

# Dean's Annual Review 2020

## Gary Marquis

19.2.2021



Aalto University  
School of Engineering

# Engineering a sustainable society

Sustainability is a central component of all research, education and impact in the School of Engineering.

\* We contribute primarily toward six United Nations' Sustainable Development Goals (SDGs)



\* We develop processes and capabilities for design and innovation as well as construction concepts that impact all SDGs.

\* We equip the next generation of professionals with technical expertise and a clear understanding of the environmental, societal and economic aspects of sustainability.



# Aalto – growing international recognition on multiple fronts

**9<sup>th</sup>**

9<sup>th</sup> best young university in the world

(QS Top 50 under 50 2020)

**2<sup>nd</sup>**

2<sup>nd</sup> best university in the world in advancing responsible consumption and production (UN SDG #12)

(THE University Impact Ranking 2020)

**5<sup>th</sup>**

5<sup>th</sup> best university in the world in advancing industry, innovations and infrastructure (UN SDG #9)

(THE University Impact Ranking 2020)

**37<sup>th</sup>**

37<sup>th</sup> most international university in the world

(THE Most International Universities Ranking 2020)

**23<sup>rd</sup>**

23<sup>rd</sup> best university in the world in multidisciplinary and collaborative research

(World University Research Rankings 2020)

