National Forum for Skills Anticipation – Deck of skills cards

What are skills cards?

- Skills cards contain future skills that were compiled and evaluated by the anticipation groups of the National Forum for Skills Anticipation.

- Skills evaluations were produced with a survey and expert workshops.

- Skills are organised on the basis of sector groups. There are 33 sector groups but skills evaluations were not created for all groups.

- The skills on the cards are generic skills, skills needed in working life and digital skills.

- The cards list the growing and key skills needs in each sector group in 2035.

- More detailed sector-specific skills can be found in the National Forum for Skills Anticipation's sector materials

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National Forum for Skills Anticipation

- Co-operative body appointed by the Ministry of Education and Culture for the term 1 January 2017–31 December 2020

- Nine anticipation groups that cover all sectors in Statistics Finland's Standard Industrial Classification (TOL 2008)

- All anticipation groups have 16 members and 16 deputy members

- The anticipation groups produce information about skills and education needs of future working life

Natural resources, food production and environment

# Agriculture, fishing and veterinary activities 2035

Growing skills needs

Generic and working life skills

- resource efficiency and circular economy skills
- ability to utilise digital platforms
- skills related to the management and control of digital operations
- interaction and communication skills
- cybersecurity: skills related to the protection of personal data and privacy
- ability to use and utilise robotics and sensor technology

- multicultural skills
- seeing the big picture
- business skills
- innovation skills
- problem-solving skills

Basic digital skills

- digital communication skills
- digital co-operation skills
- information searching skills
- digital information sharing skills
- information management skills
- information evaluation skills
- skills related to the protection of digital tools and content
- skills related to the solving of technical problems
- ability to apply digital tools
- understanding of digital technology and the environmental impact of its use
- ability to use digital technology creatively

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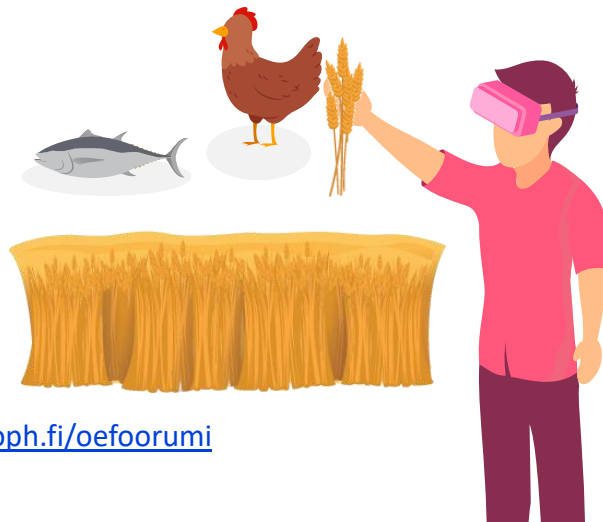
Key skills needs

- Utilisation of Big Data and artificial intelligence
- Ability to use digital technology creatively
- Digital communication skills
- Ability to utilise digital platforms and skills related to their management and control
- Innovation skills (ability to generate new ideas and apply them to create added economic value)
- Cybersecurity: Skills related to the protection of personal data and privacy
- Business skills
- Multicultural skills
- Problem-solving skills
- Decision-making ability
- Resource efficiency and circular economy skills
- Ability to use and utilise robotics and sensor technology
- Digital information sharing skills
- Interaction and communication skills

Forestry 2035

Growing skills needs

Generic and working life skills

- people and competence management and coaching skills
- co-operation skills
- organisation skills
- leadership skills
- innovation skills
- ability to utilise digital solutions
- the sector's role in society and public dialogue
- self-regulation

- customer service skills
- business skills
- development and management of personal competence
- skills in customer-oriented development of services

Basic digital skills

- information evaluation skills
- digital communication skills
- knowledge of copyrights and licences
- information management skills
- digital information sharing skills
- ability to identify digital skills gaps
- digital co-operation skills
- ability to use digital technology creatively

Key skills needs

- Value chain skills
- Skills in customer-oriented development of services
- Customer service skills
- Development of expert services
- Skills related to the management and control of digital operations
- People and competence management and coaching skills
- Self-regulation
- Leadership skills
- Business skills
- Marketing skills
- Sales skills
- Co-operation skills
- Environmental skills

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Manufacture of food products 2035

Growing skills needs

Generic and working life skills

- skills related to the management and control of digital operations
- ability to utilise digital solutions
- ability to utilise digital platforms
- sustainable development and responsibility
- seeing the big picture
- automation management skills
- information management and analysis skills
- cost management
- creativity

Basic digital skills

- ability to develop digital content
- ability to apply digital tools
- ability to use digital technology creatively
- understanding of digital technology and the environmental impact of its use
- digital co-operation skills
- programming skills
- digital communication skills
- skills related to the re-refining and integration of digital content
- active digital citizenship
- skills related to the protection of physical and mental health against risks associated with digital environments and technology

Key skills needs

- Ability to utilise digital solutions
- Skills related to the re-refining and integration of digital content
- Ability to use digital technology creatively
- Ability to apply digital tools
- Development and management of personal competence
- Skills related to the protection of personal data and privacy
- Innovation skills (ability to generate new ideas and apply them to create added economic value)
- Sustainable development and responsibility
- Cost management
- Manual skills
- Business skills
- Logistics skills

Business and administration

Trade 2035

Growing skills needs

Generic and working life skills

- time management skills
- analytical thinking skills
- skills in customer-oriented development of services
- development and management of personal competence
- ability to utilise digital platforms
- entrepreneurship skills
- project management skills

- multiprofessional skills
- business skills
- seeing the big picture
- flexibility
- interaction and communication skills
- self-regulation

Basic digital skills

- information evaluation skills
- digital identity management skills
- ability to identify digital skills gaps
- knowledge of copyrights and licences
- skills related to the protection of personal data and privacy
- digital co-operation skills
- ability to use digital technology creatively

