



FINNISH NATIONAL  
AGENCY FOR EDUCATION

# **National Forum for Skills Anticipation - Education and training needs cards**



# What are education and training needs cards?

- The education and training needs cards contain information on labour force size in 2016, jobs becoming vacant in 2017–2035, and the competence levels needed for these jobs by level of education.
  - Data on those who exit the labour market compared to the labour force in 2016. Exiting refers to leaving the labour market permanently due to retirement or death.
  - The future labour force size is given as an estimate produced by the National Forum for Skills Anticipation. The estimates are based on outlooks produced by two anticipation scenarios and VTT Technical Research Centre of Finland's industry forecasts.
  - The need for new labour force and the education and training needs of new labour force are based on assessments of the National Forum for Skills Anticipation and the results of quantitative anticipation.
  - The assessments are based on a survey and the efforts of expert workshops.
  - The quantitative anticipation results will be published in spring 2020.
- Cooperation body appointed by the Ministry of Education and Culture for the term 1 January 2017–31 December 2020
  - Nine anticipation groups covering all sectors of Statistics Finland's Standard Industrial Classification (TOL 2008)
  - All anticipation groups have 16 members and 16 substitute members
  - The anticipation groups produce information on the needs for skills and competences as well as education and training in the working life of the future

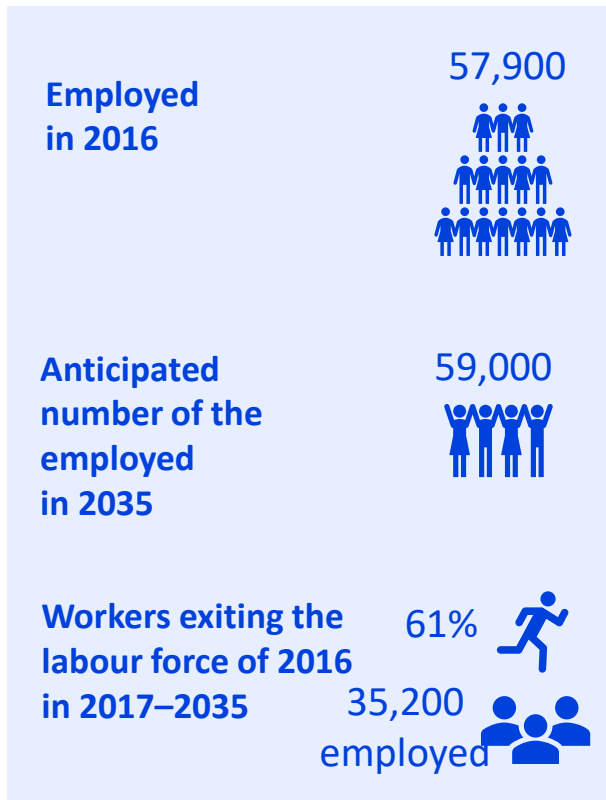
National Forum for Skills Anticipation

# **Natural resources, food production and environment**

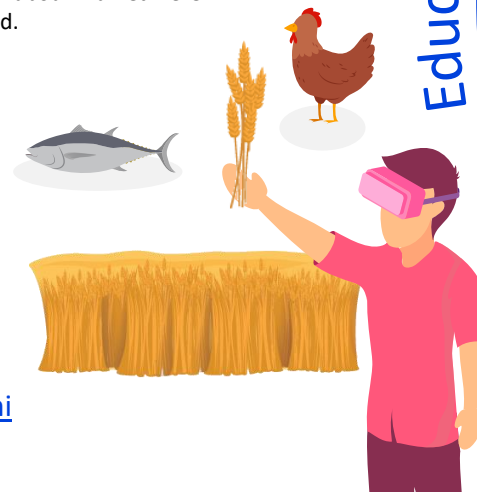


# Agriculture, fishing and veterinary activities 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)

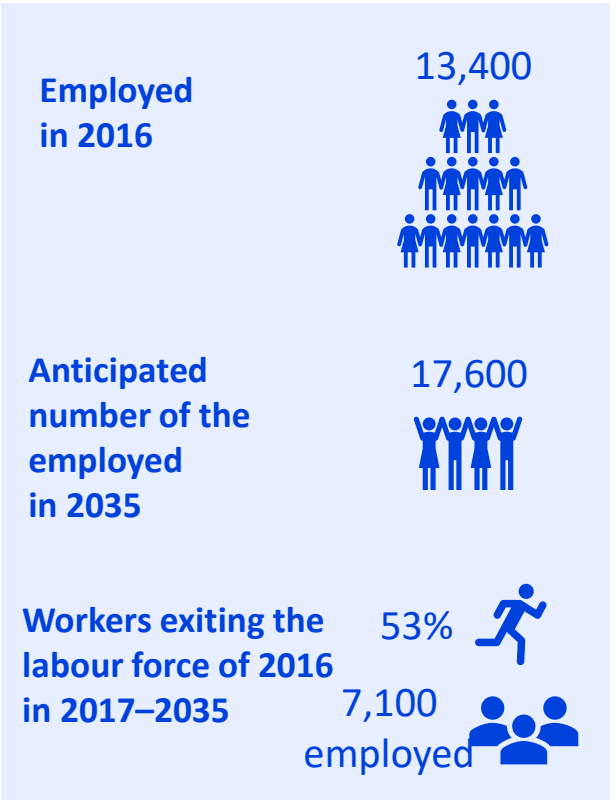


- 55% Vocational education and training
- 31% Universities of applied sciences
- 11% Universities
- 2% Other education and training



# Forestry 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



## Education and training needs of new labour force

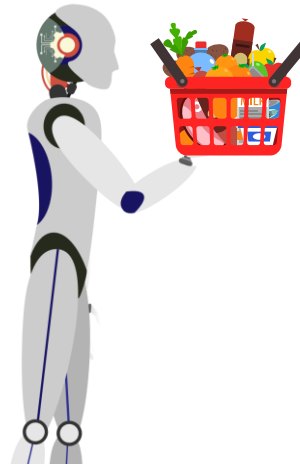
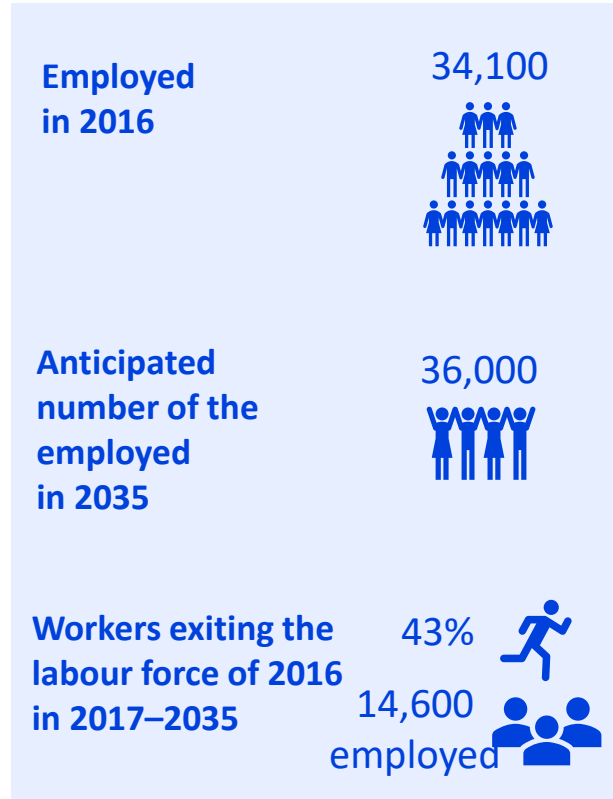
### Education and training needs in 2017–2035 (%)



- 73% Vocational education and training
- 19% Universities of applied sciences
- 7% Universities

# Manufacture of food products 2035

Need for new labour force and the education and training needs of new labour force



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



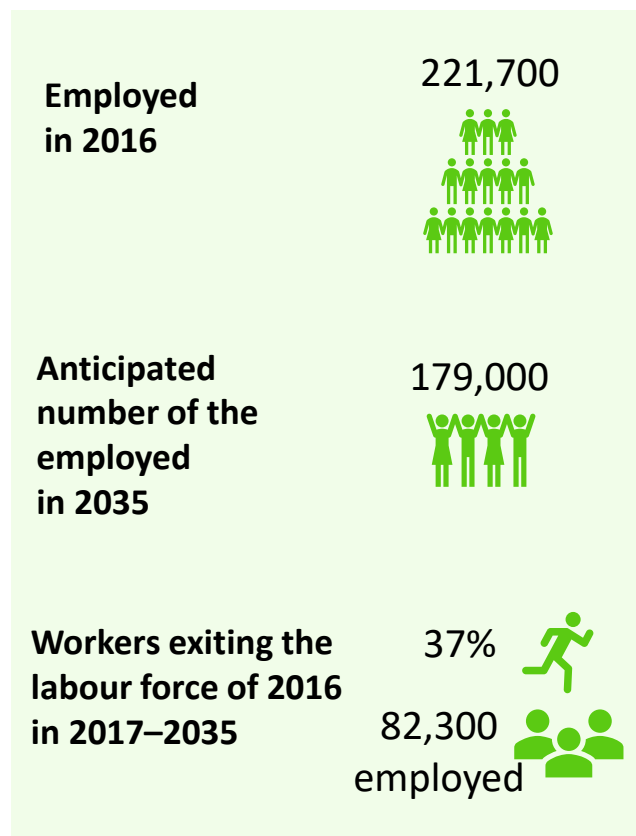
69%	Vocational education and training
18%	Universities of applied sciences
10%	Universities
3%	Other education and training