# People

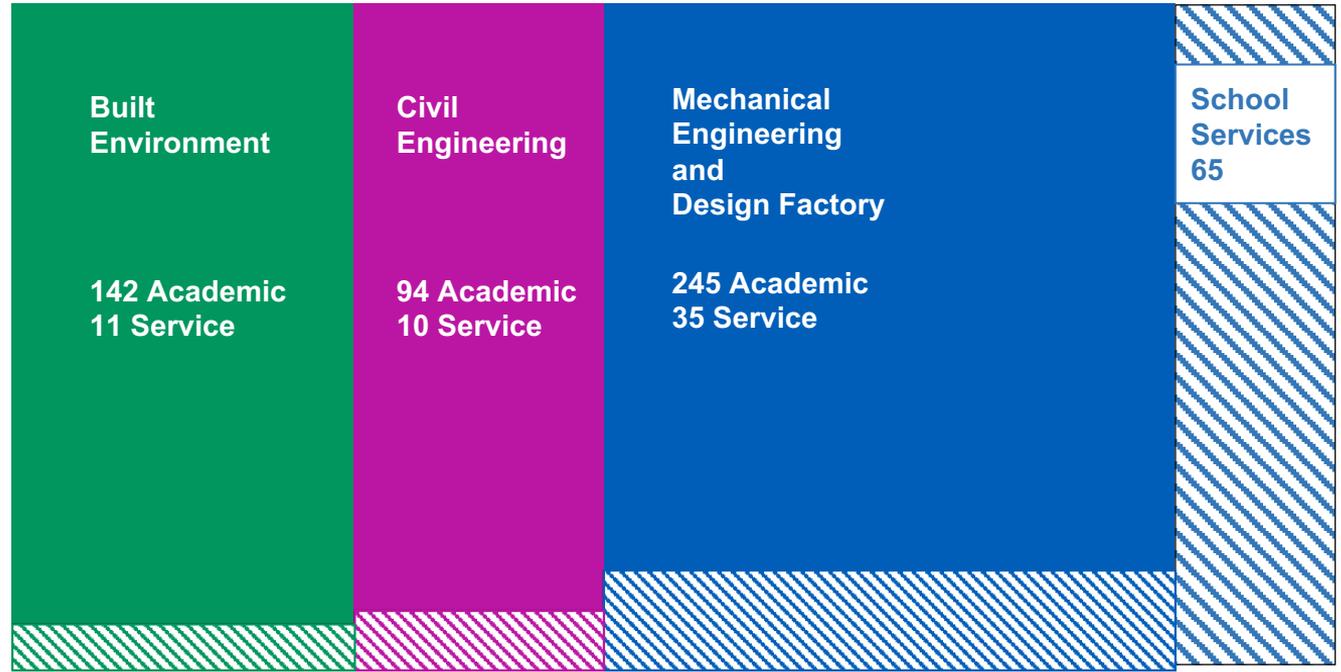


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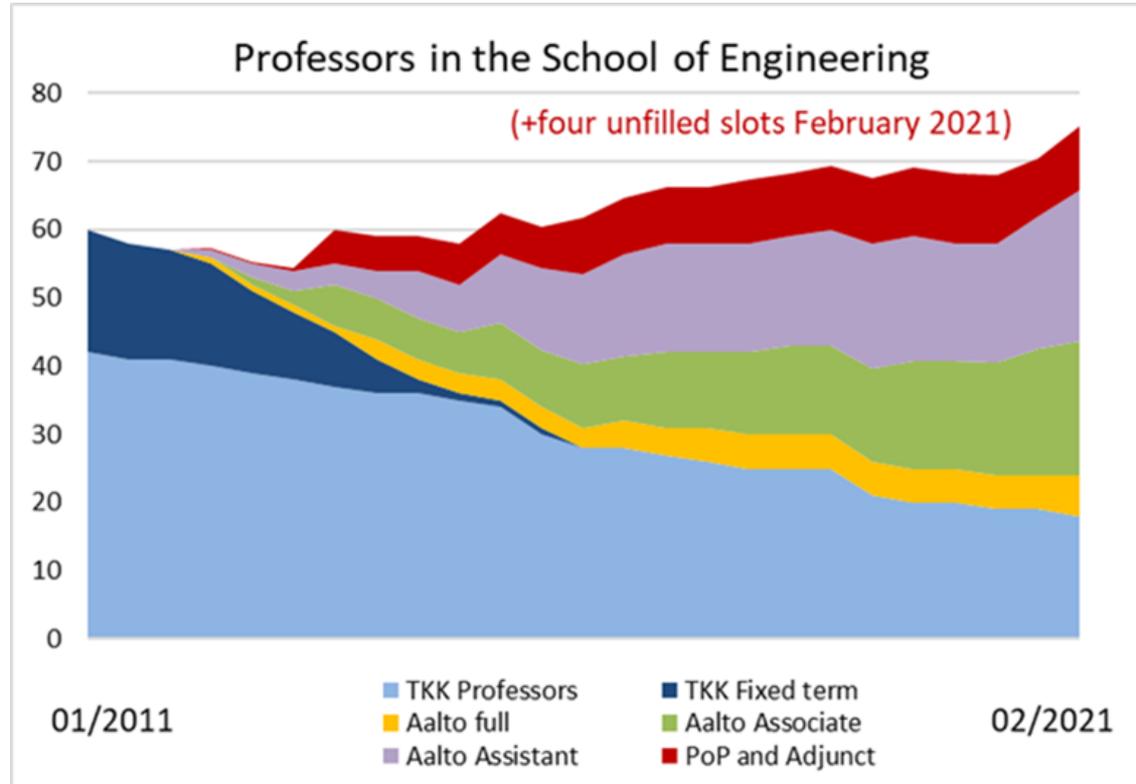
# Faculty and staff 2020