Key skills needs

- Customer service skills
- Digital identity management skills
- Ability to utilise digital platforms
- Ability to utilise digital solutions
- Development and management of personal competence
- Self-regulation
- People and competence management and coaching skills
- Creativity
- Change process skills
- Problem-solving skills
- Information evaluation skills
- Information management and analysis skills

Financial and insurance services 2035

Growing skills needs

Generic and working life skills

- ethicality and sustainable development
- self-management
- ability to apply technology, robotics and artificial intelligence
- customer focus/understanding of the customer experience
- people and competence management and coaching skills

- co-operation skills
- ability to learn
- creativity
- ability to inspire and motivate

Basic digital skills

- trust – digital partnership
- application of data
- digital information sharing skills
- netiquette
- skills related to the protection of personal data and privacy
- ability to apply digital tools
- understanding of digital technology and the environmental impact of its use
- digital co-operation skills
- digital communication skills
- active digital citizenship
- understanding of digital structures/context/situations/infrastructure
- information management skills
- information evaluation skills
- knowledge of copyrights and licences

- ability to identify digital skills gaps
- ability to use digital technology creatively
- skills related to the re-refining and integration of digital content
- ability to develop digital content
- digital identity management skills

Key skills needs

- Customer focus/understanding of the customer expe
- Self-management
- Skills in customer-oriented development of services
- Application of data
- Understanding of digital structures, context, situation and infrastructure
- Ethicality and sustainable development
- Ability to apply technology, robotics and artificial intelligence
- Trust – digital partnership
- Creativity
- Management of one's own digital footprint
- Identification of own skills and their strengthening
- Information management and analysis skills
- Social skills
- Curiosity
- Co-operation skills

Business and development services for business life 2035

Growing skills needs

Generic and working life skills

- analytical thinking skills
- skills related to the management and control of digital operations
- robotics, coding and the utilisation of artificial intelligence
- ability to utilise digital solutions
- ability to utilise digital platforms
- skills related to the further refining of AI-guided legal services
- management of remote and virtual services
- entrepreneurship skills
- stress tolerance
- critical thinking skills
- self-regulation

- time management
- ethicality
- environmental skills
- process competence
- identification of the customer's actual needs
- counselling skills
- acting in international multicultural networks
- innovation skills

Basic digital skills

- information management skills
- information evaluation skills
- skills related to the re-refining and integration of digital content
- ability to develop digital content
- digital co-operation skills
- digital communication skills
- digital information sharing skills
- digital identity management skills
- skills related to the protection of personal data and privacy

- ability to apply digital tools
- active digital citizenship

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Key skills needs

- Stress tolerance
- Time management skills
- Skills related to professional ethics
- Analytical thinking skills
- Digital co-operation skills
- Ability to utilise digital solutions
- Ethicality and responsibility
- Critical thinking skills
- Ability for lifelong learning
- Negotiation and mediation skills
- Problem-solving skills
- Ability to use robotics technology
- Understanding and management of AI-based solutions
- Information evaluation skills
- Information searching skills
- ICT skills
- Interaction and communication skills

TUOTANTO

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Rental and support services for business life 2035

Growing skills needs

Generic and working life skills

- ability to use robotics technology
- management of remote and virtual services
- skills related to the management and control of digital operations
- ability to utilise digital solutions
- ability to utilise digital platforms
- customer service skills
- skills in customer-oriented development of services
- group work skills
- flexibility

- stress tolerance
- conflict resolution skills
- pressure tolerance
- ability to react quickly
- multicultural skills
- seeing the big picture
- self-regulation

Basic digital skills

- active digital citizenship
- digital identity management skills
- netiquette
- digital communication skills
- digital information sharing skills
- digital co-operation skills
- ability to identify digital skills gaps
- understanding of digital technology and the environmental impact of its use
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- skills related to the protection of personal data and privacy

- skills related to the protection of digital tools and content
- ability to use digital technology creatively
- ability to apply digital tools
- knowledge of copyrights and licences
- skills related to the re-refining and integration of digital content
- ability to develop digital content

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Key skills needs

- Skills related to professional ethics
- Skills in customer-oriented development of services
- Ethicality
- Management of remote and virtual services
- Digital identity management skills
- Skills related to the re-refining and integration of digital content
- Ability to utilise digital platforms
- Flexibility
- Critical thinking skills
- Multicultural skills
- Pressure tolerance
- Stress tolerance

Public administration 2035

Growing skills needs

Generic and working life skills

- development and management of personal competence
- anticipation skills
- ability to learn
- creativity
- innovation skills
- network, partnership and stakeholder skills
- management of remote and virtual services
- skills related to the management and control of digital operations

- ability to utilise digital solutions
- ability to utilise digital platforms
- self-regulation
- analytical thinking skills

Basic digital skills

- information evaluation skills
- digital information sharing skills
- information searching skills
- skills related to the protection of personal data and privacy
- ability to identify digital skills gaps
- digital communication skills
- skills related to the re-refining and integration of digital content
- ability to develop digital content
- active digital citizenship

Key skills needs

- Analytical thinking skills
- Active digital citizenship
- Ability to develop digital content
- Digital process and solution skills
- Skills related to the protection of digital tools and content
- Anticipation skills
- Development and management of personal competence
- Innovation skills
- Cognitive ergonomics
- Creativity
- Counselling, guidance and management skills
- Ability to learn
- Information evaluation skills
- Digital information sharing skills

KAAVAKE

Education, culture and communications

Communications and publishing activities 2035

Growing skills needs

Generic and working life skills

- ability to use digital technology creatively and ethically
- ability to utilise digital solutions
- ability to utilise digital platforms, applications, systems and devices
- skills related to the management and control of digital operations
- innovation skills and creativity
- flexible teamwork skills preparedness for continuous learning
- skills related to the evaluation, searching, re-refining and integration of digital content
- time management skills
- multicultural skills

