Forests, wood, and carbon

CLOSING 9.6.2023

CHEM-C2740 5 cr

Aalto University
School of Chemical
Engineering

Thank you!

Dr. Kristiina Lillqvist

Dr. Daniela Altgen

Dr. Callum Hill

Prof. Lauri Rautkari

Dr. Steven Collins

Wood material science
Department of Bioproducts and Bioprocesses
School of Chemical Technology

wood-teaching@aalto.fi

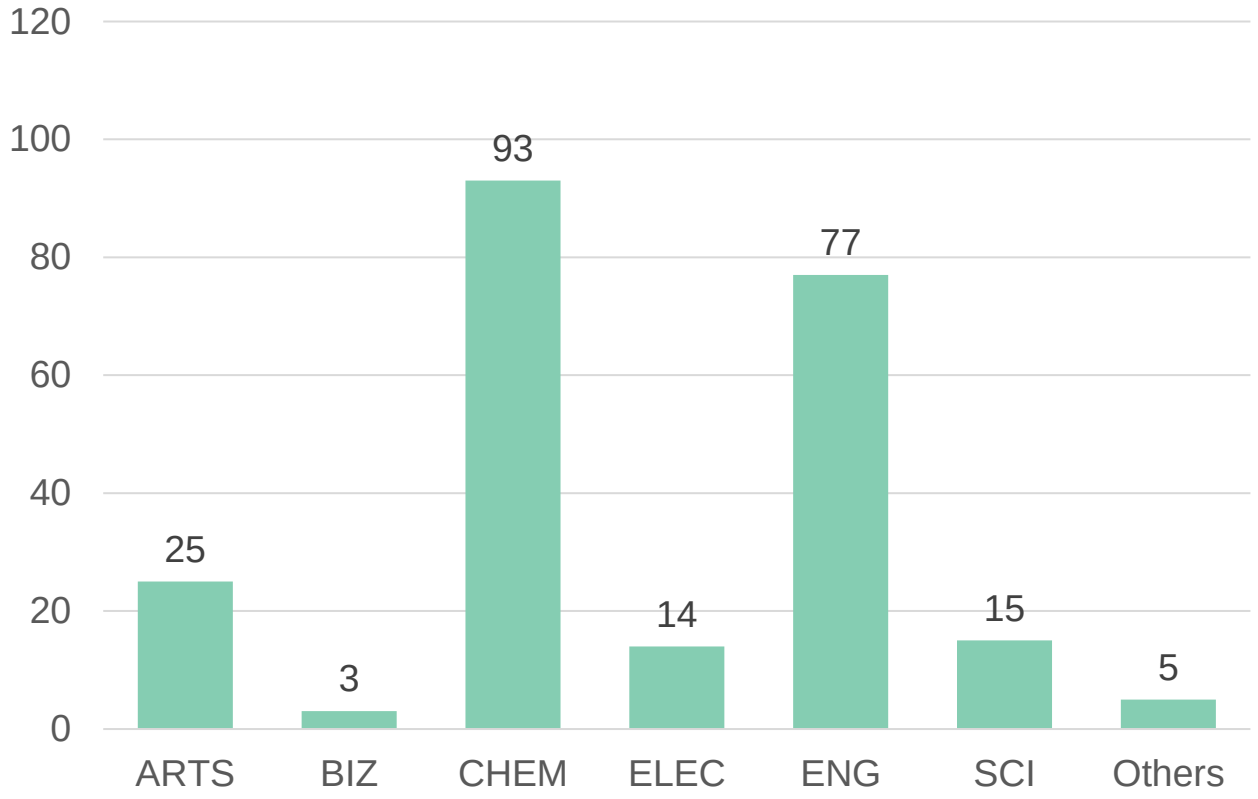
Aalto University
School of Chemical
Engineering

Finished students by department

8.6.2023

231 finished the course

- *284 registered*
- *81,3 % passed*



Aalto University
School of Chemical
Engineering

LEARNING MATERIAL

EXAMS

Interactive Books:
Learning material with some exercises. Mark as **completed** by yourself.

+

Quizzes:
Exercise questions related to the topic. To **complete** the quiz you need to answer *everything correctly* before submitting.

Exam:
The exam are available once you have completed the interactive books and the quizzes of the section.

