KL

EMPLOYEE SKILLS

Data and information security

Technology, expertise and people

Data application

Technology assessment

User skills

Legal rights and ethics

Application

Technology skills

Development and implementation

Communication

Innovation

Digital communication 1: many

Development

Digital communication 1:1

Implementation and procurement

Communication to citizens and colleagues

TOMORROW'S DIGITAL SKILLS

– THE GROWING DIGITAL LANDSCAPE OF MUNICIPAL WORK IN DENMARK

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CONTENTS

TOMORROW'S DIGITAL SKILLS

Municipal employees in Denmark are witnessing a transformation of their tasks with the adoption of new digital and technological solutions. These changes are being seen by those working in administrative positions and every area of municipal social services. The proof is evident everywhere you look: road repair teams receive digital reports from citizens about potholes in the streets; teachers use digital teaching tools; recreational centre administrators utilise digital reservation systems in their day-to-day operations; data-supported decisions in social services; implementation of welfa-re technologies, such as automated cleansing toilets, sensors in home care and nursing homes – and the list goes on.

"Digital skills" is a popular buzzword, but we rarely hear any discussion of what this actually means. Given the lack of commonly accepted and clear definitions, Local Government Denmark has developed a "skills wheel" to illustrate the range of digital skills. This model seeks to define digital skills as a collection of relatively separate skills that are vital to the work of municipal employees and managers. This does not mean that all employees must possess every skill, but that each individual employee and manager must consider the skills required for the tasks, challenges and changes of their respective workplaces – and they must consider the available technologies and digital tools to facilitate and improve performance of these tasks.

› **READ MORE**

Read more about the general digital skills and explore the clickable digital skills wheel at www.kl.dk/digitalekompetencer.
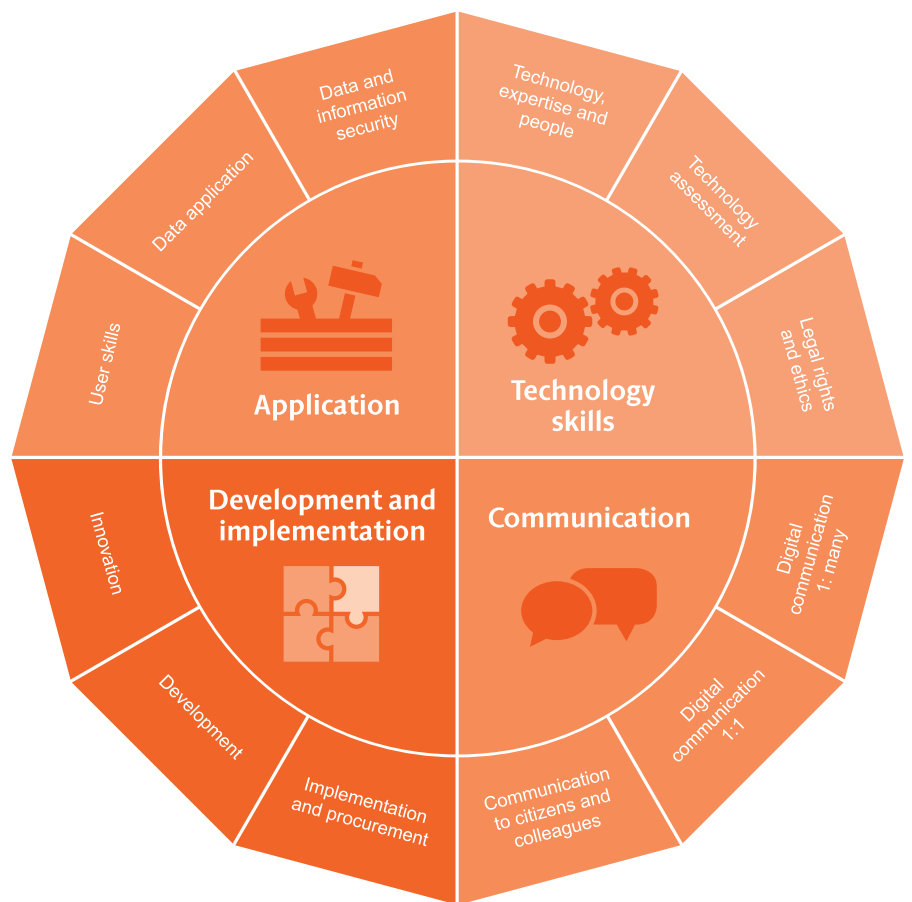
ABOUT THE SKILLS WHEEL