- problem-solving skills
- information management and analysis skills
- interaction and communication skills
- co-operation skills
- development and management of personal competence
- people and competence management and coaching skills

Basic digital skills

- information searching, evaluation and editing skills
- ability to use digital technology creatively and ethically
- knowledge of copyrights and licences
- active digital citizenship
- digital identity management skills
- digital co-operation skills
- skills related to the protection of digital tools and content

- digital information sharing skills
- information management skills

Key skills needs

- Ability to utilise digital platforms, applications, systems and devices
- Innovation skills and creativity
- People and competence management and coaching skills
- Entrepreneurship skills
- Skills related to understanding the global perspective
- Resilience
- Ability to use digital technology creatively and ethically
- Skills related to the evaluation, searching, re-refining and integration of digital content
- Subject matter knowledge

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Education 2035

Growing skills needs

Generic and working life skills

- problem-solving skills
- ability to utilise digital platforms
- innovation skills
- analytical thinking skills
- time management skills
- ability to utilise digital solutions
- ability to use robotics technology
- ability to inspire and motivate

- critical thinking skills
- information management and analysis skills
- flexibility
- skills in customer-oriented development of services
- skills related to the management and control of digital operations

Basic digital skills

- information evaluation skills
- digital information sharing skills
- digital communication skills
- ability to develop digital content
- information searching skills
- information management skills
- ability to use digital technology creatively
- digital co-operation skills
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- active digital citizenship
- digital identity management skills
- skills related to the protection of personal data and privacy

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Key skills needs

- Analytical thinking skills
- Ability to use digital technology creatively
- Digital co-operation skills
- Ability to utilise digital platforms
- Ability to utilise digital solutions
- Ethicality
- Ability to inspire and motivate
- Utilisation of artificial intelligence (AI)
- Critical thinking skills
- Multicultural skills
- Problem-solving skills
- Information evaluation skills
- Digital information sharing skills
- Network, interaction and social skills (incl. group work skills and social skills)

Arts and entertainment activities 2035

Growing skills needs

Generic and working life skills

- innovation skills
- environmental skills
- knowledge of the principles of sustainable development
- multicultural skills
- ethicality
- problem-solving skills
- multiprofessional skills
- interaction and communication skills
- customer service skills

- ability to utilise digital solutions
- self-regulation
- seeing the big picture
- multitalentedness
- social skills
- co-operation skills

Basic digital skills

- knowledge of copyrights and licences
- information evaluation skills
- ability to develop digital content
- digital information sharing skills
- economic utilisation of technology in the sharing of cultural products and events

Key skills needs

- Ability to utilise digital solutions
- Public speaking skills
- Development and management of personal competence
- Innovation skills
- Self-regulation
- Knowledge of the principles of sustainable development
- Creativity
- Multiprofessional skills
- Multicultural skills
- Multitalentedness
- Pressure tolerance
- Process competence
- Commitment
- Stress tolerance
- Network, partnership and stakeholder skills
- Interaction and communication skills
- Information evaluation skills
- Knowledge of copyrights and licences
- Digital information sharing skills
- Digital identity management skills
- Digital communication skills
- Digital co-operation skills
- Ability to develop digital content

Traffic and logistics

Trade and repair of motor vehicles 2035

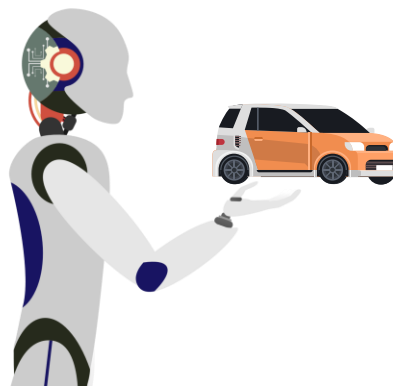## Growing skills needs

Generic and working life skills

- seeing the big picture
- organisation skills
- problem-solving skills
- ability to learn
- self-regulation
- determination
- pressure tolerance

- ability to react quickly
- ethicality
- public speaking skills
- service design skills
- creation of added value

Basic digital skills

- information searching skills
- information management skills
- ability to develop digital content
- skills related to the re-refining and integration of digital content
- knowledge of copyrights and licences
- skills related to the protection of digital tools and content
- ability to identify digital skills gaps
- digital information sharing skills
- digital communication skills
- digital co-operation skills
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- skills related to the protection of personal data and privacy
- information evaluation skills

- skills related to the solving of technical problems
- programming skills
- ability to use digital technology creatively
- ability to apply digital tools
- understanding of digital technology and the environmental impact of its use
- netiquette
- active digital citizenship

Key skills needs

- Service design and creation of added value
- People and competence management and coaching skills
- Innovation skills
- Leadership skills
- Seeing the big picture
- Conflict resolution skills
- Skills related to the management and control of digital operations
- Ability to use digital technology creatively
- Ability to apply digital tools
- Programming skills
- Management of remote and virtual services
- Development and management of personal competence
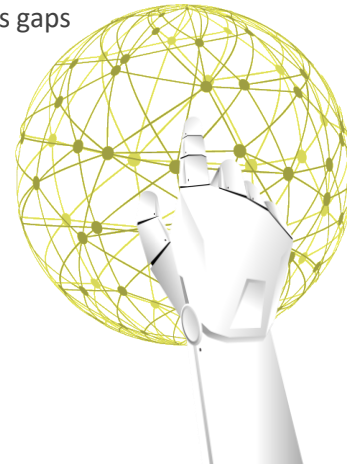- Ability to learn
- Multiprofessional skills