481 Academic staff

121 Service staff



# ENG professors



# Gender Diversity

Trend 2018 - 2020

**Graduated BSc**



**Graduated MSc**



**Graduated DSc**



**Teaching and Research assistants**



**Post-docs**



**Lecturers**



**Professors**



# Nationality diversity

Trend 2018 - 2020

**Graduated BSc**



**Graduated MSc**



**Graduated DSc**



**Teaching and Research assistants**



**Post-docs**



**Lecturers**



**Professors**



# Alumni of the Year

2016



**Mika Anttonen**  
St1

2017



**Ari Niemelä**  
Meyer Turku

2018



**Jukka Mäkelä**  
City of Espoo

2019



**Tiina Tuurnala**  
Finnish Shipowners' Association

2020



**Pekka Metsi**  
Granlund Group

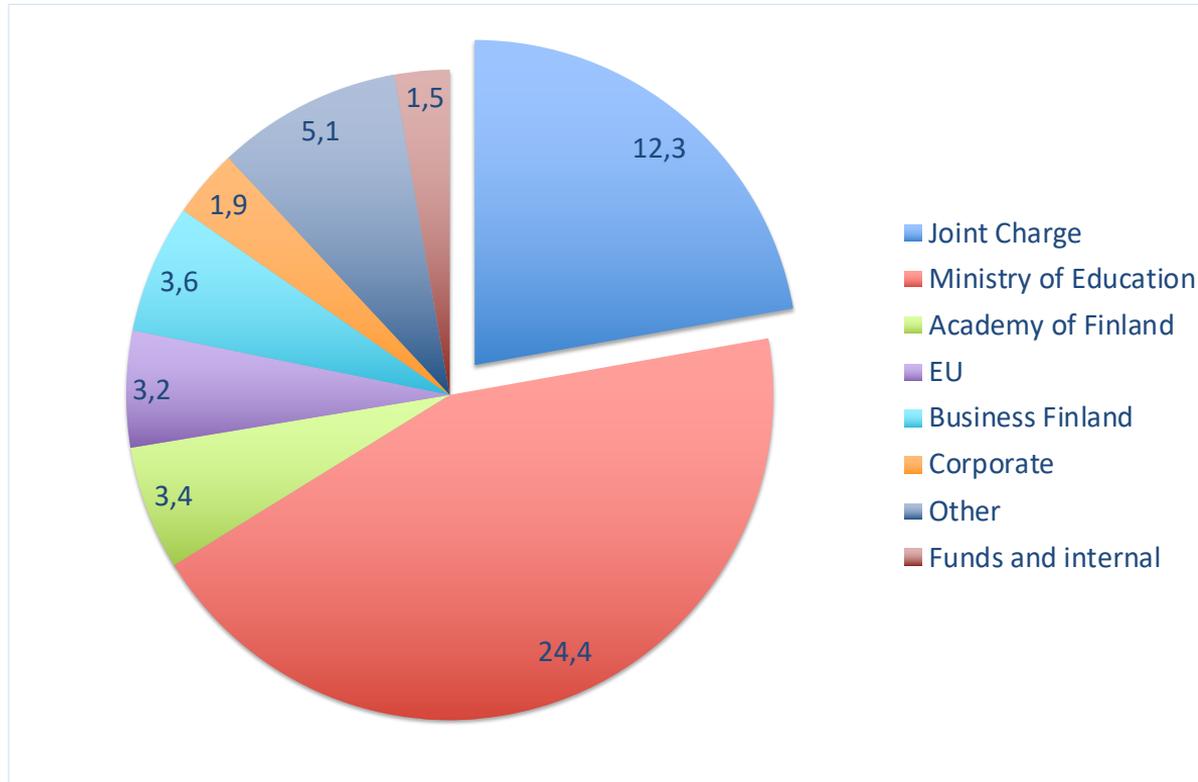
# Enablers



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# Enabler

## Financial Resources 2020: 55,4 M€

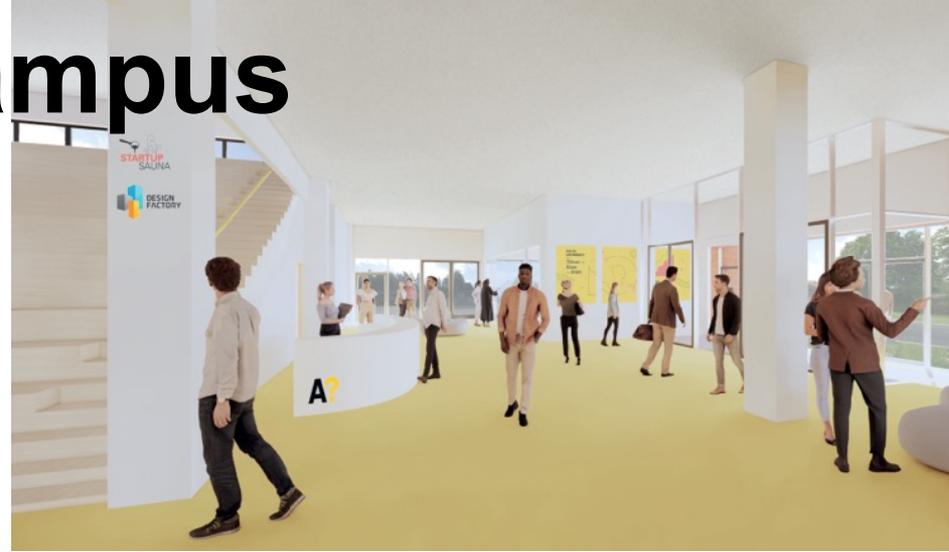


# Performance indicators for enablers (ENG)

Performance indicators	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	Actual	Actual	Actual	Target	Target	Target	Target
All external funding: Total amount of all external funding (k€)*	17 272	17 222	16 661	15 986	14 855	17 216	17 037	17 281	17 472	18 894
International competitive research funding (1 000 EUR)				1 676	2 192	2 770	2 600	2 800	3 000	3 000