The skills wheel consists of "skill dimensions" divided into subcategories. The skills wheel is a generalised model that aims to cover the digital skills of all employee groups. Therefore, the dimensions are described relatively broadly. Some dimensions are only relevant for some employee groups, and some skills must be fully mastered by some employees while a more basic command will suffice for others. Accordingly, it is important to adapt the definition and management of each skill to the conditions and needs of the specific context in which they are utilised. In local adaptations, you can define more specific skill profiles that lay out the depth and breadth of skills required in given roles and functions. The skills wheel was developed on the basis of Local Government Denmark's "Digitally competent municipalities" programme, which is part of the joint municipal digitisation strategy (2016-2020).

This programme aims to support municipal efforts to develop the skills among staff needed to navigate the increasingly digitised municipal workplace of tomorrow.

The skills wheel and the descriptions of digital skills were developed by Ramboll for Local Government Denmark.

The employee skills relate to digital and technological development, as well as the impact of potential new ways of performing municipal tasks. The focus is on the interaction between professional skill and digitisation – not on IT specialist skills such as those of IT architects, IT project managers, contract managers, etc.

The objective of the skills wheel is to identify the general skills that will be vital pivotal for staff in the more digitised working environment of tomorrow. The wheel also seeks to establish a common language in relation to:

- Talking about and working with the development of employees' digital skills.

- Dialogue with providers of skill development services.

- The development of specific skill profiles for given professions and roles – at local and national levels.

The skills wheel describes skills that are practice- and application-oriented. It does not view digital skills as the mere use of technology, but rather skills that permeate every aspect of a working environment shaped by digitisation and technology. The wheel and accompanying catalogue seek to provide a model for municipalities as a whole – no employee group will be expected or able to possess all the skills described by the model. The wheel is envisioned as a starting point for dialogue rather than a solution key.
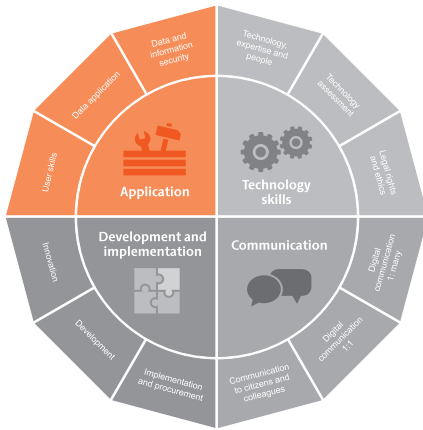
APPLICATION SKILLS

Application skills are general skills relevant for the vast majority of municipal employees. The systems and data utilised by different professions vary greatly, but they all require employees to have strong application skills. Application skills can be divided into three components:

User skills involve mastering the digital solutions and tools required to perform the tasks within a specific profession.

Data application is about having an overview of where the data you create is utilised, how you as an employee create data, and what good data is.

Skills relating to data and information security are essential to ensure that employees can work with data in a proper and sound manner.
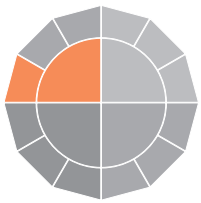
USER SKILLS

Digital equipment, digital platforms and software are necessary for the performance of work in municipalities. User skills are about being able to effectively use and understand the central professional systems in your area of work. Effective use and strong knowledge of existing professional systems and equipment also provide a better foundation for incorporating new digital tools. More superusers in existing professional systems may lead to an increased focus on challenges in the use of systems, which in turn can improve the process of procuring new systems.

 For employees who have extensive contact with citizens and companies in their work, it is also important to be familiar with the solutions that these citizens and companies must use; this ensures a strong basis for understanding the problems encountered by citizens and companies when using the technology, as well as the expertise required to help them with troubleshooting.