Traffic 2035

Growing skills needs

Generic and working life skills

- automation management skills
- ability to use robotics technology
- ability to utilise digital platforms
- multitalentedness
- multiprofessional skills
- seeing the big picture
- co-operation skills
- interaction and communication skills
- customer service skills
- problem-solving skills
- skills in customer-oriented development of services
- knowledge of the principles of sustainable development

- development and management of personal competence
- creativity – ability to see things from new perspectives and built something new, original and well-functioning on the basis of them
- time management skills
- change process skills
- management of remote and virtual services
- ability to learn

Basic digital skills

- identification and management of cyber threats
- understanding of digital technology and the environmental impact of its use
- skills related to the protection of personal data and privacy
- information evaluation skills
- information searching skills
- digital co-operation skills
- ability to use digital technology creatively
- ability to apply digital tools

- digital communication skills
- information management skills
- ability to identify digital skills gaps

Key skills needs

- Information evaluation skills
- Information searching skills
- Seeing the big picture
- Problem-solving skills
- Ability to learn
- Automation management skills
- Ability to utilise digital solutions
- Skills in customer-oriented development of services
- Co-operation skills
- Interaction and communication skills
- Environmental skills
- Identification and management of cyber threats

Warehousing and postal activities 2035

Growing skills needs

Generic and working life skills

- information management and analysis skills
- innovation skills
- flexibility
- ability to react quickly
- leadership skills
- ability to inspire and motivate
- skills related to the management and control of digital operations
- ability to utilise digital solutions
- customer service skills
- skills in customer-oriented development of services
- time management skills
- conflict resolution skills

- problem-solving skills
- creativity
- multitalentedness
- multiprofessional skills
- seeing the big picture
- people and competence management and coaching skills
- development and management of personal competence
- ability to learn
- cost management
- automation management skills

Basic digital skills

- information evaluation skills
- skills related to the protection of digital tools and content
- digital identity management skills
- information searching skills
- ability to develop digital content
- skills related to the re-refining and integration of digital content
- digital communication skills
- network and partnership skills in digital operating environments
- digital information sharing skills
- information management skills
- skills related to the solving of technical problems

- knowledge of copyrights and licences
- netiquette
- skills related to the protection of personal data and privacy
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- ability to apply digital tools
- ability to use digital technology creatively
- ability to identify digital skills gaps
- digital co-operation skills
- understanding of digital technology and the environmental impact of its use

Key skills needs

- Analytical thinking skills
- Seeing the big picture
- Multitalentedness
- Change process skills
- Automation management skills
- Skills related to the management and control of digital operations
- Knowledge of the principles of sustainable development
- Manual skills
- Quality management skills
- Pressure tolerance
- Ability to react quickly
- Time management skills
- Skills in customer-oriented development of services
- Network, partnership and stakeholder skills
- Network and partnership skills in digital operating environments

Accommodation, food, beverage and tourism services

Accommodation 2035

Growing skills needs

Generic and working life skills

- ability to utilise digital solutions
- network, partnership and stakeholder skills
- sales skills
- customer service skills
- knowledge of the principles of sustainable development
- skills related to the management and control of digital operations
- co-operation skills
- interaction and communication skills

- problem-solving skills
- multicultural skills

Basic digital skills

- skills related to the re-refining and integration of digital content
- digital communication skills
- digital identity management skills
- information management skills
- digital information sharing skills
- information evaluation skills
- netiquette
- active digital citizenship
- skills related to the protection of personal data and privacy
- ability to develop digital content

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Key skills needs

- Artesanal and experience creation skills
- Customer service skills
- Skills related to the re-refining and integration of digital content
- Skills related to the management and control of digital operations
- Ability to apply digital tools
- Innovation skills
- Critical thinking skills
- Multicultural skills
- Change process skills
- Sales skills
- Information evaluation skills
- Oral and written ability to express information
- Work ability skills, life management
- Interaction and communication skills

Travel agency and tour operator activities 2035

Growing skills needs

Generic and working life skills

- ability to learn
- flexibility
- self-regulation
- ability to utilise digital solutions
- ability to utilise digital platforms
- ability to use robotics technology
- skills related to the management and control of digital operations
- automation management skills

- innovation skills
- management of remote and virtual services
- creativity
- seeing the big picture
- knowledge of the principles of sustainable development
- ability to inspire and motivate

Basic digital skills

- ability to use digital technology creatively
- ability to develop digital content
- digital information sharing skills
- ability to apply digital tools
- skills related to the re-refining and integration of digital content
- digital identity management skills
- digital co-operation skills
- information evaluation skills
- ability to identify digital skills gaps
- information management skills
- understanding of digital technology and the environmental impact of its use

Key skills needs

- Ability to use digital technology creatively
- Information evaluation skills
- Ability to utilise digital platforms
- Ability to utilise digital solutions
- Self-regulation
- Skills in customer-oriented development of services
- Innovation skills
- Flexibility
- Knowledge of the principles of sustainable development
- Creativity
- Ability to use robotics technology
- Network, partnership and stakeholder skills
- Business skills
- Ability to learn
- Development and management of personal competence

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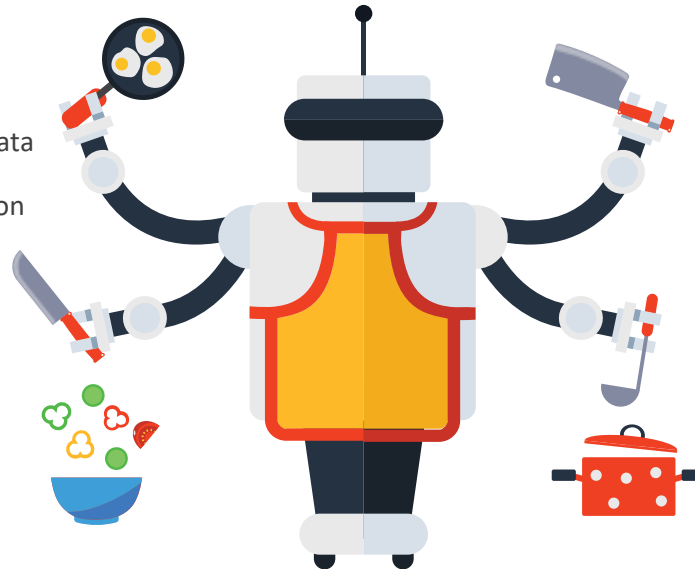
Food service activities 2035