Unlimited attempts
No time limitation
Not graded

One attempt
Time limitation
Graded

SECTIONS

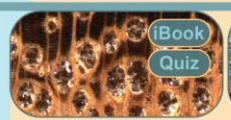
Forest

1) Global forests

2) Forests in Finland

→ Forest Exam 20%

Wood



1) Structure & anatomy

2) Built environment

3) Products & applications

→ Wood Exam 50%

Carbon

1) Carbon cycles

2) Wood products

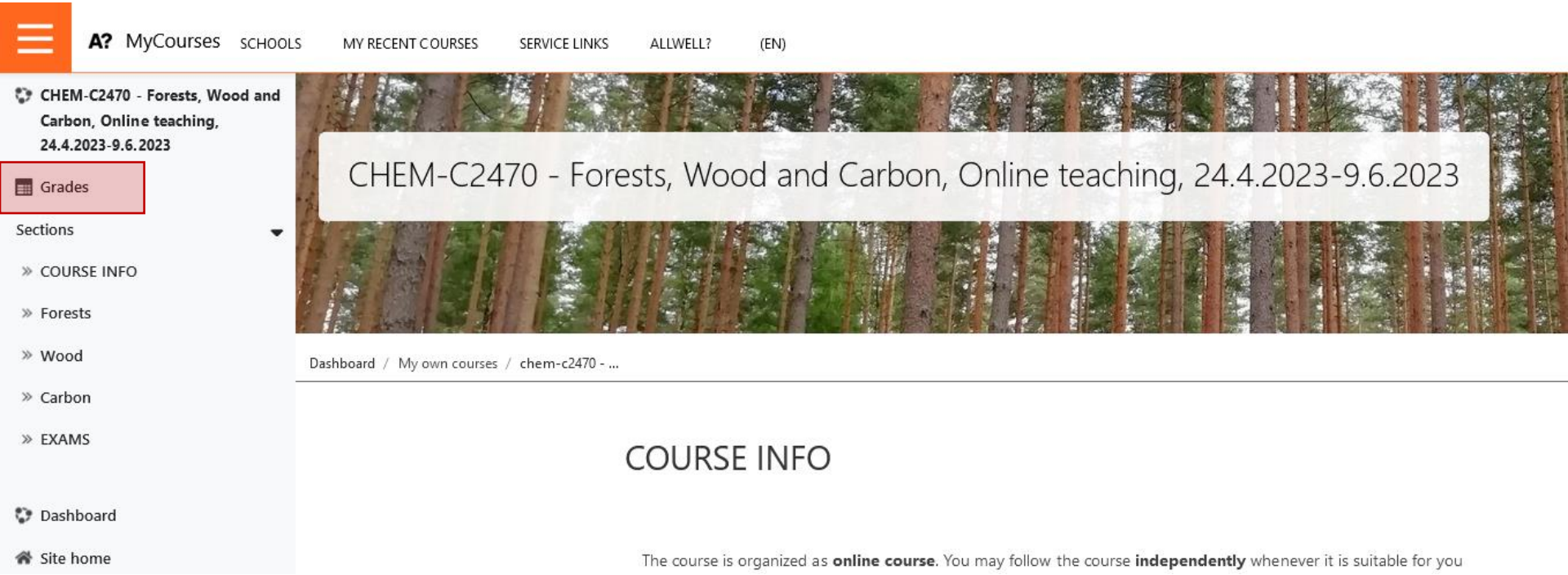
→ Carbon Exam 30%

Aalto University
School of Chemical Engineering

After the course, students are able…

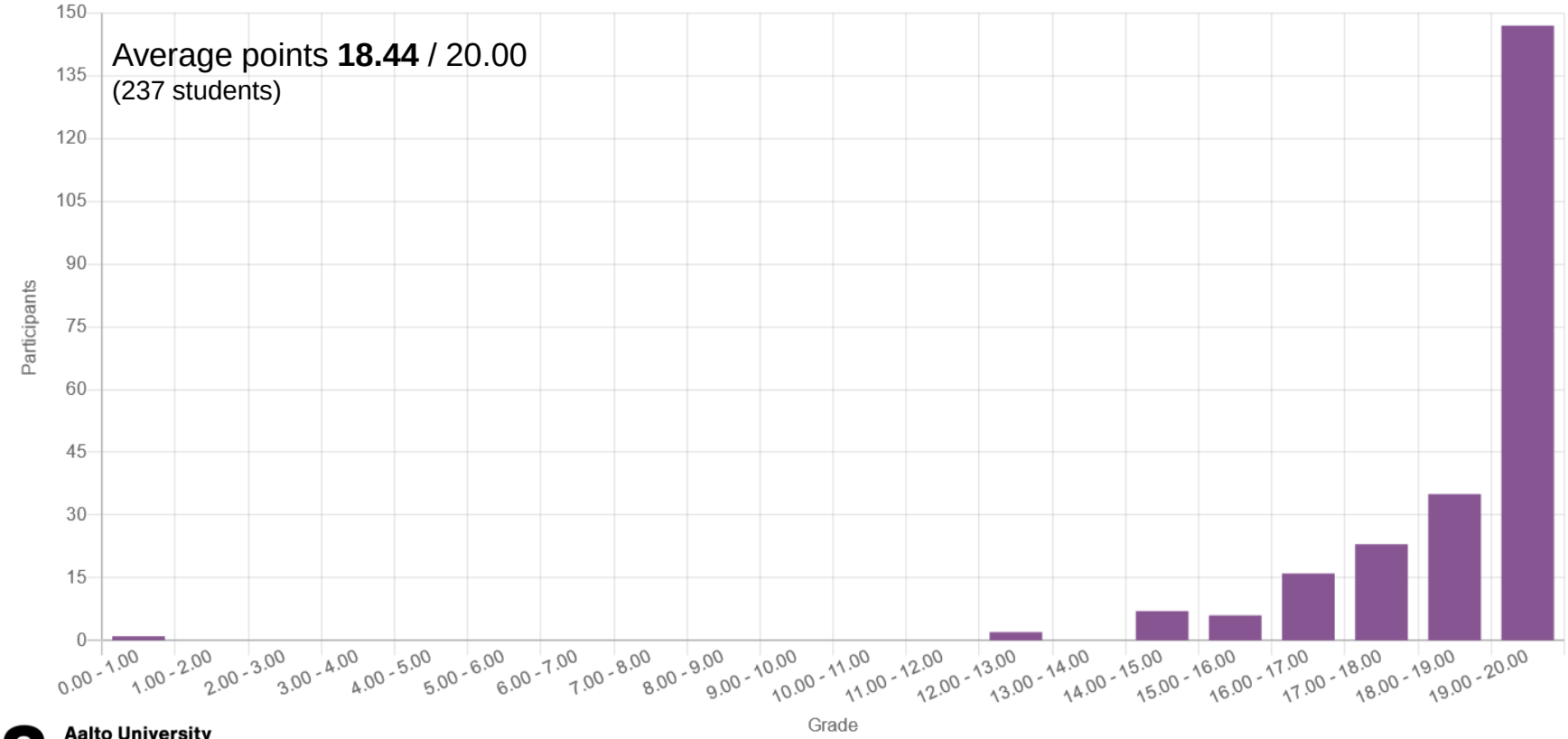
- to describe the role of **forests in the carbon cycle**
- to calculate the **carbon storage potential of wood**
- are able to list the common work phases of **life-cycle analysis**
- to describe the basic macro-level **structure of wood** and the basics of wood grain orientation
- to describe how moisture 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