# **Business and administration**



# Trade 2035

Need for new labour force and the education and training needs of new labour force



**How many new workers will be needed (vacancies) in 2017–2035?**

39,600



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

**Education and training needs in 2017–2035 (%)**



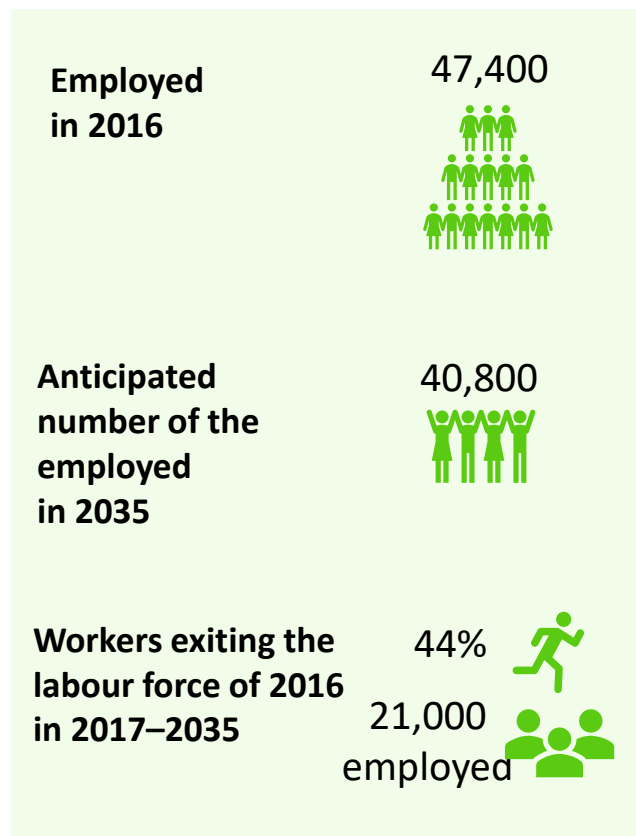
- 46% Vocational education and training
- 38% Universities of applied sciences
- 17% Universities
- 1% Other education and training





# Financial and insurance services 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)

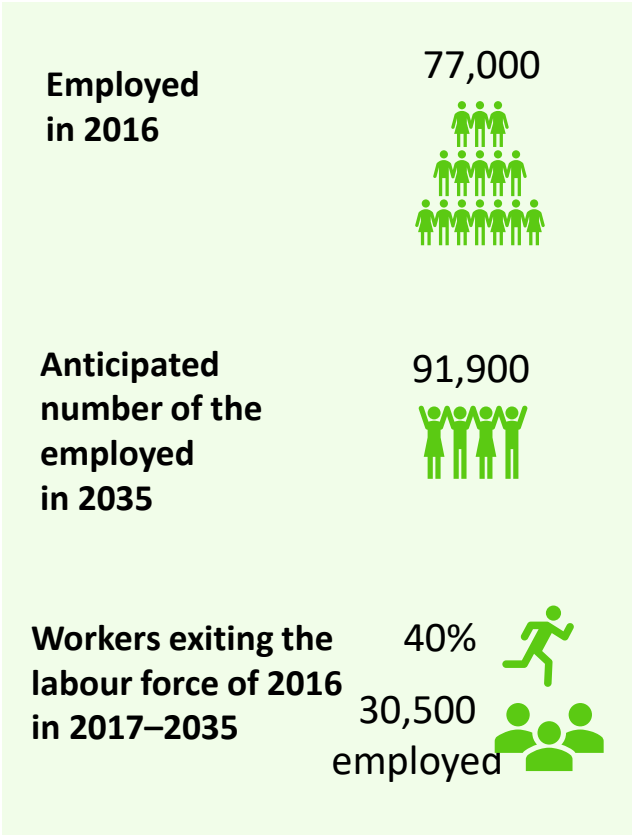


- 62% Universities
- 35% Universities of applied sciences
- 3% Vocational education and training



# Business and development services for business life 2035

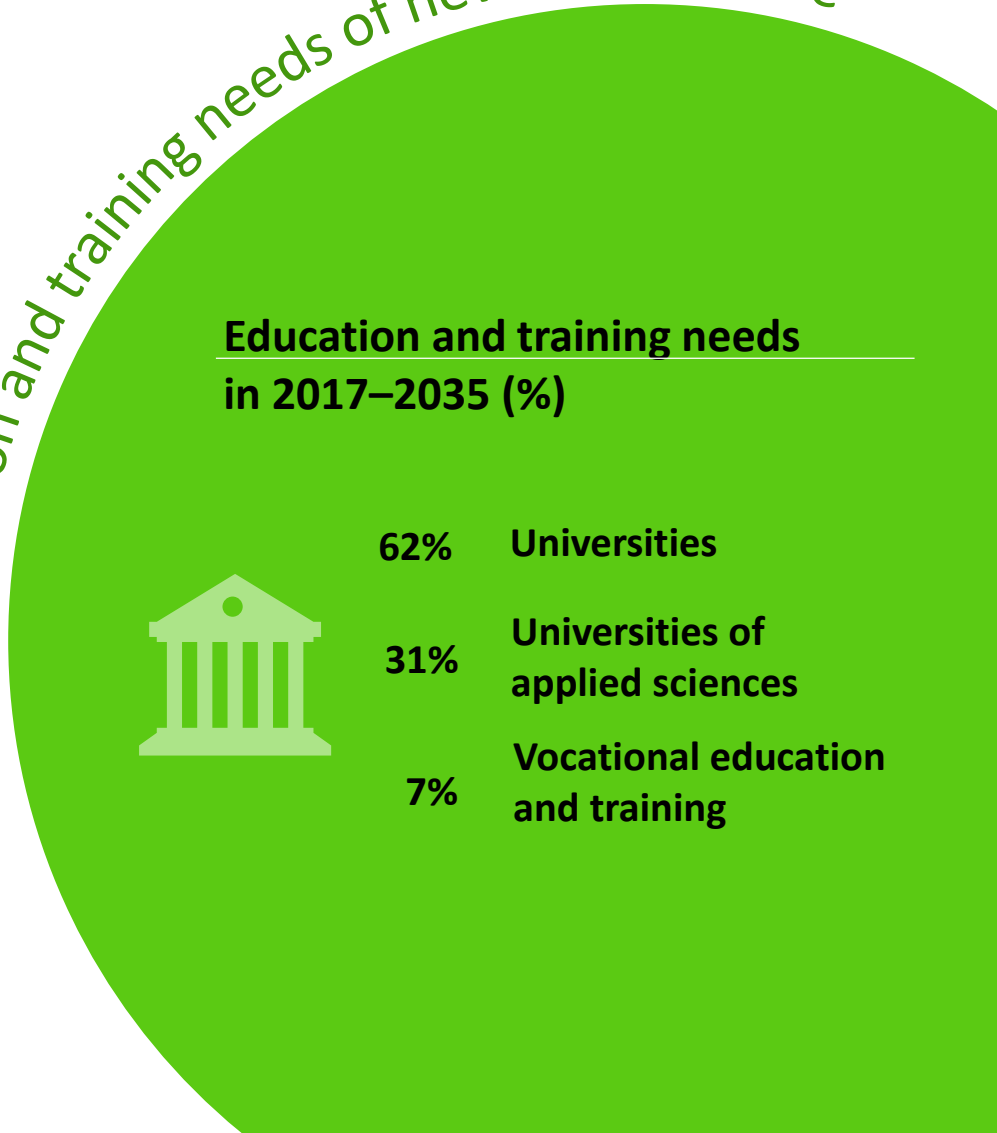
Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