Growing skills needs

Generic and working life skills

- skills related to the management and control of digital operations
- skills in customer-oriented development of services
- multiprofessional skills
- self-regulation
- customer service skills
- time management skills

- stress tolerance
- pressure tolerance
- problem-solving skills
- creativity
- business skills
- ability to utilise digital solutions
- ability to utilise digital platforms

Basic digital skills

- information evaluation skills
- skills related to the protection of personal data and privacy
- skills related to the re-refining and integration of digital content
- ability to apply digital tools
- digital co-operation skills
- information management skills
- digital communication skills
- digital identity management skills
- digital information sharing skills
- ability to develop digital content

Key skills needs

- Skills in customer-oriented development of services
- Skills related to the management and control of digital operations
- Multiprofessional skills
- Information management skills
- Time management skills
- Pressure tolerance
- Information evaluation skills
- Ability to apply digital tools
- Counselling, guidance and management skills
- Self-regulation
- Customer service skills
- Digital communication skills
- Problem-solving skills
- Cost management
- Seeing the big picture
- Ability to learn

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Built environment

Construction and design of buildings 2035

Growing skills needs

Generic and working life skills

- ability to utilise digital solutions
- user orientation
- ability to utilise digital platforms
- skills related to the management and control of digital operations
- skills in customer-oriented development of services
- knowledge of the principles of sustainable development
- automation management skills
- problem-solving skills

- ability and willingness to learn
- information management and analysis skills
- customer service skills
- group work skills
- innovation skills

Basic digital skills

- ability to apply digital tools
- information searching skills
- skills related to the protection of digital tools and content
- information evaluation skills
- information management skills
- ability to use digital technology creatively
- ability to identify digital skills gaps

Key skills needs

- Ability to utilise digital solutions
- Skills in customer-oriented development of services
- User orientation
- Ability to utilise digital platforms
- Skills related to the management and control of digital operations
- Knowledge of the principles of sustainable development
- Seeing the big picture
- Multicultural and internationality skills
- Development and management of personal competence
- Ability to apply digital tools
- Information searching skills
- Skills related to the protection of digital tools and content
- Information evaluation skills
- Information management skills
- Ability to use digital technology creatively

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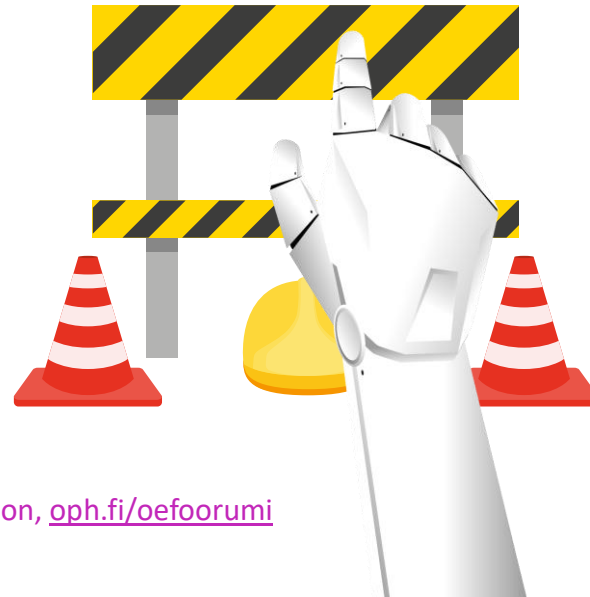
Civil engineering 2035

Growing skills needs

Generic and working life skills

- ability to utilise digital solutions
- user orientation
- ability to utilise digital platforms
- skills related to the management and control of digital operations
- skills in customer-oriented development of services
- knowledge of the principles of sustainable development
- automation management skills

- problem-solving skills
- ability and willingness to learn
- information management and analysis skills
- customer service skills
- Group work skills
- Innovation skills

Basic digital skills

- ability to apply digital tools
- information searching skills
- skills related to the protection of digital tools and content
- information evaluation skills
- information management skills
- ability to use digital technology creatively
- ability to identify digital skills gaps

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Key skills needs

- Ability to utilise digital solutions
- Skills in customer-oriented development of services
- User orientation
- Ability to utilise digital platforms
- Skills related to the management and control of digital operations
- Knowledge of the principles of sustainable development
- Seeing the big picture
- Multicultural and internationality skills
- Development and management of personal competence
- Ability to apply digital tools
- Information searching skills
- Skills related to the protection of digital tools and content
- Information evaluation skills
- Information management skills
- Ability to use digital technology creatively

Real estate activities 2035

Growing skills needs

Generic and working life skills

- skills in customer-oriented development of services
- environmental skills
- management of remote and virtual services
- interaction and communication skills
- ability to utilise digital platforms
- multicultural skills
- ability to learn

- conflict resolution skills
- sense of responsibility
- skills related to professional ethics
- leadership skills
- counselling, guidance and management skills

Basic digital skills

- active digital citizenship
- ability to use digital technology creatively
- digital communication skills
- digital co-operation skills
- ability to identify digital skills gaps
- ability to apply digital tools
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- skills related to the protection of personal data and privacy

Key skills needs

- Customer service skills
- Knowledge of the principles of sustainable development
- Interaction and communication skills
- Skills in customer-oriented development of services
- Ability to utilise digital platforms
- Environmental skills
- Active digital citizenship
- Occupational safety skills
- Multiprofessional skills
- Management of remote and virtual services