Exam points in MyCourses



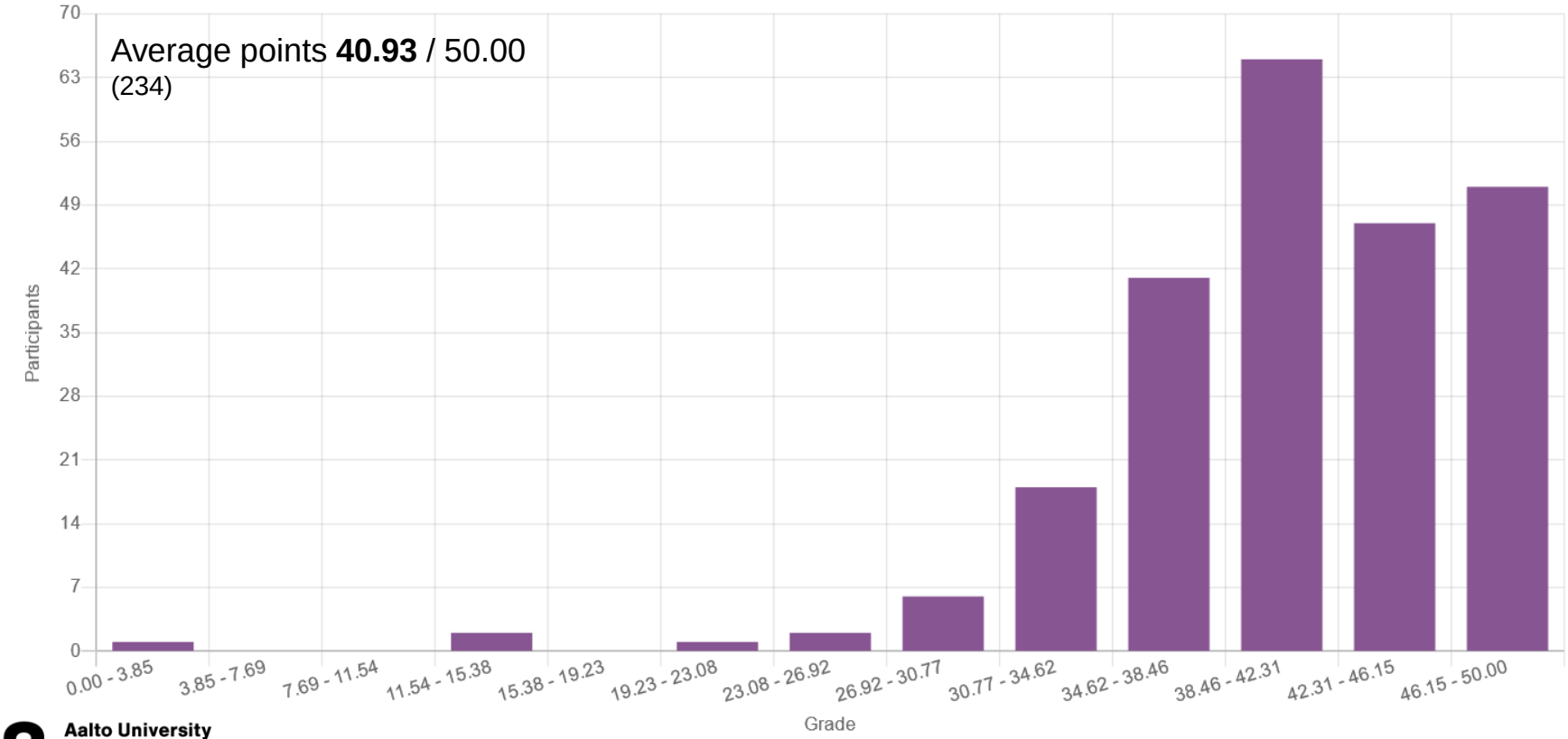
Aalto University
School of Chemical