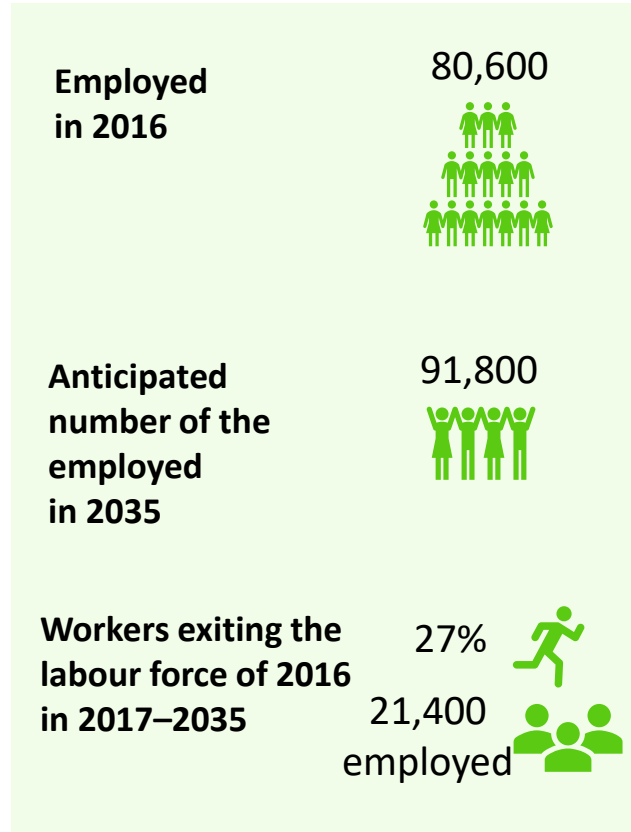


Education and training needs of new labour force



# Rental and support services for business life 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

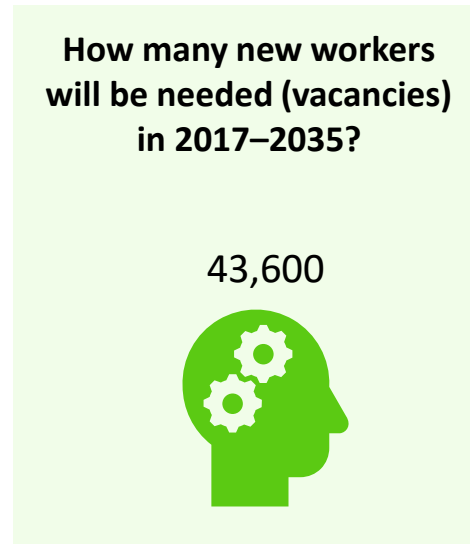
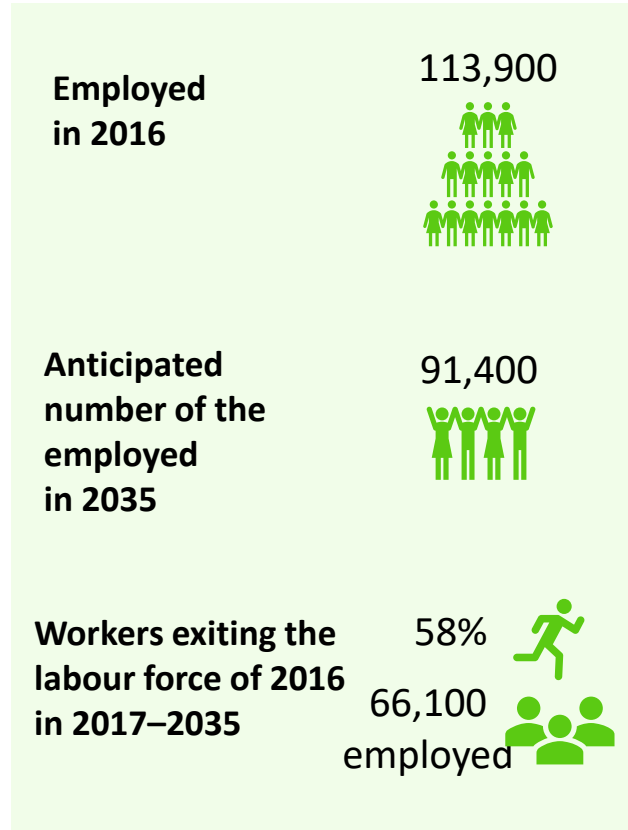
## Education and training needs in 2017–2035 (%)



- 36% Vocational education and training
- 30% Universities of applied sciences
- 29% Universities
- 5% Other education and training

# Public administration 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

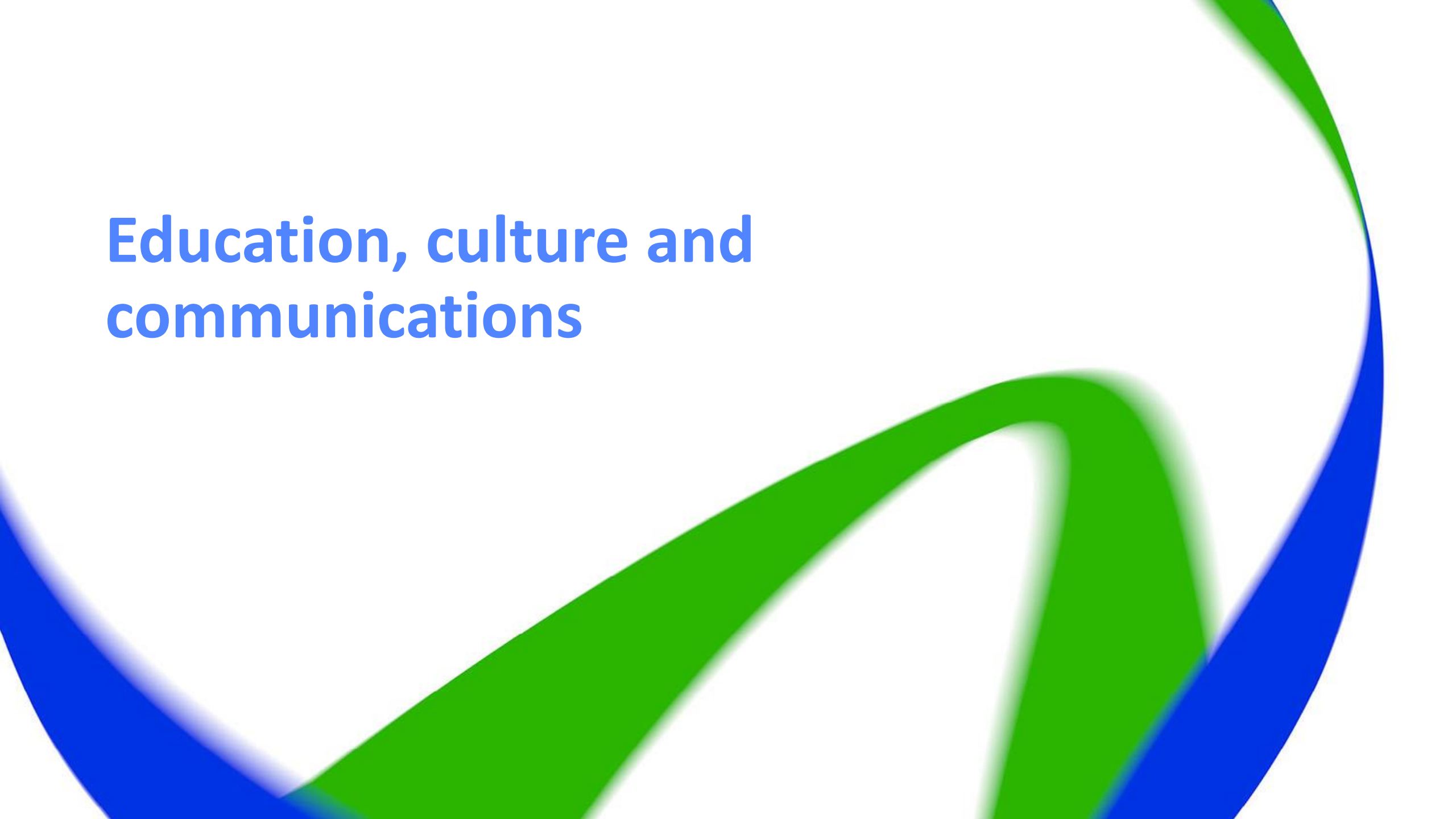
## Education and training needs in 2017–2035 (%)



45%	Universities
29%	Universities of applied sciences
26%	Vocational education and training

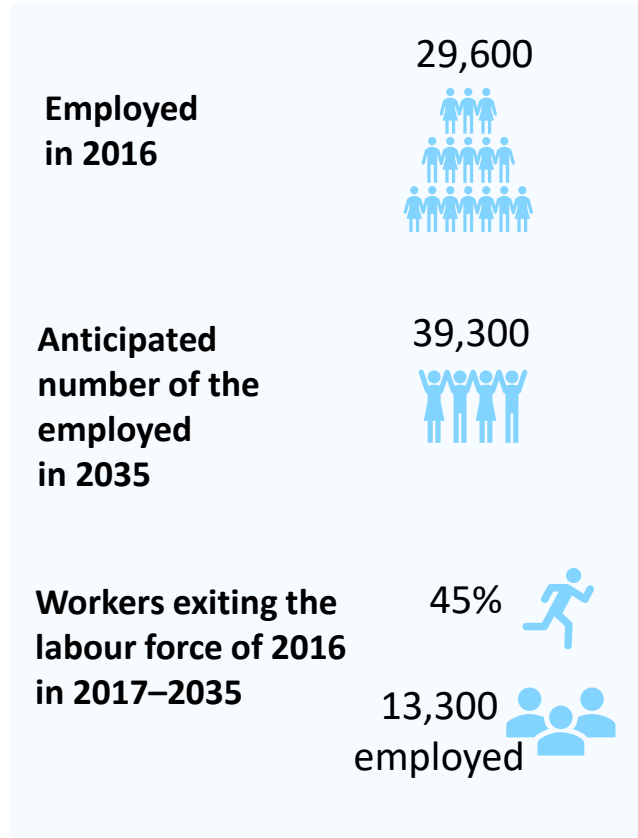


# Education, culture and communications



# Communication and publishing activities 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



- 39% Universities of applied sciences
- 38% Universities
- 24% Vocational education and training