The array of technologies required in everyday life continues to expand. Rapidly evolving technology brings with it a wide range of methods for becoming a competent user of new systems and

versions. But no matter the professional field, employees must have strong user skills in the existing systems before new digital solutions can deliver the best possible support for professional performance and expertise

› **EXAMPLES**

It may be relevant to be a competent user of digital equipment and software such as: professional systems, case/document management systems, word processing software, mail systems, digital meeting tools, welfare technology, digital interfaces, iPads, citizen solutions, etc.
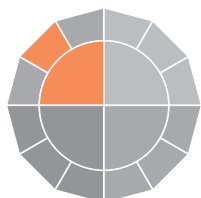
DATA APPLICATION SKILLS

Simply put, data is "information processed by and/or stored in a computer". Data can take many different forms: figures, text, images, sound files, film, 3D models, information in a case, a video documenting educational efforts, statistics on the use of sports halls, observations of a citizen with dementia, etc. Data is created every day in municipalities, and data holds the potential to create better experiences for citizens, more informed decisions and more effective processes. Good data can be utilised in virtually all areas of municipal operations. If municipal employees have a clear understanding of when data is created and where data is involved, they can deliver data-supported expertise that benefits their core duties, citizens of the municipality, and professional excellence in the municipal organisation.

Data skills also involve the proper and secure processing, transmission and understanding of data. Possessing data skills also enables employees to maintain a critical approach to data, which is important given the increasing utilisation of data in their work. Data is a major component of digitisation, and municipalities must possess the skills required to improve professional expertise and performance with the use of data.

› **EXAMPLES**

Examples of data utilisation skills: The ability to create good data, request and assess data, communicate data, process data and understand data.
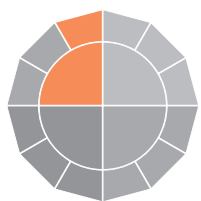
DATA AND INFORMATION SECURITY

The importance of data continues to expand throughout society, and the municipalities are no exception. Data is communicated through an ever-growing number of channels and is used on an ever-growing number of devices. Meanwhile, the requirements for citizen consent, insight and control over the use of data have increased, as have the penalties for violation of these requirements. The threat of illegal intrusion into IT systems and the abuse and destruction of data is also greater than ever before.

Secure handling of data is key to maintaining citizen trust in the municipalities.

This goes beyond mere data in IT systems to include the handling of all types of citizen information in all channels, including in physical environments.

Data and information security skills involve knowledge about duties and rights in relation to data, as well as skills in the handling and use of the data and information you come into contact with in your work. This handling and use must be secure, responsible and legal, while also ensuring the integrity, confidentiality and accessibility of data. All municipal employees must know about and master these data and information security skills.

› **EXAMPLES**

Examples of data and information security skills: Knowledge about what data you as an employee are permitted to see and use, when data use requires consent from the citizen, understanding when you are classed as a data processor, how to prevent unauthorised access to data and the ability to ignore hacking and phishing emails.
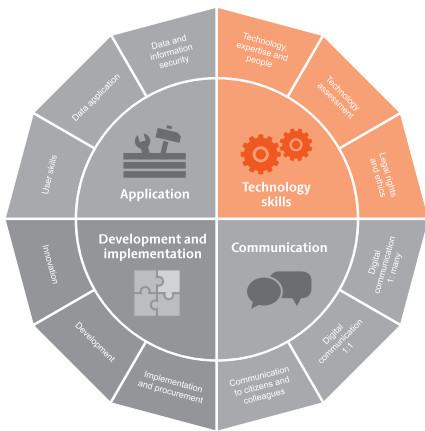
TECHNOLOGY SKILLS

Digital technologies do something with the data we digitise. These technologies function best when you understand what happens in the interaction between technologies, professional expertise, the core task, processes, and the people who use and are affected by the technologies. This understanding is important when assessing where, when and for whom technologies are appropriate – and when they are not. Understanding technology is also important for understanding and solving the challenges created by technology.