Engineering

FOREST EXAM



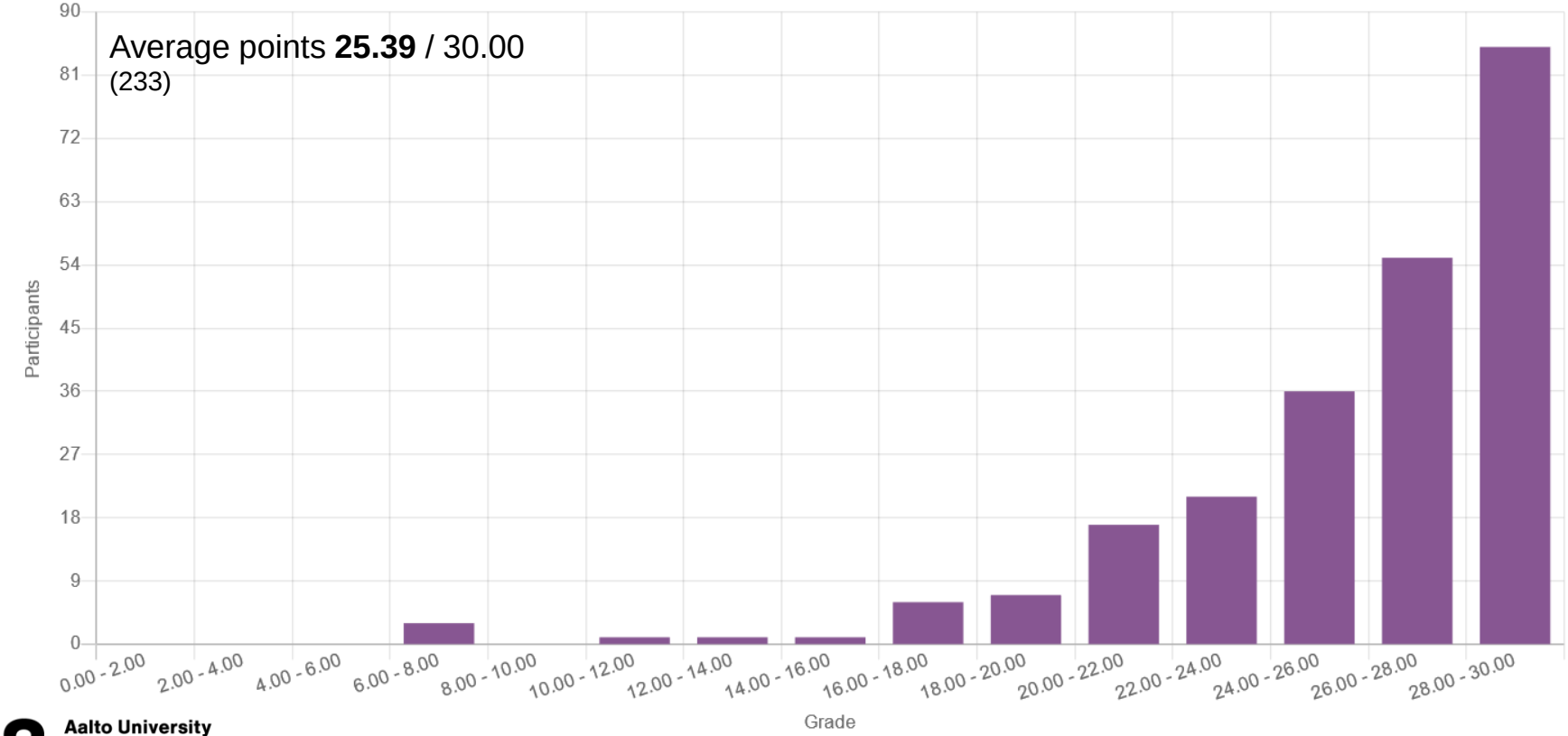
Aalto University
School of Chemical
Engineering