# Education 2035

Need for new labour force and the education and training needs of new labour force



**Employed  
in 2016**

219,000



**Anticipated  
number of the  
employed  
in 2035**

193,500



**Workers exiting the  
labour force of 2016  
in 2017–2035**

50%



110,300  
employed



**How many new workers  
will be needed (vacancies)  
in 2017–2035?**

84,600



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

**Education and training needs  
in 2017–2035 (%)**



**65% Universities**

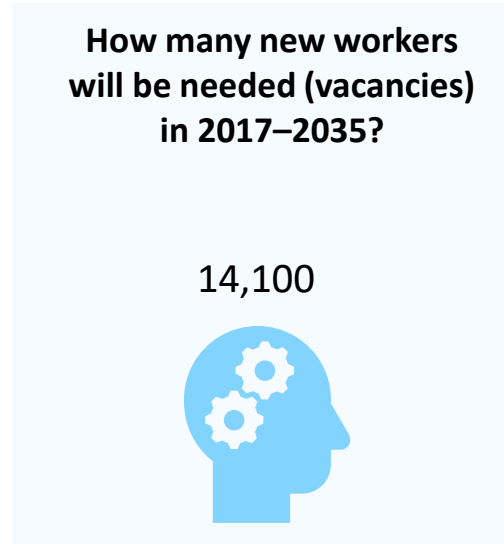
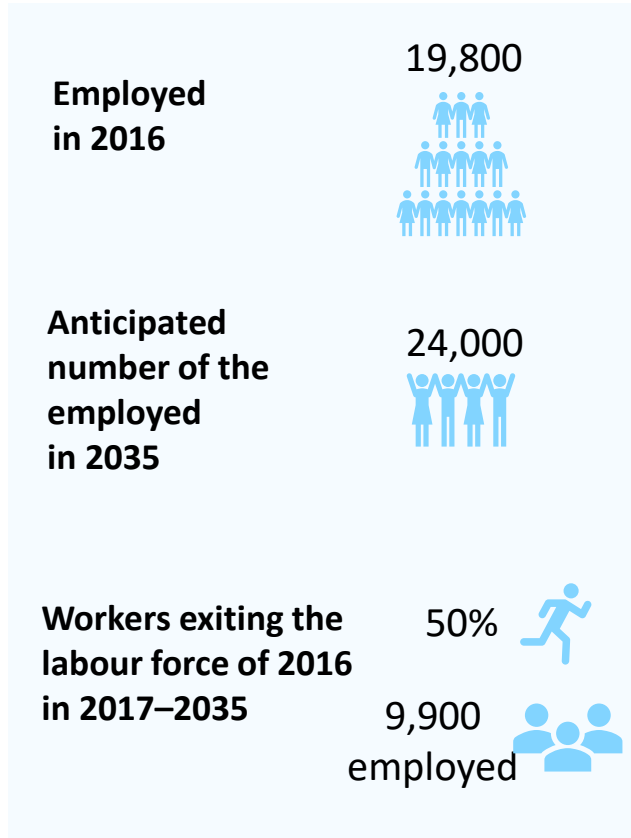
**19% Vocational education  
and training**

**16% Universities of  
applied sciences**

The figures for labour needs are averages (excluding statistical data on the employed and exit data from 2016).

# Arts and entertainment activities 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

## Education and training needs in 2017–2035 (%)



47%	Universities
31%	Universities of applied sciences
22%	Vocational education and training



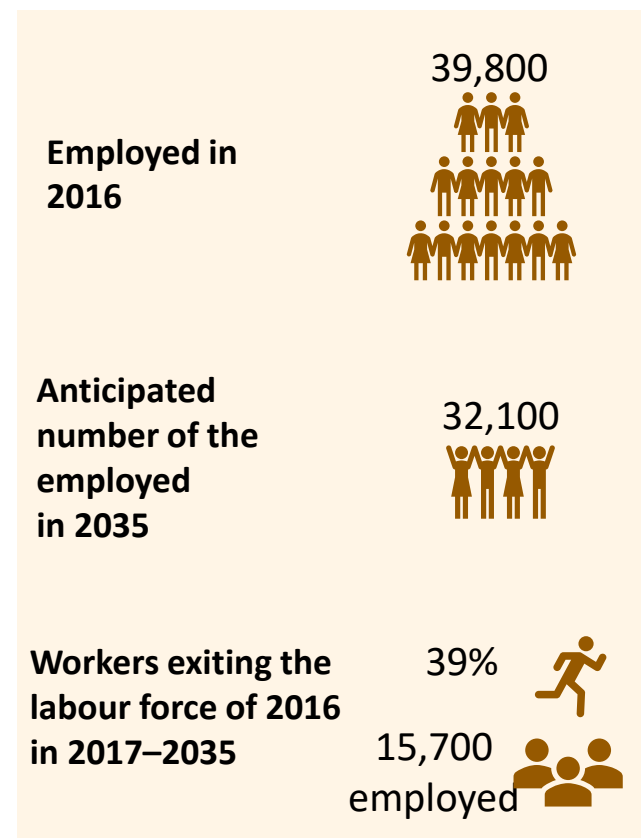
# Traffic and logistics





# Trade and repair of motor vehicles 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



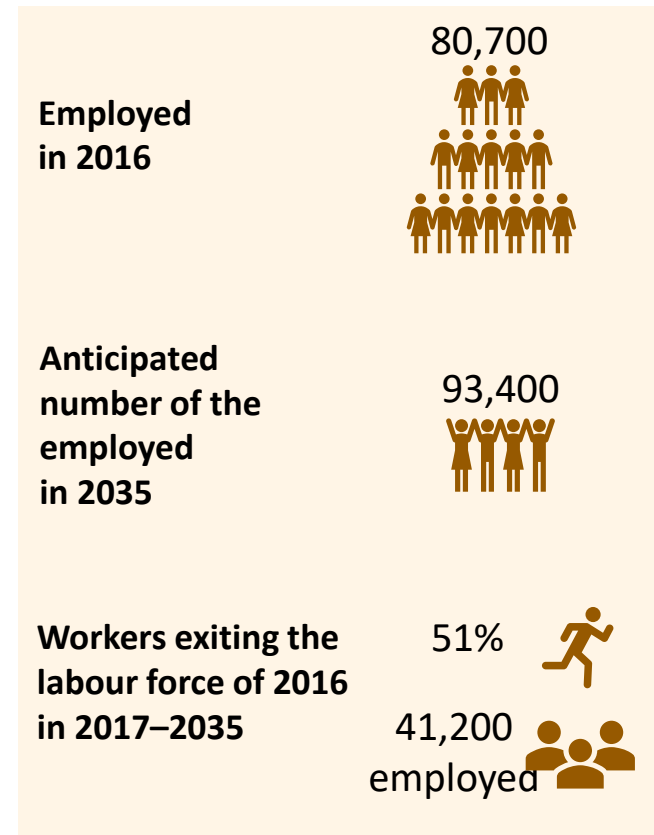
72%	Vocational education and training
25%	Universities of applied sciences
4%	Universities





# Traffic 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



- 69% Vocational education and training
- 16% Other education and training
- 12% Universities of applied sciences
- 3% Universities



# Warehousing and postal activities 2035

Need for labour force and the education and training needs of new labour force



Education and training needs of new labour force

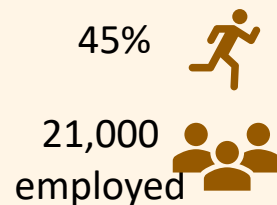
Employed  
in 2016



Anticipated  
number of the  
employed  
in 2035



Workers exiting the  
labour force of 2016  
in 2017–2035




How many new workers  
will be needed (vacancies)  
in 2017–2035?

15,200



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs  
in 2017–2035 (%)



60%	Vocational education and training
19%	Universities of applied sciences
18%	Other education and training
3%	Universities

**Accommodation, food,  
beverage and tourism services**

A decorative graphic consisting of thick, wavy, overlapping lines in green and blue, creating a dynamic, flowing shape that frames the text on the left.



# Accommodation 2035

Need for labour force and the education and training needs of new labour force



**How many new workers will be needed (vacancies) in 2017–2035?**

5,000



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

**Education and training needs in 2017–2035 (%)**

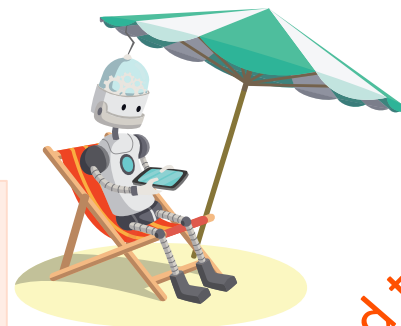


52%	Vocational education and training
45%	Universities of applied sciences
2%	Universities
2%	Other education and training



# Travel agency and tour operator activities 2035

Need for labour force and the education and training needs of new labour force



Employed  
in 2016



Anticipated  
number of the  
employed  
in 2035



Workers exiting the  
labour force of 2016  
in 2017–2035

44%



1,800  
employed



How many new workers  
will be needed (vacancies)  
in 2017–2035?