Other competitive research funding (1 000 EUR)				9 738	7 581	8 513	9 300	9 400	9 700	10 900
Corporate collaboration volume (Corporate income) (1000 EUR)				2 067	2 228	1 889	2 200	2 204	2 235	2 502

# Developing our campus

- Access control renew in all university buildings at campus – new access zones, new tokens and new system.
- Mechanical key renewing will be continued.
- Continuous investments to teaching and research infrastructure.
- ENG from 14 buildings 2014 to 9 buildings in 2020 and to 8 in 2023.



## Towards carbon neutrality by 2030

**Aalto Works** energy solution together with Fortum: solution in which the heating and cooling will be produced with industrial-scale centralised air-to-water heat pumps.

Campus buildings play a key role in offering the research teams cutting-edge research opportunities e.g. in terms of **energy** and **IoT**.



# School of Engineering at the campus

The main facility tasks at 2020 in ENG locations at campus were:

- Maintenance and minor modifications in K1, K2 and Ice Tank
- Planning of Rakentajanaukio and K4 were re-started late 2020
- K3 evacuated. Construction 1.2.2021-31.12.2022
- Renovation of streets and municipal engineering continued.



# Developing selected infrastructure



Aalto Ice Tank  
Design Factory  
I<sup>3</sup> Industry and  
Innovation  
Infrastructure