WOOD EXAM



Aalto University
School of Chemical
Engineering

CARBON EXAM

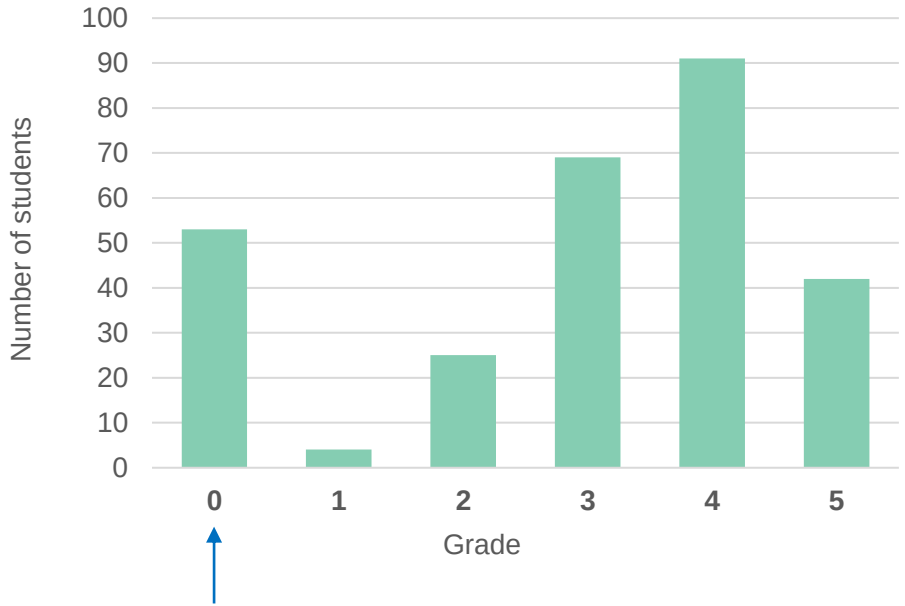


Aalto University
School of Chemical
Engineering

Grading

- **Max points 100**
- **Grading 0-5**

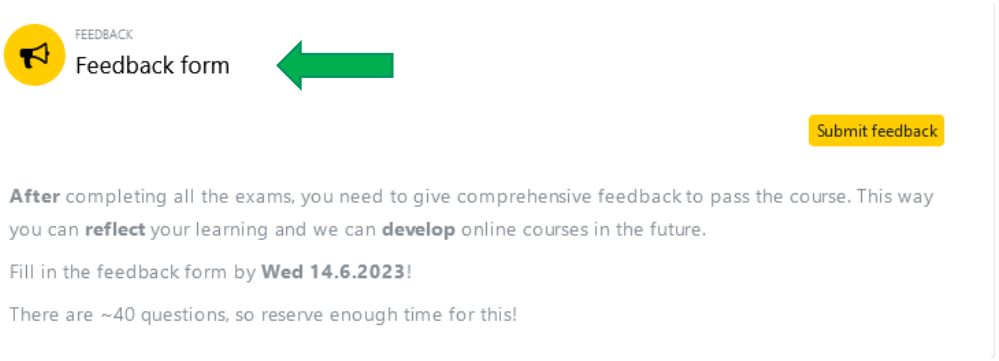
grade	min. points	amount	%
0	0	53	19 %
1	55	4	1 %