2,700



Need for new labour force =  
change in the number of the  
employed in 2016–2035, to which  
the numbers exiting the labour  
market were added.

Education and training needs of new labour force

Education and training needs  
in 2017–2035 (%)



49%

Universities of  
applied sciences

32%

Vocational education  
and training

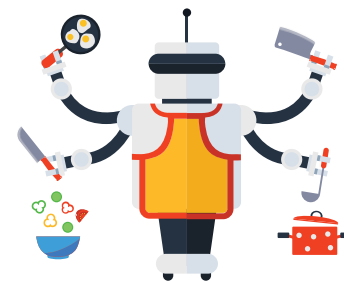
19%

Universities



# Food service activities 2035

Need for labour force and the education and training needs of new labour force



Employed  
in 2016



Anticipated  
number of the  
employed  
in 2035



Workers exiting the  
labour force of 2016  
in 2017–2035



How many new workers  
will be needed (vacancies)  
in 2017–2035?

33,200



Need for new labour force =  
change in the number of the  
employed in 2016–2035, to which  
the numbers exiting the labour  
market were added.

Education and training needs of new labour force

Education and training needs  
in 2017–2035 (%)



71%	Vocational education and training
24%	Universities of applied sciences
3%	Universities
3%	Other education and training



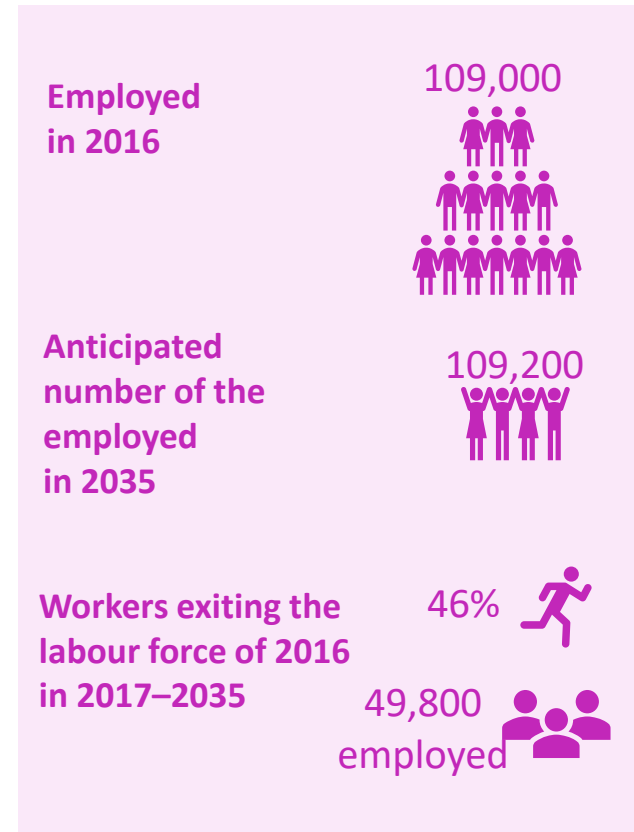
**Built environment**





# Construction and design of buildings 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



## Education and training needs of new labour force

### Education and training needs in 2017–2035 (%)

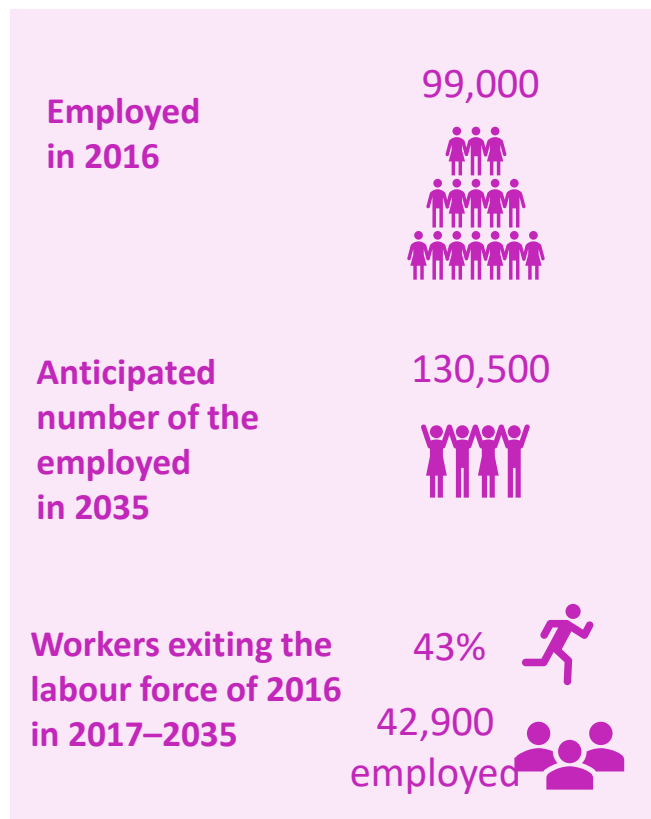


- 43% Universities of applied sciences
- 35% Vocational education and training
- 22% Universities



# Civil engineering 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



52%

Vocational education and training

34%

Universities of applied sciences

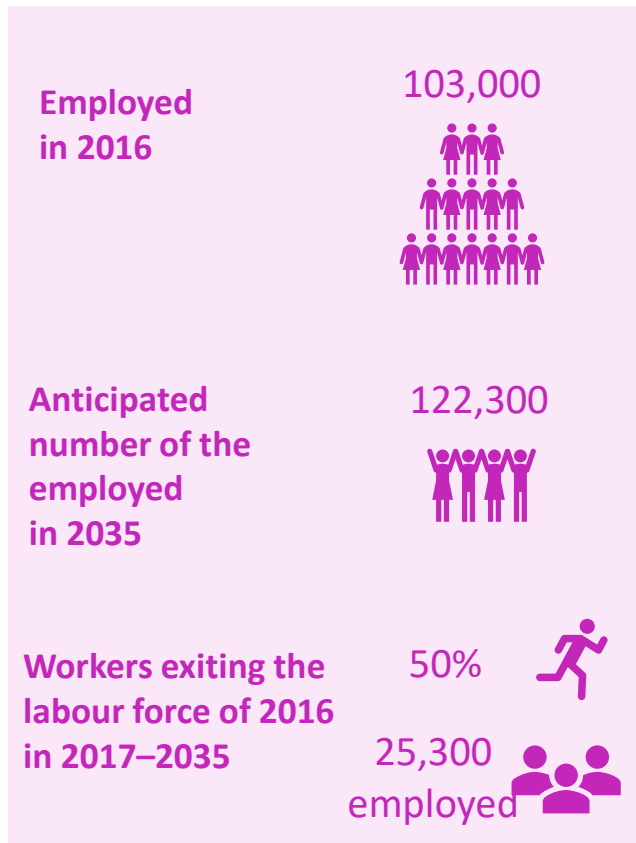
14%

Universities

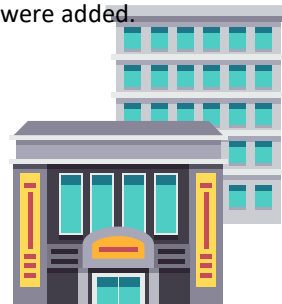


# Real estate activities 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)

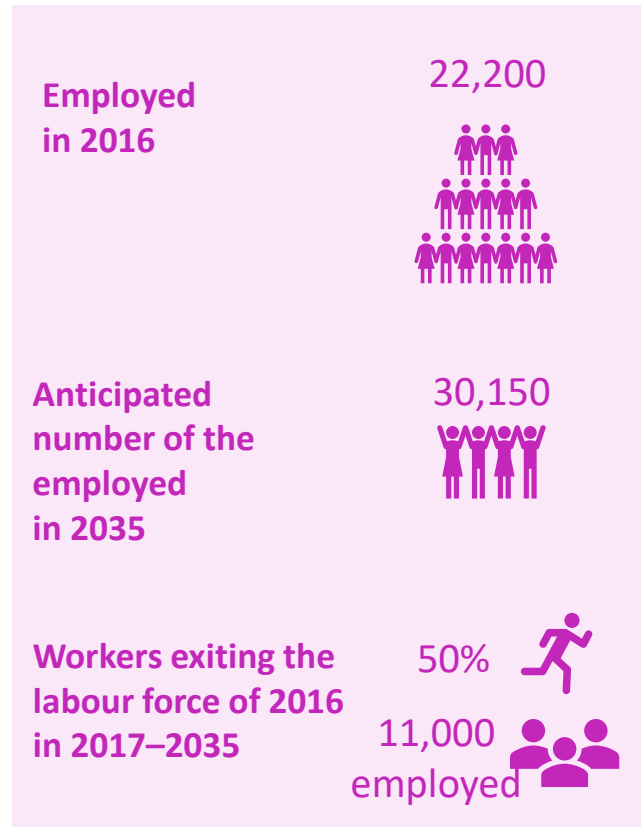


- 54% Vocational education and training
- 37% Universities of applied sciences
- 9% Universities