# Research and Impact



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# Ecosystems

## Building 2030

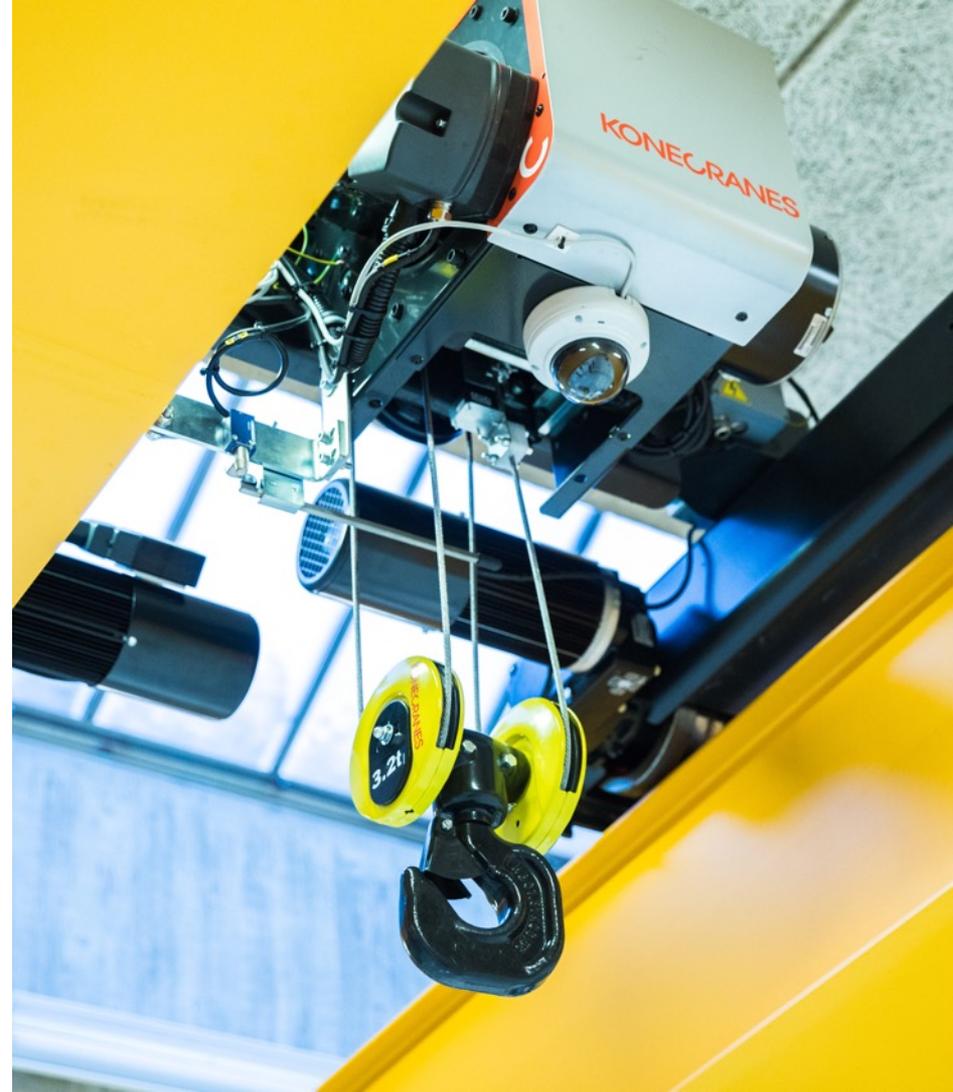
Aalto University and 16 partners

## Aalto Industrial Internet Campus Club

Aalto University and four main partners

## MarineX – innovation ecosystem for future passenger transport

Aalto University, 20 companies, 3 universities, one university of applied sciences



# Record number of Academy projects in the building and construction sector

**Gerhard Fink**, (CE) Glued laminated timber – Second-generation GLT 2.0 (482 197 e)

**Ossi Kaario**, (ME) Reacting flow near cool walls (493 432 e)

**Jarek Kurnitski**, (CE) (299 493 e) as part of Consortium FlexiB: Integration of building flexibility into future energy systems.

**Heidi Salonen** (CE), Aalto (389 517 e) as part of the Consortium CleanSchool: Discovering safe cleaning for school buildings to reduce harmful chemical, particle and microbial footprint.