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Public utility services and waste management 2035

Growing skills needs

Generic and working life skills

- self-regulation
- skills in customer-oriented development of services
- ability to utilise digital solutions
- innovation skills
- system integration skills
- seeing the big picture
- creativity

- ability to learn group work skills
- interaction and communication skills
- co-operation skills
- multiprofessional skills
- project management skills
- ability to use robotics technology

Basic digital skills

- system integration skills
- ability to develop digital content
- ability to use digital technology creatively
- digital co-operation skills
- information evaluation skills
- digital communication skills
- ability to identify digital skills gaps
- understanding of digital technology and the environmental impact of its use
- ability to apply digital tools

Key skills needs

- Self-regulation
- Skills in customer-oriented development of services
- Innovation skills
- Creativity
- Interaction and communication skills
- Information management and analysis skills
- Anticipation skills
- Business skills
- Ethicality
- Knowledge of the principles of sustainable development
- Ability to use machinery and equipment
- System integration skills

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Social, health and well-being services

Health services 2035

Growing skills needs

Generic and working life skills

- co-operation skills
- customer service skills
- ethicality
- skills in customer-oriented development of services
- interaction and communication skills
- management of remote and virtual services
- ability to utilise digital solutions
- ability to utilise digital platforms
- time management skills

- network, partnership and stakeholder skills
- group work skills

Basic digital skills

- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- skills related to the protection of personal data and privacy
- digital communication skills
- digital co-operation skills
- information management skills
- skills related to the re-refining and integration of digital content
- information evaluation skills
- digital information sharing skills
- ability to develop digital content
- active digital citizenship
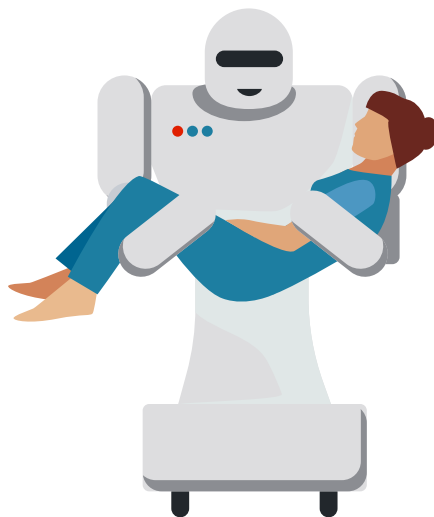
Key skills needs

- Management of remote and virtual services
- Multicultural and tolerance skills
- Knowledge of the principles of sustainable development
- Co-operation skills
- Interaction and communication skills
- Skills in customer-oriented development of services
- Ethicality
- Emotional intelligence
- Digital communication skills
- Skills related to the protection of personal data and privacy
- Active digital citizenship
- Information management skills
- Digital co-operation skills
- Skills related to the protection of physical and mental health against risks associated with digital environments and technology
- Understanding of digital technology and the environmental impact of its use

Social services 2035

Growing skills needs

Generic and working life skills

- management of remote and virtual services
- skills in customer-oriented development of services
- extensive knowledge and management of well-being technology
- skills related to well-being at work
- development and management of personal competence
- skills related to the management and control of digital operations
- ability to utilise digital solutions
- ability to utilise digital platforms

- ability to use robotics technology
- environmental skills
- ability to react quickly
- pressure tolerance
- ability to learn
- multicultural skills
- self-regulation
- public speaking skills
- time management skills

Basic digital skills

- skills related to the protection of personal data and privacy
- digital information sharing skills
- digital communication skills
- ability to identify digital skills gaps
- active digital citizenship
- information evaluation skills
- information searching skills
- digital co-operation skills

Key skills needs

- Skills in customer-oriented development of services
- Extensive knowledge and management of well-being technology
- Digital communication skills
- Ability to learn
- Pressure tolerance
- Flexibility
- Creativity
- Multitalentedness
- Skills related to professional ethics
- Multiprofessional skills
- Interaction and communication skills
- Social skills

Personal, sports and recreational services 2035

Growing skills needs

Generic and working life skills

- skills in customer-oriented development of services
- network, partnership and stakeholder skills
- ability to react quickly
- problem-solving skills
- multitalentedness
- innovation skills
- ability to utilise digital solutions
- ability to utilise digital platforms
- time management skills
- customer service skills
- people and competence management and coaching skills
- development and management of personal competence
- skills related to the management and control of digital operations

Basic digital skills

- skills related to the protection of personal data and privacy
- ability to apply digital tools
- digital information sharing skills
- digital communication skills
- information management skills
- information evaluation skills
- information searching skills
- skills related to the re-refining and integration of digital content
- ability to develop digital content
- digital identity management skills
- digital co-operation skills
- knowledge of copyrights and licences
- ability to identify digital skills gaps
- ability to use digital technology creatively
- skills related to the solving of technical problems
- skills related to the protection of digital tools and content
- netiquette
- understanding of digital technology and the environmental impact of its use
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- active digital citizenship
- programming skills

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Key skills needs

- Ability to utilise digital solutions
- Ability to inspire and motivate
- Skills in customer-oriented development of services
- Customer service skills
- Development and management of personal competence
- People and competence management and coaching skills
- Information management and analysis skills
- Ability to apply digital tools
- Digital communication skills
- Skills related to the protection of personal data and privacy
- Innovation skills
- Knowledge of copyrights and licences
- Information evaluation skills
- Digital identity management skills
- Information searching skills

Technology industries and services

Mining of ores and refining of metals 2035

Growing skills needs

Generic and working life skills

- knowledge of the principles of sustainable development
- environmental skills
- automation management skills
- ability to use robotics technology
- ability to inspire and motivate
- seeing the big picture
- creativity (ability to see things from new perspectives and built something new, original and well-functioning on the basis of them)
- ability to learn
- organisation skills
- ability to react quickly