2	65	25	9 %
3	75	69	24 %
4	85	91	32 %
5	95	42	15 %



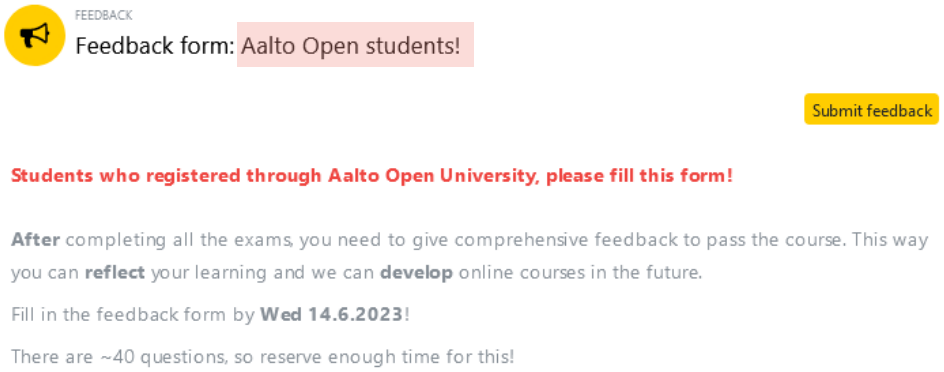
Mainly students who did not make any exams

Course Feedback

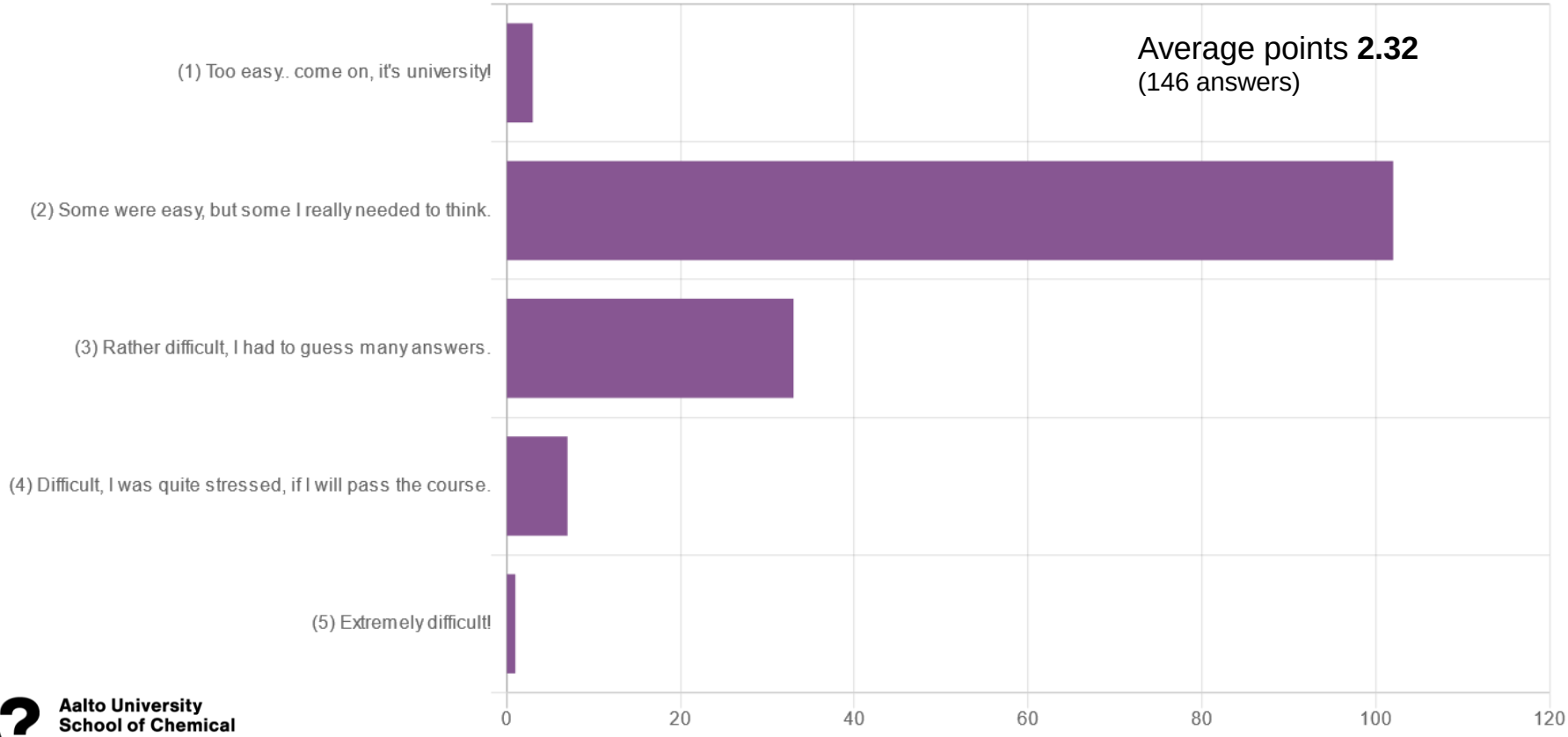
- **95 % (219) have to answer**
  - So far 146 / 231 answered
- **Open in MyCourses until Wed 14th June!!**