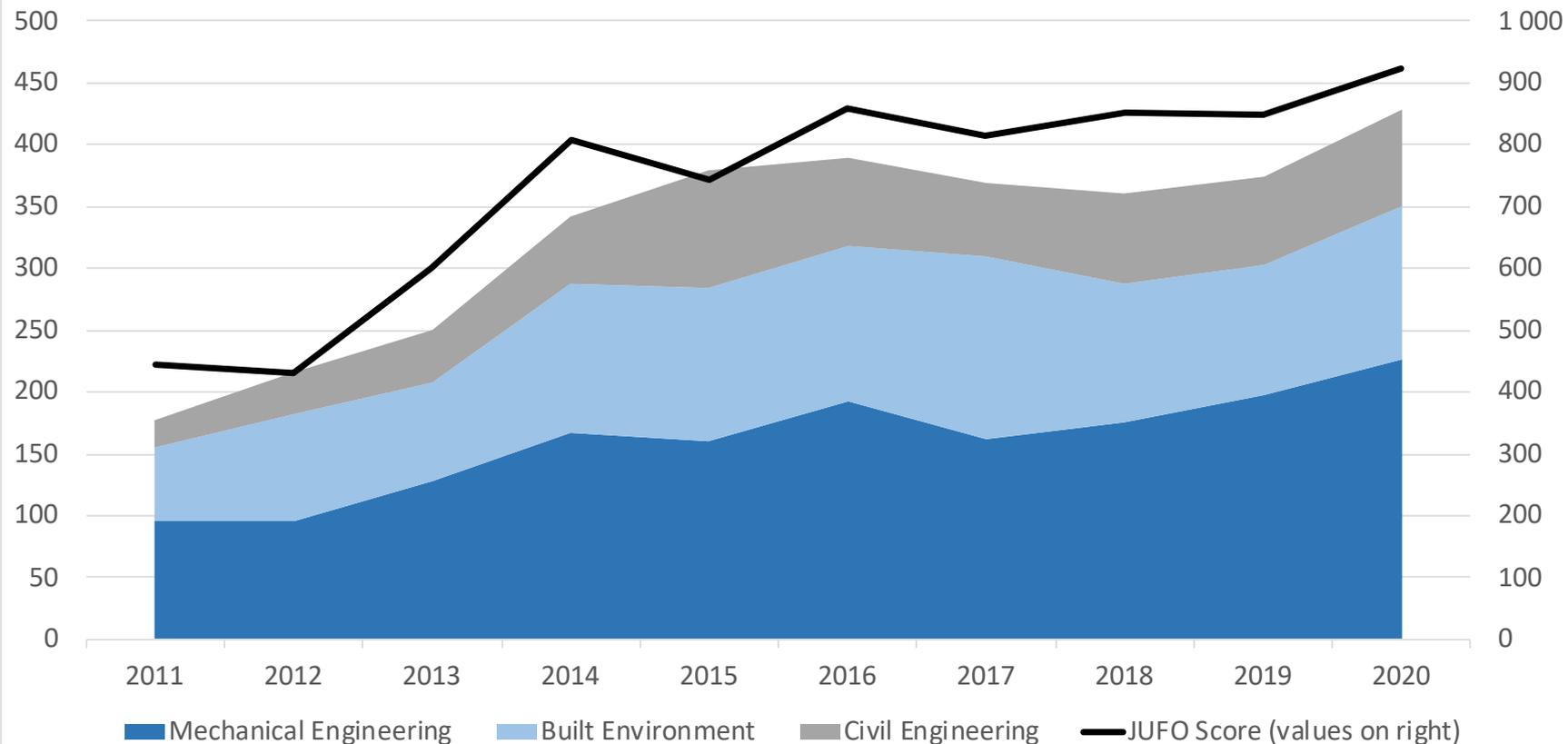
# Doctoral education

Doctoral degrees 2009–2020



# Focusing on quality in journals

JUFO SCORE AND NUMBER OF REFEREED PUBLICATIONS



# Design Factory Global Network

**2008** Aalto University Design Factory, **Finland**  
**2010** Sino-Finnish Centre, **China**  
**2011** Design Factory Melbourne, **Australia**  
**2012** Duoc Design Factory, **Chile**  
**2014** IdeaSquare CERN, **Switzerland**  
**2015** Design Factory Korea, **South Korea**  
**2015** Porto Design Factory, **Portugal**  
**2015** Nexus Design Factory, **USA**  
**2015** Frisian Design Factory, **the Netherlands**  
**2016** METU Design Factory, **Turkey**  
**2016** Design Factory Javeriana Bogotá, **Colombia**  
**2016** NYC Design Factory, **USA**  
**2016** RTU Design Factory, **Latvia**  
**2017** UPV Design Factory, **Spain**  
**2017** Design Factory São Paulo, **Brazil**  
**2017** Design Factory New Zealand, **New Zealand**