- conflict resolution skills
- group work skills
- stress tolerance
- sense of responsibility
- interaction and communication skills
- co-operation skills
- management of remote and virtual services
- people and competence management and coaching skills
- leadership skills
- quality management skills
- multiprofessional skills
- process competence

Basic digital skills

- understanding of digital technology and the environmental impact of its use
- digital communication skills
- ability to apply digital tools
- information evaluation skills
- information searching skills

Key changes in skills needs

- Management of GPS and positioning data systems
- Ability to apply digital tools
- Machinery and equipment repair and maintenance skills
- Mechanical control (2D and 3D skills)
- Digital information sharing skills
- Multiprofessional skills
- Problem-solving skills
- Processing competence
- Occupational safety skills
- Programming skills
- Skills related to the solving of technical problems
- Ability to use digital technology creatively
- Automation technology and electrical engineering skills
- Development of energy efficiency and economic efficiency
- Development and management of personal competence

*The mining industry skills that will change most by 2025.
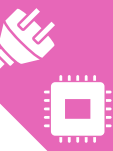
# Manufacture of electrical and electronic equipment 2035

Growing skills needs

Generic and working life skills

- ability to utilise digital solutions
- creativity
- ability to learn (in the workshop, the change was estimated to be bigger than what the survey results indicated)
- ability to use robotics technology (as above)
- analytical thinking skills
- skills in customer-oriented development of services
- A) automation management skills and B) ability to utilise digital platforms

- skills related to the management and control of digital operations
- ability to inspire and motivate
- innovation skills
- seeing the big picture
- change process skills

Basic digital skills

- information evaluation skills
- information searching skills
- ability to develop digital content
- ability to use digital technology creatively
- digital communication skills
- digital co-operation skills
- ability to identify digital skills gaps
- ability to apply digital tools
- digital information sharing skills
- skills related to the re-refining and integration of digital content
- programming skills
- skills related to the solving of technical problems
- skills related to the protection of digital tools and content

- digital identity management skills
- programming skills
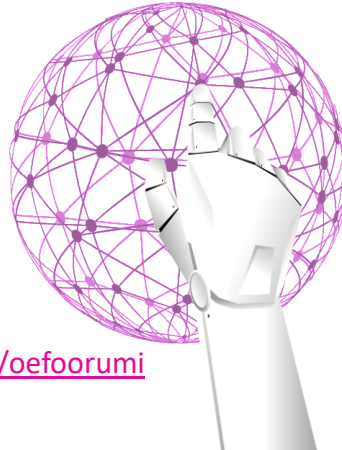
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Key skills needs

- Utilisation of digital solutions
- Creativity and innovation skills
- Skills in customer-oriented development of services and customer service skills
- Ability to utilise digital platforms, skills related to the management and control of digital operations and ability to utilise digital solutions
- Ability to learn
- Problem-solving skills
- Occupational safety
- Management of remote and virtual services
- Network, partnership and co-operation skills
- Manual skills, dexterity and preciseness
- Information searching and evaluation skills
- Digital co-operation skills and digital communication skills
- Digital identity management and protection skills (tools and content)
- Business skills and understanding of revenue logic
- Operating in compliance with the principles of sustainable development

Manufacture of metal products, machinery and vehicles 2035

Growing skills needs

Generic and working life skills

- ability to use robotics technology
- ability to utilise digital platforms
- ability to utilise digital solutions
- management of remote and virtual services
- innovation skills
- leadership skills
- sales skills
- environmental skills
- customer service skills
- business skills

- multicultural skills
- diagnostics, repair and maintenance management over a remote connection
- skills in customer-oriented development of services
- automation management skills
- skills related to the management and control of digital operations

Basic digital skills

- information evaluation skills
- information searching skills
- diagnostics, repair and maintenance management over a remote connection
- digital communication skills
- ability to apply digital tools
- skills related to the solving of technical problems
- information management skills
- ability to use digital technology creatively
- digital co-operation skills
- netiquette

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Key skills needs

- Management of remote and virtual services
- Innovation skills
- Ability to use robotics technology
- Skills in customer-oriented development of services
- Automation management skills
- People and competence management and coaching skills
- Marketing skills
- Information management skills
- Information evaluation skills
- Sales skills
- Skills related to the re-refining and integration of digital content
- Ability to react quickly
- Information management and analysis skills
- Environmental skills
- Customer service skills
- Business skills
- Multicultural skills
- Occupational safety skills
- Group work skills
- Diagnostics, repair and maintenance management over a remote connection

Telecommunications, software and data services 2035

Growing skills needs

Generic and working life skills

- multicultural skills
- development and management of personal competence
- multiprofessional skills
- ethicality
- ability to utilise digital solutions
- ability to learn
- co-operation skills
- automation management skills
- network, partnership and stakeholder skills
- time management skills

- information management and analysis skills
- skills in customer-oriented development of services
- management of remote and virtual services
- change process skills
- ability to use robotics technology

Basic digital skills

- digital service development skills, design skills (conversion of user needs into software)
- skills related to the protection of personal data and privacy
- information evaluation skills
- digital identity management skills
- skills related to the protection of digital tools and content
- digital information sharing skills
- digital communication skills
- ability to identify digital skills gaps
- information searching skills
- overall system management
- information security skills

- understanding of digital technology and the environmental impact of its use

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Key skills needs

- Ability to utilise digital platforms
- Network, partnership and stakeholder skills
- Skills in customer-oriented development of services
- Development and management of personal competence
- Analytical thinking skills
- Problem-solving skills
- Interaction and communication skills
- Seeing the big picture
- Knowledge of the principles of sustainable development
- People and competence management and coaching skills
- Environmental skills
- Skills related to the protection of digital tools and content
- Information searching skills
- Programming skills
- Skills related to the solving of technical problems