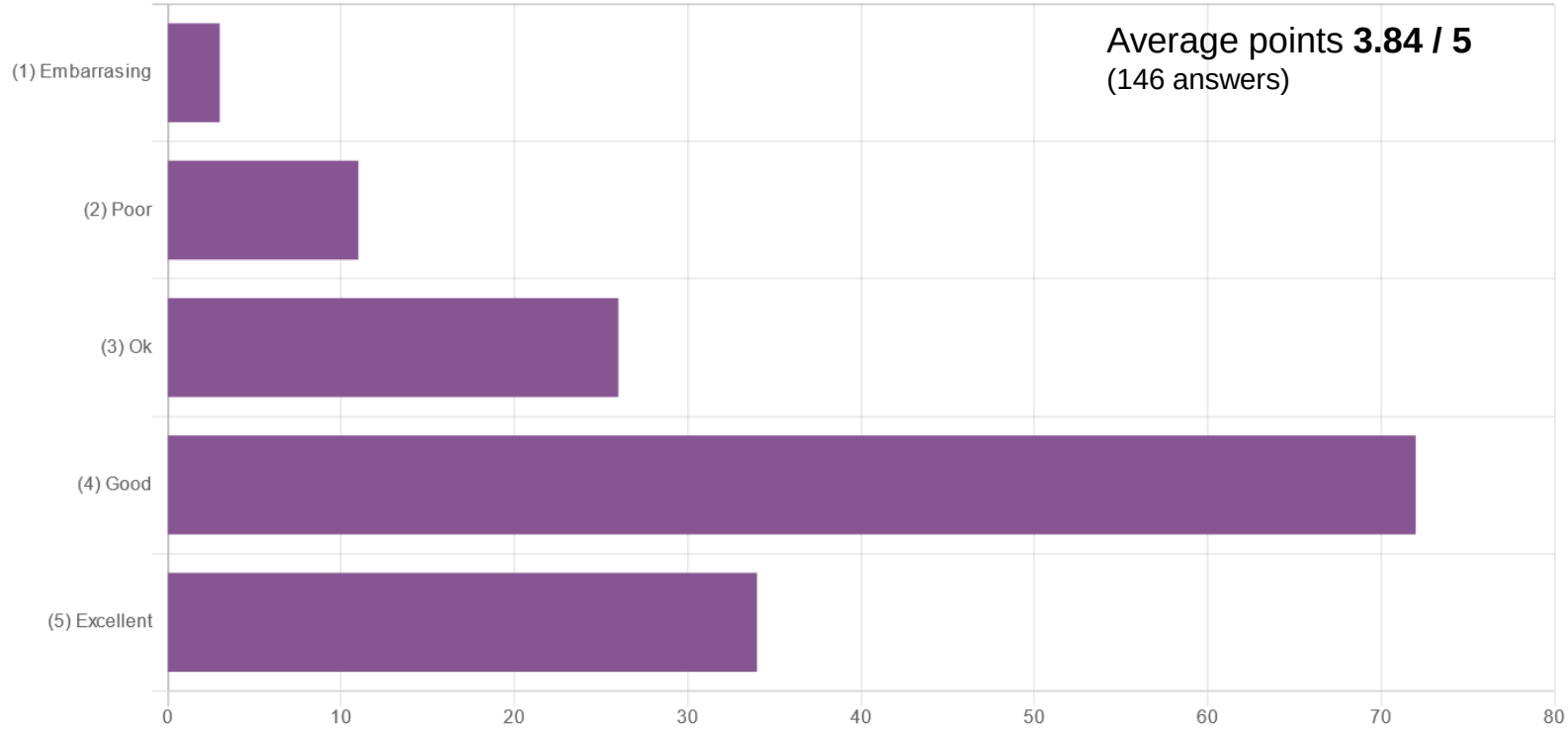
- **Also another Aalto-level webropol form**