Furthermore, understanding technology is vital to ensurethat employees can identify potential new applications of technology in their work. Understanding technology can be divided into three sub-categories:

Technology, professional expertise and people is about having skills to assess digitisation in relation to your professional expertise and the people you interact with in your work.

Technology assessment is about having the skills, based on professional expertise, to assess the technology that could be relevant in your area of work.

Legal rights and ethics is about being able to see the legal and ethical perspectives in relation to everything that technology entails.
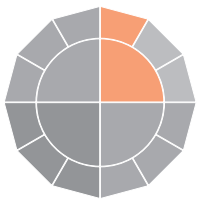
TECHNOLOGY, EXPERTISE AND PEOPLE

Employees must understand the interactions between technology, professional expertise and people. In the daily work of a municipality, one of the key strengths is the interaction between municipal staff expertise and the municipality's citizens. Technology is changing the nature of professions, expertise and task performance. Employees must be aware of and understand how these changes are transforming their core tasks. Technology provides the greatest benefit when it works together with or supports professional expertise. Therefore, employees must understand the potential of a given technology before that technology can improve the performance of their core tasks.

This requires employees to have a thorough professional understanding of a task, and that, based on this understanding, they are able to see how technology can improve the citizen experience in relation to this task, i.e. the municipality meets the needs of the citizen, but perhaps via technology rather than a physical presence.

Ensuring that municipal staff can skilfully assess the role of technology in their respective professional fields will facilitate an understanding of how citizens engage with these professional fields in a digital age

› **EXAMPLES**

Examples of technology, expertise and people skills: Employees who can identify applications of welfare technology solutions that support the citizen's need to be self-sufficient, and employees who help and encourage citizens to use digital self-service solutions.
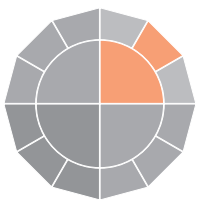
TECHNOLOGY ASSESSMENT SKILLS

The ability to assess where and when it makes sense for citizens to use digital technologies is an employee skill. The ways in which municipalities perform their core tasks are constantly evolving. In this respect, the perspective of the citizen is key to the development of services and new solutions. Digital possibilities require a critical approach to incorporating technology in the development of core task performance.

Technology often holds the potential to positively improve this performance. But there are also areas and aspects of certain tasks that are not well-suited for a purely technological solution. Technology assessment is also about employees being able to provide their professional assessment in the development phase of digital solutions, based on their understanding of technology. This can give the municipal organisation a better understanding of when, and in what circumstances, a digital solution is more beneficial for citizens.

› **EXAMPLES**

Examples of technology assessment skills: Knowledge of different groups of citizens' ability to use digital solutions, knowledge of service design and a strong understanding of the process of the core task.
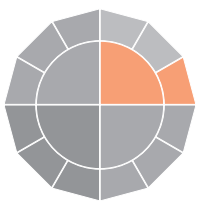
LEGAL RIGHTS AND ETHICS

The use of digital and technological solutions can impact citizens' legal rights and their ability to keep up with, understand, participate in and influence their cases. Digitisation can empower citizens and make them better informed. Digitisation can support professional performance and goals. For all the positive potential of digitisation and technology, there are also potential negative impacts. The use of data can ensure better case administration and better decisions, but it can also provide an incomplete and skewed understanding of the citizen and his/her situation.

Therefore, employees must understand the legal and ethical consequences of digitisation in order to ensure that digitisation makes a positive contribution to task performance and citizen experiences.

› **EXAMPLES**

Examples of skills relating to legal rights and ethics: Skills to predict ethical and legal violations, knowledge of relevant IT and data legislation within one's professional field, knowledge of citizens' and companies' rights relating to data.
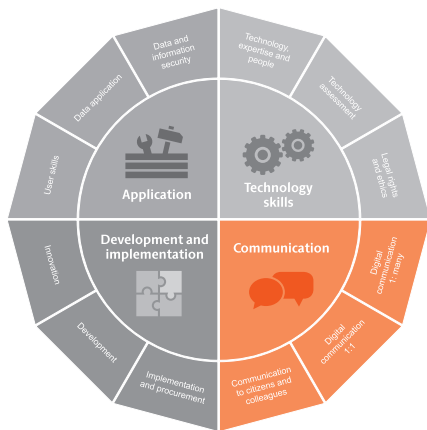
COMMUNICATION SKILLS

Municipalities are increasingly communicating via digital channels. Meanwhile, much of this communication is from employees who are not specialists in communication. Therefore, it is necessary to focus on skills relating to digital communication.

