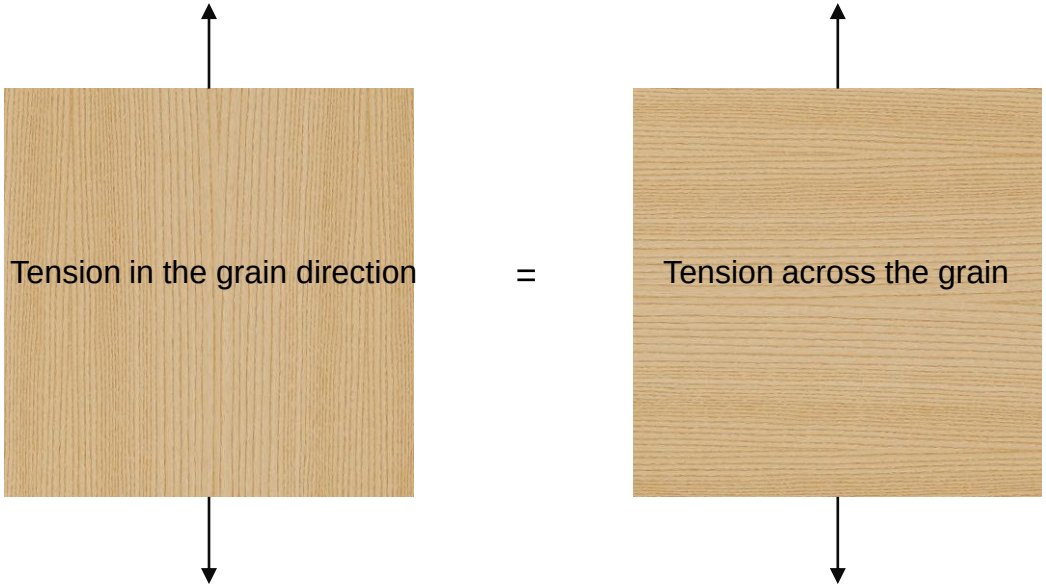
Tree illustration: https://iheartcraftythings.com/tree-drawing.html

Grain orientation does not influence wood strength?



YES
Strength is the same

NO
Strength is different

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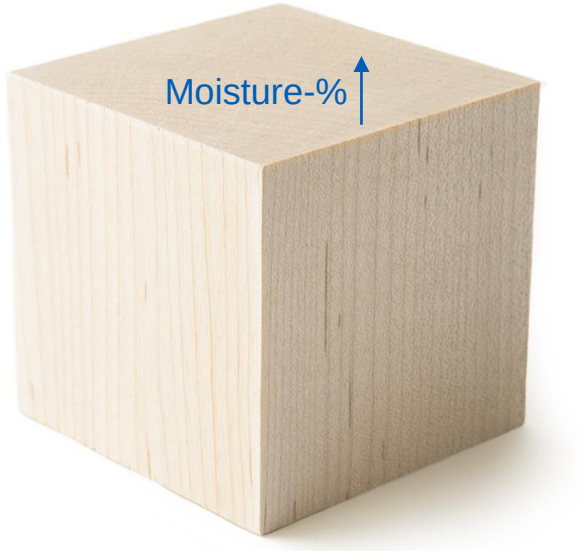
Wood photo: https://www.archiexpo.com/prod/lamin-art/product-59285-1281491.html

If relative humidity in the air increases, moisture content in wood increases?



YES
Wood moisture increases

NO
No change in wood moisture

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Wood photo: https://www.walmart.com/ip/25-Pcs-3-Maple-Wood-Blocks-Soft-Maple-is-a-hard-wood-which-is-great-for-staining-or-painting/180744757

Wood is still used to make these products?

Aircraft 1940

Wind-mill ~1800

Boat ~1200

NO
It is not used

YES
It is used

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https://www.kulttuuriymparistomme.fi/fi-FI/Ajankohtaista/Artikkelit/Vanhat_tuulimyllyt_osana_kulttuurimaisem%2842723%29
https://en.wikipedia.org/wiki/De_Havilland_Mosquito
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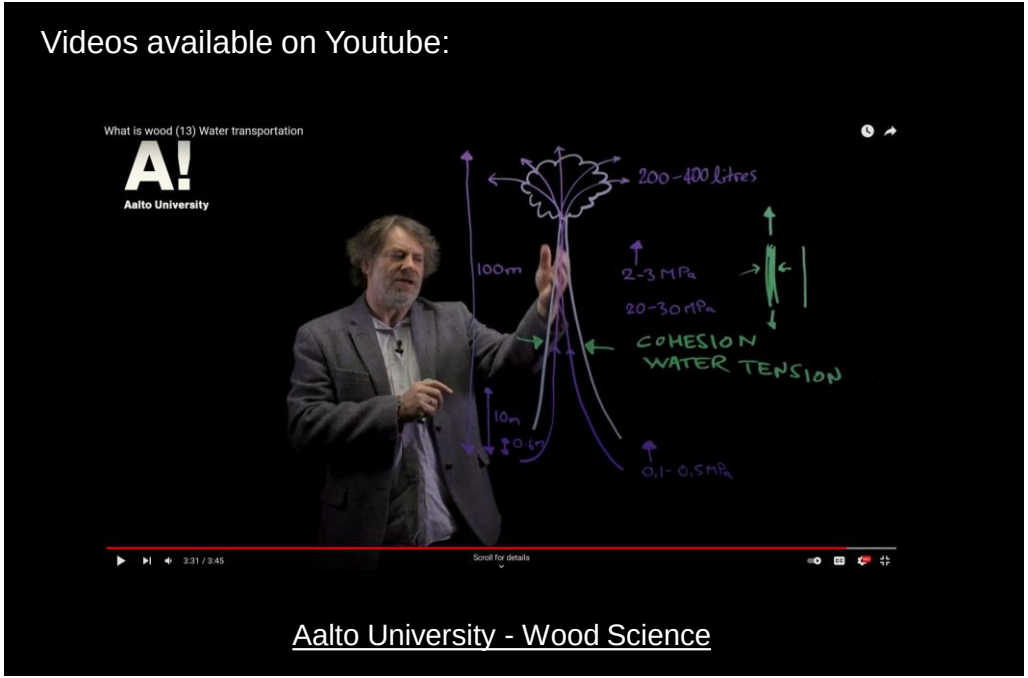
Sources:
https://yle.fi/uutiset/3-7635367
https://www.vestas.com/en/media/images

Questions / comments?

wood-teaching@aalto.fi

- Are you able to find MyCourses –page?
- Can you find and access the interactive books?

Videos available on Youtube:



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