Were the final exams difficult or easy?



How well did YOU do? Were you able to keep your schedule and do your best?



Revision

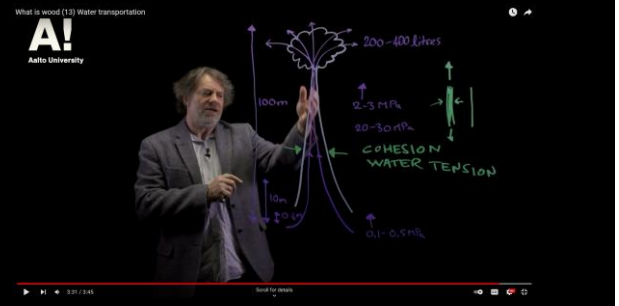
- **If you have any questions about the exam or other topics**
- **Mon 19th June, 10 – 11:30**
- **Vuorimiehentie 1 / room L1**
- **Book a time to this event by 14th June: wood-teaching@aalto.fi**

- **Re-take the course / improve grade → Next year**
  - Instructions: https://www.aalto.fi/en/applications-instructions-and-guidelines/detailed-instructions-on-registering-for-courses-on-sisu

See you again?

wood-teaching@aalto.fi

Videos available on Youtube:



Aalto University - Wood Science

Aalto University
School of Chemical
Engineering

Aalto Wood –minor (MSc) 2022 - 2024

Pre-requisite

CHEM-C2470	Forests, Wood and Carbon **online**	5 op

- **Next time in I-period (4.9.-15.10.2023)**

Mandatory courses (10 cr):

CHEM-E2225	Wood Material Science **online / III**	5 op
CHEM-E2235	Wood Products + Processes **online IV**	5 op

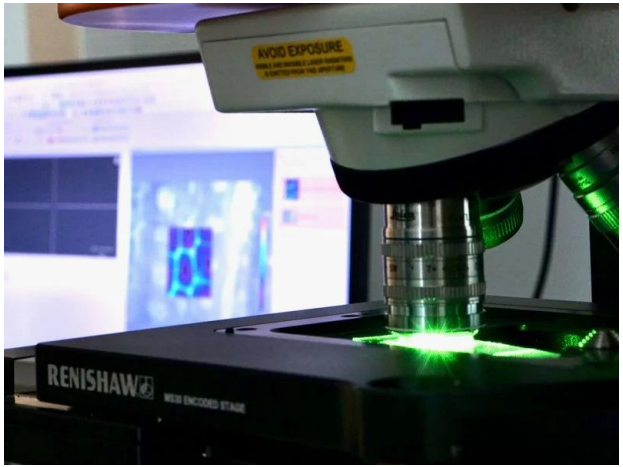
Elective courses (to fulfil 20-25 cr):

CHEM-E2170	Advanced Wood Science	5 op **NEW**
CHEM-E1100	Plant Biomass	5 op
CIV-E4110	Timber Engineering	5 op
CIV-E4120	Timber Structures	5 op
ARK-E401201	Wood in Architecture Construction	5 op
ARK-E4008	Industrial Wood Construction	5 op
SARK-E5016	Woodstudio: Design Project	10 op

Advanced wood science 5 cr

CHEM-E2170

- **I-period**
- **Starting Mon 4th Sept**
- **Max 20 students**
  - Students of Fibre and Polymer Engineering major and Aalto Wood minor are prioritized.
- **Learn about advanced analytical techniques to examine the material properties of wood**
  - Water sorption, chemical composition, mechanical properties



Aalto University
School of Chemical Engineering

Course in Sisu:
https://sisu.aalto.fi/student/courseunit/aalto-CU-1150933093-20220801/brochure