# Public utility services and waste management 2035

Need for labour force and the education and training needs of new labour force

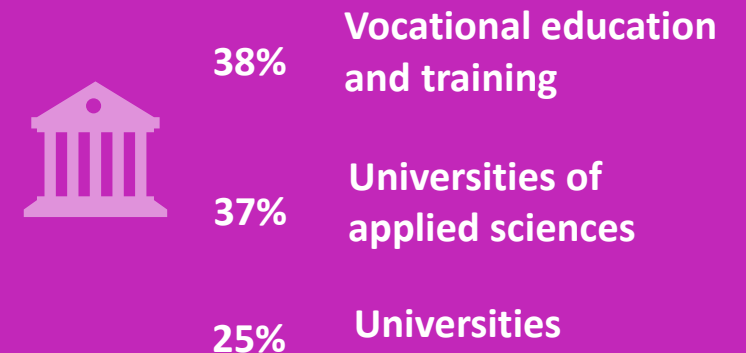


Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



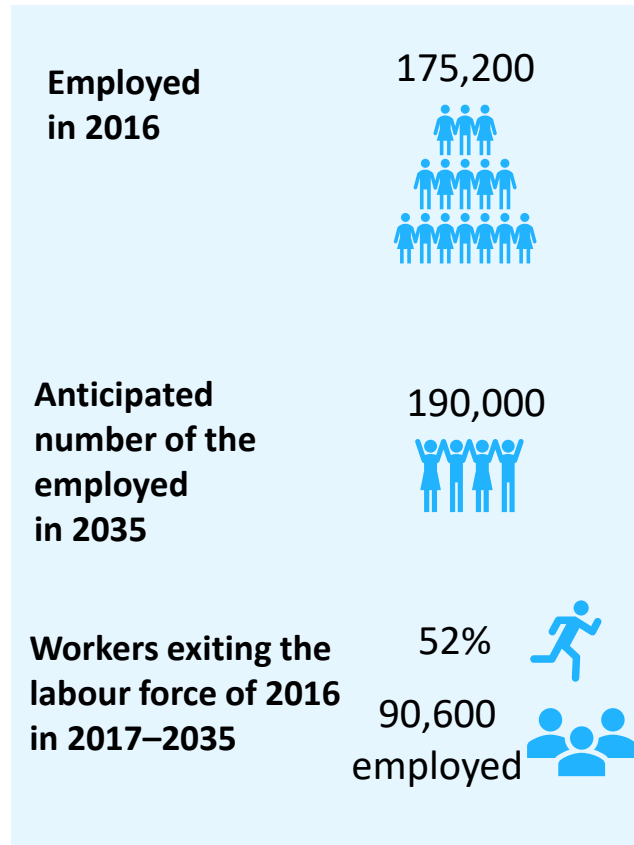
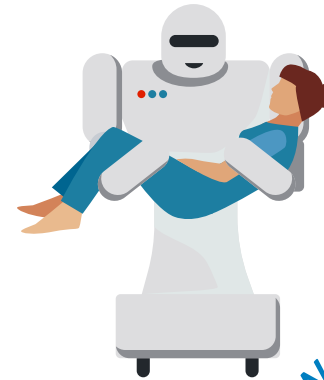
# Social, health and well-being services





# Health services 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)

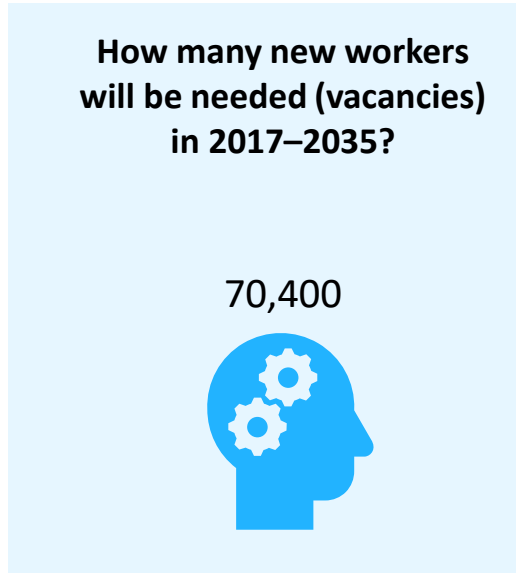
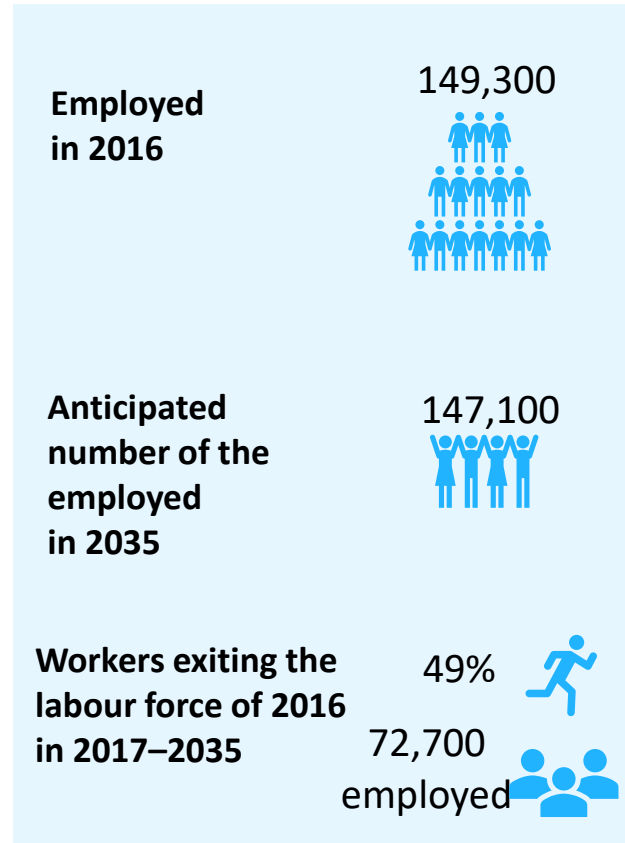
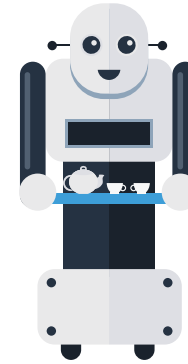


56%	Universities of applied sciences
26%	Vocational education and training
18%	Universities



# Social services 2035

Need for labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



- 64% Vocational education and training
- 27% Universities of applied sciences
- 6% Universities
- 3% Other education and training



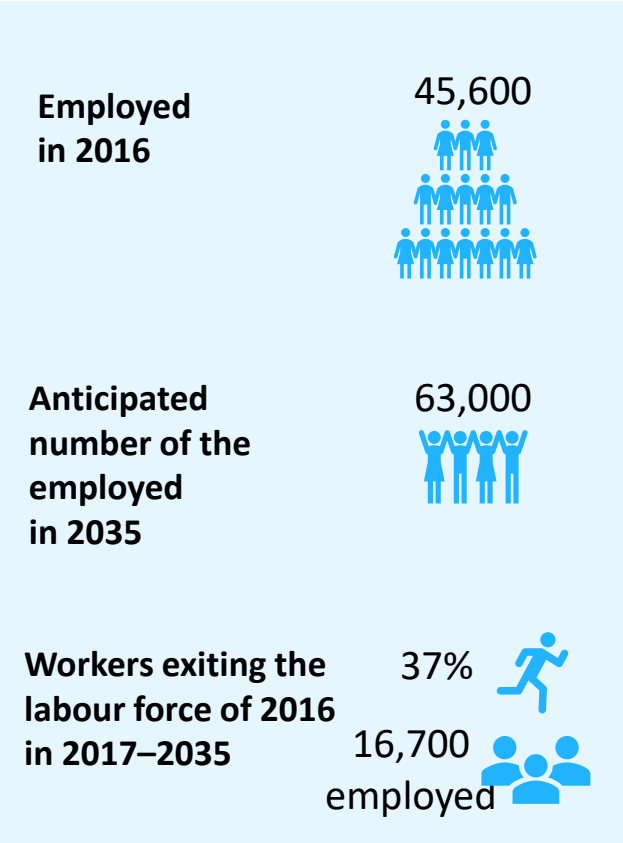


# Personal, sports and recreational services 2035

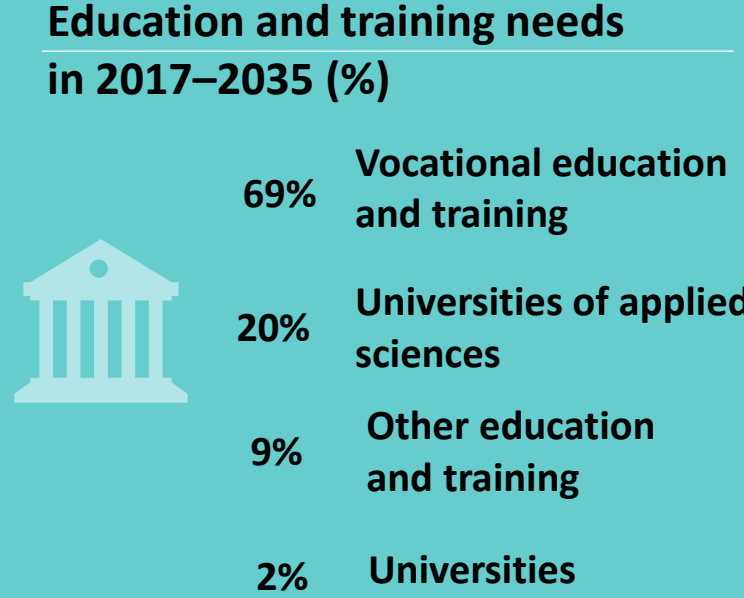
Need for labour force and the education and training needs of new labour force