**2017** Warsaw Design Factory, **Poland**  
**2017** Fusion Point, **Spain**  
**2017** Kyoto Design Lab, **Japan**  
**2017** Cali Design Factory, **Colombia**  
**2018** inno.space, **Germany**  
**2018** University of Tartu Delta Sandbox, **Estonia**  
**2018** SIT Design Factory, **Singapore**  
**2019** HAMK Design Factory, **Finland**  
**2019** St. John's University Design Factory, **USA**  
**2019** Hannam Design Factory, **South Korea**  
**2019** Shenkar Design Factory, **Israel**  
**2019** oper.space, **Italy**  
**2020** Technovation Hub, **Belgium**  
**2020** Design Factory London, **United Kingdom**  
**2020** NANDIN, **Australia**

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# Education



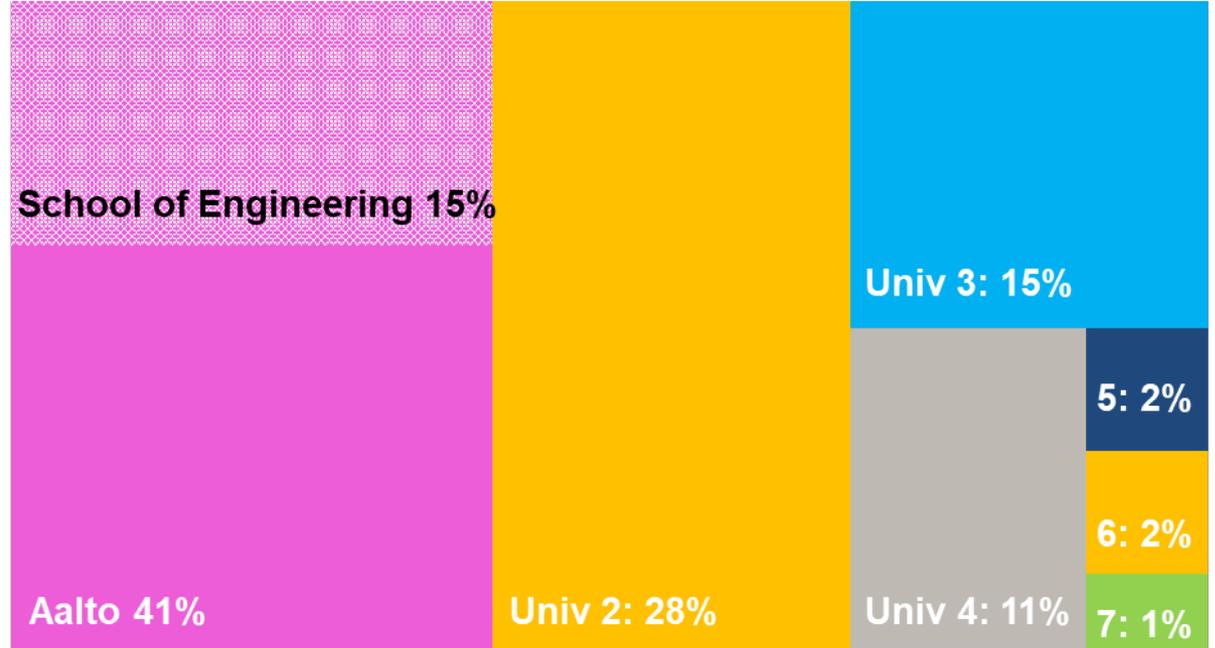
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# Education

Seven universities in Finland graduate 3 000 MSc engineers, architects and computer scientists each year.