Process industry and manufacturing

Manufacture of clothes and textiles 2035

Growing skills needs

Generic and working life skills

- development and management of personal competence
- environmental skills (sustainable development and environmental awareness, will determine planning and development in the future)
- creativity
- knowledge of the principles of sustainable development
- ability to utilise digital solutions
- ethicality
- time management skills
- skills in customer-oriented development of services
- multiprofessional skills

- customer service skills
- ability to utilise digital platforms
- management of remote and virtual services
- multicultural skills
- ability to react quickly
- automation management skills
- skills related to the management and control of digital operations
- flexibility
- seeing the big picture
- multitalentedness
- change process skills

Basic digital skills

- understanding of digital technology and the environmental impact of its use
- skills related to the protection of physical and mental health against risks associated with digital environments and technology
- ability to use digital technology creatively
- information evaluation skills
- information management skills
- digital communication skills
- digital information sharing skills
- skills related to the protection of digital tools and content
- ability to apply digital tools

- knowledge of copyrights and licences
- information searching skills
- netiquette
- skills related to the re-refining and integration of digital content
- skills related to the protection of personal data and privacy
- ability to identify digital skills gaps

Key skills needs

- Creativity
- Knowledge of the principles of sustainable development
- Environmental skills
- Manual skills
- Ability to utilise digital solutions
- Ethicality
- Ability to use digital technology creatively
- Development and management of personal competence
- Ability to use robotics technology
- Skills related to the protection of physical and mental health against risks associated with digital environments and technology
- Dexterity

Manufacture of paper and sawn timber 2035

Growing skills needs

Generic and working life skills

- problem-solving skills
- ability to learn
- ability to utilise digital solutions
- ability to utilise digital platforms
- management of remote and virtual services
- multitalentedness
- multiprofessional skills
- ability to use robotics technology
- self-regulation
- automation management skills

- analytical thinking skills
- skills related to the management and control of digital operations
- time management skills
- skills in customer-oriented development of services
- development and management of personal competence
- innovation skills

Basic digital skills

- information evaluation skills
- information searching skills
- skills related to the solving of technical problems
- ability to apply digital tools
- understanding of digital technology and the environmental impact of its use
- information management skills
- digital information sharing skills
- ability to use digital technology creatively
- digital communication skills
- ability to develop digital content
- skills related to the re-refining and integration of digital content

- skills related to the protection of personal data and privacy
- digital identity management skills
- understanding of programming logic

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Key skills needs

- Information evaluation skills
- Ability to apply digital tools
- Information searching skills
- Digital co-operation skills
- Understanding of programming logic
- Ability to utilise digital solutions and platforms
- Self-regulation
- Automation management skills
- Multitalentedness
- Problem-solving skills
- Ability to learn
- Multicultural skills
- Knowledge of the principles of sustainable development
- Occupational safety skills
- Sales and marketing skills
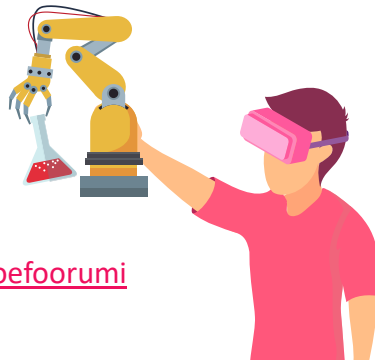
Manufacture of chemical products 2035

Growing skills needs

Generic and working life skills

- artificial intelligence skills
- information management and analysis skills
- automation management skills
- ability to utilise digital platforms
- ability to utilise digital solutions
- skills related to the management and control of digital operations
- self-regulation
- flexibility
- change process skills

- problem-solving skills
- business skills
- creativity
- marketing skills
- ability to learn
- pressure tolerance
- ability to use robotics technology
- entrepreneurship skills

Basic digital skills

- information searching skills
- ability to identify digital skills gaps
- information evaluation skills
- information management skills
- digital identity management skills
- ability to use digital technology creatively
- digital communication skills
- digital information sharing skills
- ability to develop digital content
- skills related to the protection of digital tools and content and to the protection of personal data and privacy
- skills related to the protection of physical and mental health against risks associated with digital environments and technology

- ability to apply digital tools
- digital ethicality (i.e. change resulting from digitalisation, what is manufactured and how)
- programming skills
- digital co-operation skills
- netiquette
- understanding of digital technology and the environmental impact of its use

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Key skills needs

- Process competence
- Safety skills
- Knowledge of the principles of sustainable development, environmental skills
- People and competence management and coaching skills
- Ability to learn
- Counselling, management and guidance and leadership coaching skills
- Co-operation and social skills
- Information management and analysis skills
- Programming skills (application; planning, development and use)
- Digital ethicality
- Multicultural skills
- Artificial intelligence skills
- Problem-solving skills and self-regulation

Manufacture of furniture and other manufacturing* 2035

Growing skills needs

Generic and working life skills

- multitalentedness
- ability to learn
- counselling, guidance and management skills
- skills in customer-oriented development of services
- automation management skills
- ability to utilise digital platforms
- ability to utilise digital solutions
- skills related to the management and control of digital operations
- knowledge of the principles of sustainable development
- sales skills
- ability to use robotics technology

Basic digital skills

- ability to identify digital skills gaps
- information searching skills
- information evaluation skills
- information management skills
- programming skills
- understanding of digital technology and the environmental impact of its use
- skills related to the solving of technical problems
- ability to apply digital tools

*incl. manufacture of bijouterie, musical instruments, sports goods, games and toys, medical and dental instruments and safety equipment

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Key skills needs

- Skills in customer-oriented development of services
- Multitalentedness
- Counselling, guidance and management skills
- Manual skills
- Quality management skills
- Seeing the big picture
- Problem-solving skills
- Interaction and communication skills (including social skills)