Education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



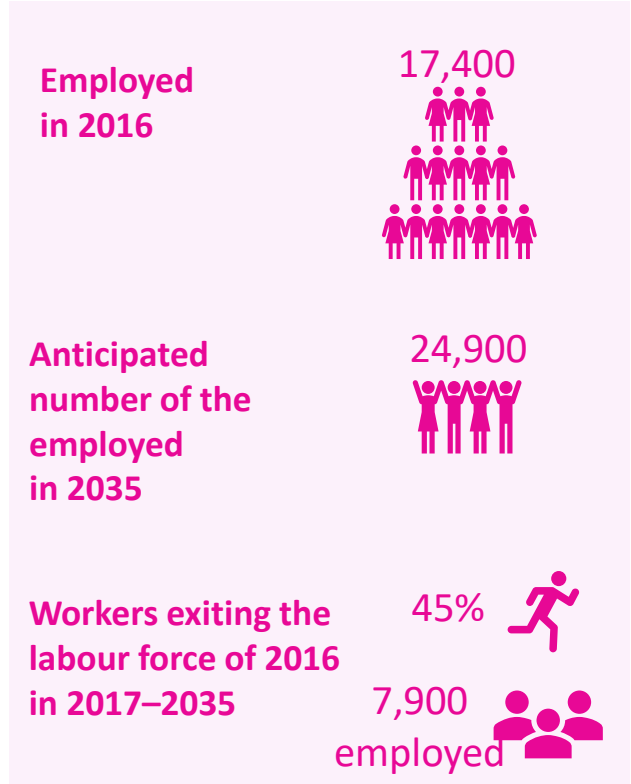
# Technology industries and services



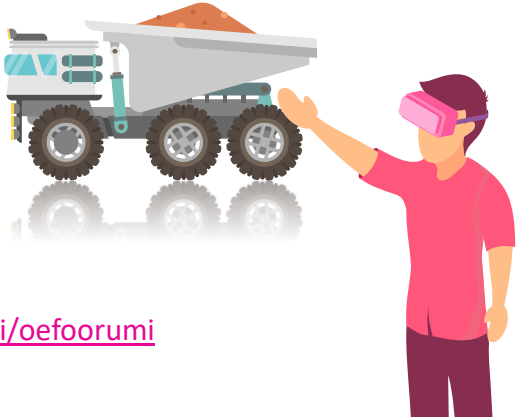


# Mining of ores and refining of metals 2035

Need for new labour force and the education and training needs of new labour force

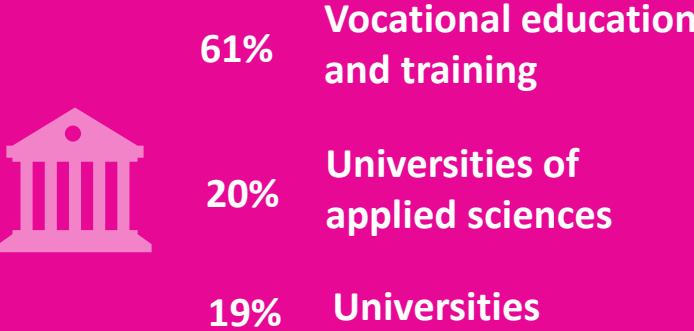


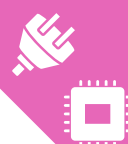
Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



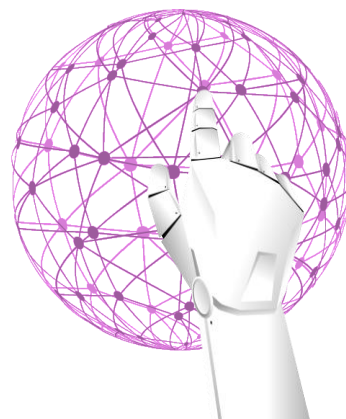


# Manufacture of electrical and electronic equipment 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



*Education and training needs of new labour force*

## Education and training needs in 2017–2035 (%)

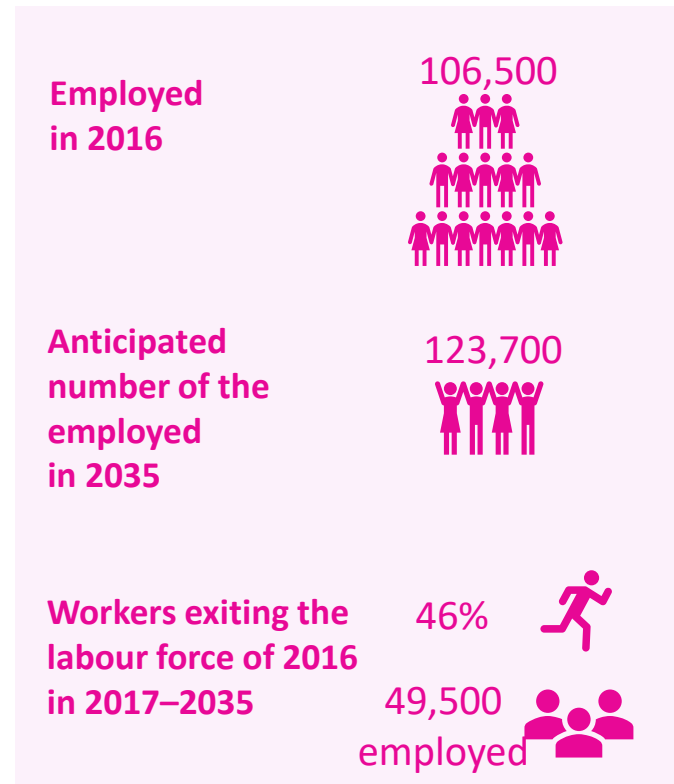


- 42% Universities
- 35% Universities of applied sciences
- 23% Vocational education and training

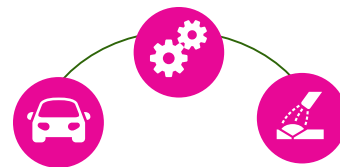


# Manufacture of metal products, machinery and vehicles 2035

Need for new labour force and the education and training needs of new labour force

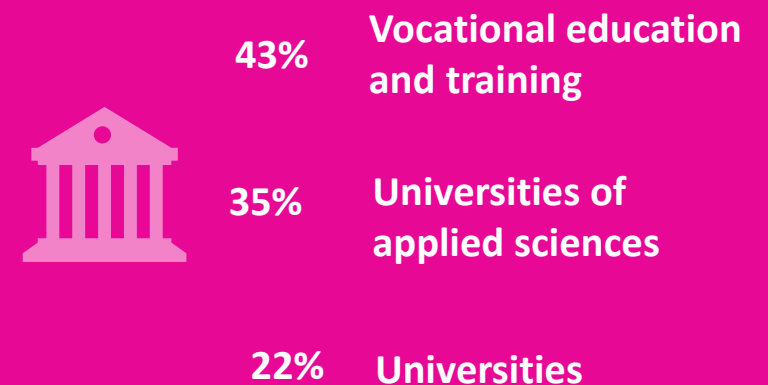


Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

## Education and training needs in 2017–2035 (%)



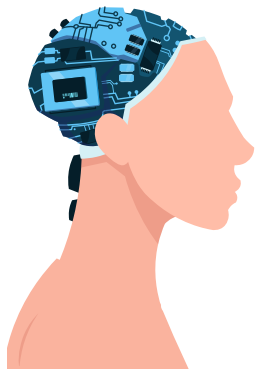


# Telecommunications, software and data services 2035

Need for new labour force and the education and training needs of new labour force