Source: TEK Graduate surveys 2017–2019

Association of Academic Engineers and Architects in Finland



# Performance indicators for education

Performance indicators (old)	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	Target	Target	Target	Target
Bachelor's degrees (number of)	244	238	220	300	311	338	380
Master's degrees (number of)	256	343	328	401	448	504	550
Doctoral degrees (number of)	42	45	42	45	45	45	48
Bachelor's feedback: The response rate (%)	86,5	87	90,9	90	90	90	90
Bachelor's feedback: The average of the points	3,78	3,83	3,87	4,0	4,1	4,1	4,1

# Performance indicators for education

Performance indicators	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	Actual	Actual	Actual	Target	Target	Target	Target
Bachelor's degrees in target time (3 years) (%)	18,0 %	28,6 %	64,6 %	59,4 %	59,7 %	55 %	63 %	66 %	70 %	75 %
Bachelor's degrees in target time + 1 year (%)	41,8 %	46,3 %	88,8 %	83,6 %	86,6 %	82,7 %	90 %	92 %	94 %	95 %
Master degrees in target time (2 years / 5 years) (%)	15,4 %	17,6 %	14,1 %	35,9 %	25,4 %	23,5 %	33 %	36 %	39 %	40 %
Master degrees in target time + 1 year (%)	43,1 %	48,1 %	43,2 %	73,4 %	67,1 %	67,4 %	72 %	74 %	76 %	78 %

# Dean's List

AALTO UNIVERSITY SCHOOL OF ENGINEERING  
DEAN'S LIST

2017

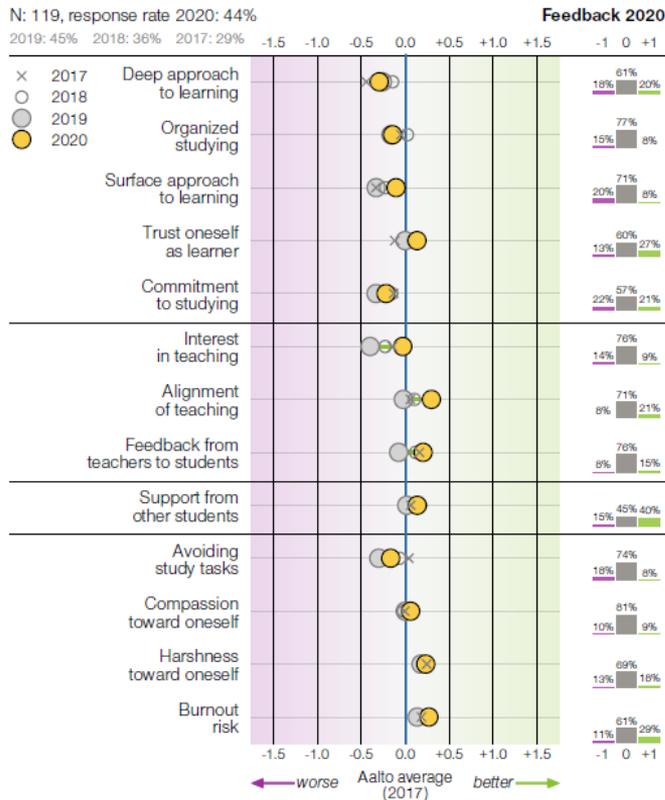
Academic year	Students
2014–2015	134
2015–2016	163
2016–2017	204
2017–2018	197
2018–2019	200
2019–2020	256



- Recognising BSc and MSc students' academic performance during an academic year
- Promoting a goal-oriented approach to studying
- Dean's List students receive a diploma and an overall patch
- Consenting students' names are also displayed on the wall of the second-floor lobby of Otakaari 4

# AIIWell! 2020

## bachelors students



## masters students

