Wood represents one of mankind’s most important materials. Currently, it’s significance is increasing thanks benefits such as its inherent sustainable nature as a construction material. This module aims at providing basic knowledge on the physical properties of wood. A focus is laid on the relationships between wood structure and resulting mechanical and physical properties across multiple hierarchical levels. A further focus is laid on the modelling of physical, especially mechanical, properties of wood. Knowledge will be gained about commonly used wood species used in timber construction in Europe. In addition, insight in current research in the field of wood science and technology will be provided. A main learning target is to establish an awareness of a material-appropriate usage of wood in construction regarding its physical properties, and to be able to critically reflect thereupon. This course represent a solid but facultative basis for the course “Engineered Wood Products”.

www.iwb.uni-stuttgart.de
Wood Physics
Lecture plan
Winter semester 2022/23

Date | Agenda | Lecturer
---|---|---
20.10.2022 | The resource wood | P. Grönquist
27.10.2022 | Wood structure and anatomy I | P. Grönquist
03.10.2022 | No lecture (excursion) | -
10.11.2022 | Wood structure and anatomy II | P. Grönquist
17.11.2022 | Tree biomechanics | P. Grönquist
24.11.2022 | Wood density | P. Grönquist
01.12.2022 | Wood-water interaction I: Wood moisture | P. Grönquist
08.12.2022 | Wood-water interaction II: Swelling and shrinkage | P. Grönquist
15.12.2022 | Thermal and electrical properties | P. Grönquist
22.12.2022 | No lecture (pause) | -
12.01.2023 | Mechanics I: Elasticity | P. Grönquist
19.01.2023 | Mechanics II: Strength | P. Grönquist
26.01.2023 | Mechanics III: Rheological behavior | P. Grönquist
02.02.2023 | Mechanics IV: Micromechanics | P. Grönquist
09.02.2023 | Recap and exam preparation | P. Grönquist

Contact person:
Jun.-Prof. Dr. Philippe Grönquist
Pfaffenwaldring 4b, 70569 Stuttgart
philippe.groenquist@iwb.uni-stuttgart.de

Lecture day: Thursday
Time: 15:45–17:15 pm
Location: PWR 4 – Seminar room 1st floor
Period: 20.10.2022–09.02.2023

www.iwb.uni-stuttgart.de

Changes may apply