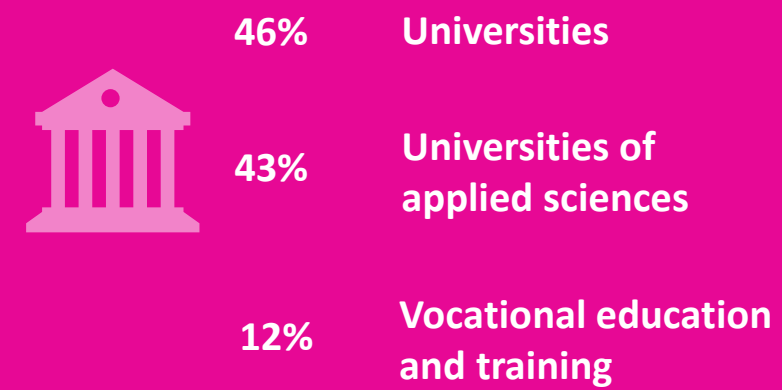


Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



## Education and training needs of new labour force

### Education and training needs in 2017–2035 (%)

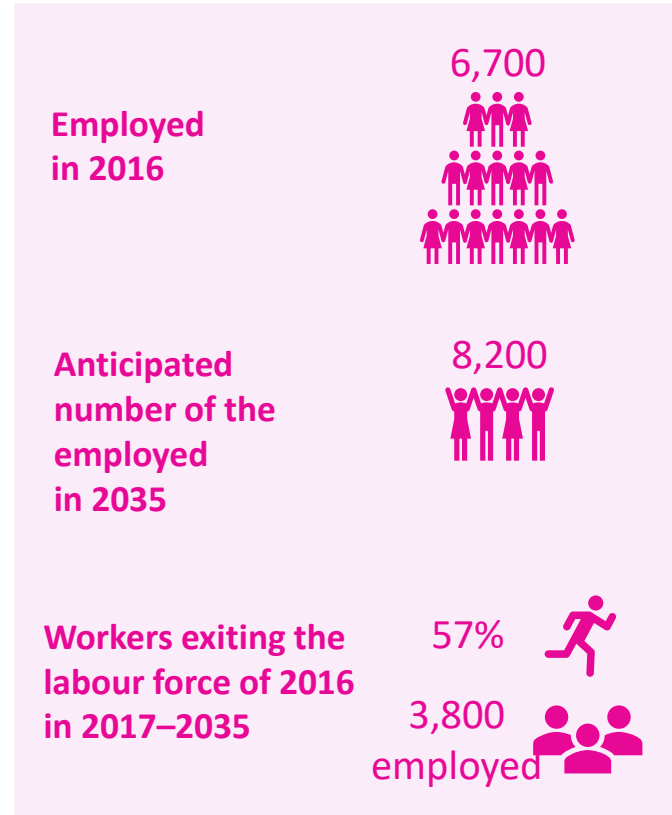


# Process industry and manufacturing

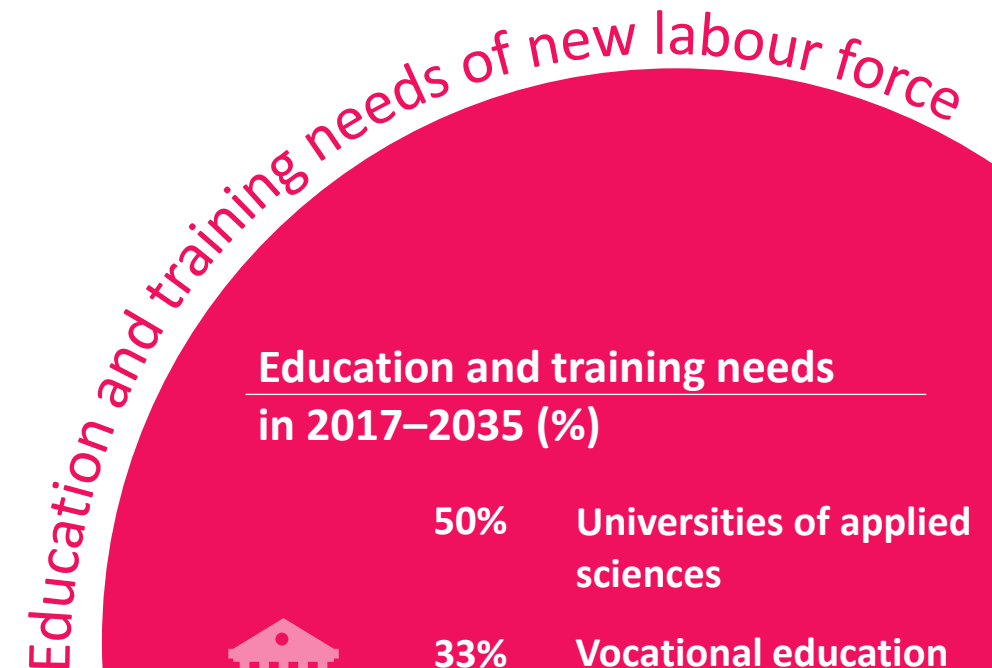
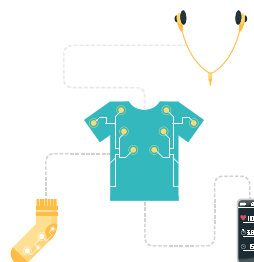


# Manufacture of clothes and textiles 2035

Need for new labour force and the education and training needs of new labour force



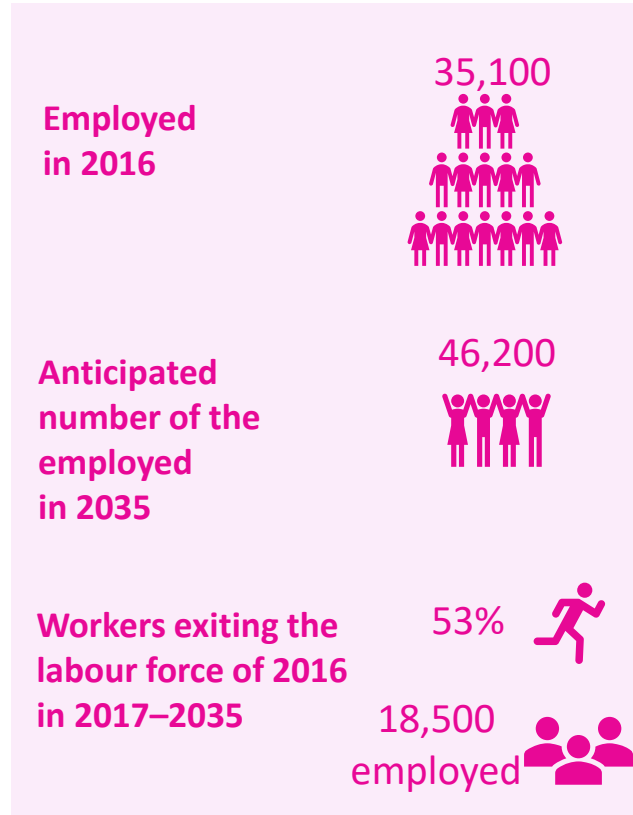
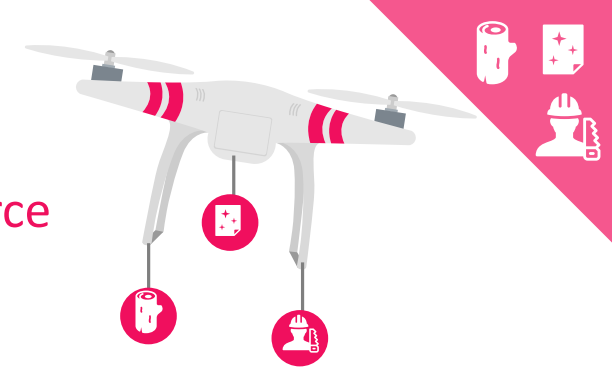
Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.





# Manufacture of paper and sawn timber 2035

Need for new labour force and the education and training needs of new labour force



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.

## Education and training needs of new labour force

### Education and training needs in 2017–2035 (%)



67%	Vocational education and training
22%	Universities of applied sciences
11%	Universities



# Manufacture of chemical products 2035

Need for new labour force and the education and training needs of new labour force

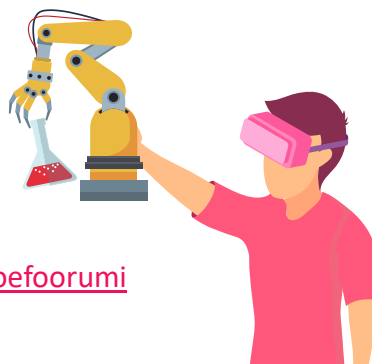


**How many new workers will be needed (vacancies) in 2017–2035?**

46,300



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

**Education and training needs in 2017–2035 (%)**



35%

**Universities**

33%

**Universities of applied sciences**

33%

**Vocational education and training**



# Manufacture of furniture and other manufacturing\* 2035

Need for new labour force and the education and training needs of new labour force



How many new workers will be needed (vacancies) in 2017–2035?

4,900



Need for new labour force = change in the number of the employed in 2016–2035, to which the numbers exiting the labour market were added.



Education and training needs of new labour force

Education and training needs in 2017–2035 (%)



- 65% Vocational education and training
- 30% Universities of applied sciences
- 5% Universities

\*includes the manufacture of jewellery, musical instruments, sports goods, games and toys, medical and dental instruments and safety equipment

! Finnish National Agency for Education, [oph.fi/oefoorumi](http://oph.fi/oefoorumi)