The communication skills in this model are basically about being able to communicate to citizens regarding digitisation and technological possibilities.

This includes the ability to communicate how digital solutions should be used and how to use digital communication, as well as the ability to assess the potential for ordinary communication using digital solutions. This section of the skills wheel is not universally relevant for all employees in its entirety, but virtually everyone will have to master at least some of these communication skills. Communication comprises three subcategories:

Skills to communicate the nature, potential and impact of digitisation.

Skills for one-on-one communication with citizens and companies via various digital channels, including email, chat and video.

Skills for communication to numerous citizens, e.g. via websites, Facebook or Twitter.
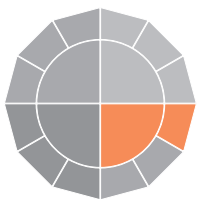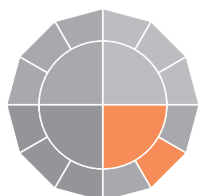

DIGITAL COMMUNICATION 1:MANY

Digitisation creates new opportunities for communication to many citizens at once. Employees must possess the ability to communicate to many citizens at once using digital solutions, thus ensuring effective communication of information to the recipients who need it, and in the way that they need it. Different platforms can be chosen for this communication, depending on the employee's field of work and the target group.

Digital communication from one to many is thus also about the ability to target communication.

› EXAMPLES

Examples of skills in digital communication from one to many: Knowledge about different groups of companies and citizens and their preferred communication channels, the ability to adjust content and communication based on the target group, the ability to produce, adjust and publish visual information, understanding of copyright in relation to using content produced by others, knowledge about digital networking communication with citizens relating to involvement, co-creation, etc.

DIGITAL COMMUNICATION 1:1

Relations and trust between citizens and the municipality are often built through the one-on-one meeting of citizens and municipal employees. Digitisation presents new opportunities for contact – and thus the need for skills.

Inexpedient use of digital communication tools can negatively impact the degree to which citizens and companies view the municipality as genuine and empathic.

To ensure effective and meaningful communication, it is important that municipal employees are able to choose the right form of digital communication from the wide range of options.

› EXAMPLES

Examples of 1:1 digital communication skills: Knowledge of the strengths and weaknesses of different communication channels, knowledge about what communication channel is best suited for a given citizen, company or situation (e.g. chat, email, text message, video communication), the ability to create attentive dialogue and mutual understanding through digital channels (e.g. video meetings, training/coaching via video, health consultation via video, video interpretation, etc.).

# COMMUNICATION TO CITIZENS AND COLLEAGUES

Municipal employees often have to communicate with citizens regarding the use of digital solutions or technology, e.g. self-service solutions or welfare technology. This synthesis of professional expertise and people skills requires the ability to communicate knowledge, challenges and experiences regarding the use of solutions.

Communication skills are about having insight into citizens' preferences, needs, strategies and challenges in relation to the use of digital technologies.

With this insight, employees can craft better communication and thereby aid the efforts of citizens and companies to gain meaning and value from technology, thereby supporting the self-reliance of citizens. The development of core tasks through technology and digitisation requires some of the same skills as for sharing knowledge with colleagues or communicating to colleagues about new opportunities and solutions in relation to their field of specialisation.

› EXAMPLES

Examples of skills for communicating to citizens and colleagues: The ability to identify and understand the needs and challenges of different citizen groups, the ability to continuously stay abreast of the technologies used by citizens and companies, knowledge about tools that can help citizens and companies with the use of digital solutions, the ability to help citizens and colleagues with the use of solutions and platforms, the ability to motivate and create meaning in relation to technology, pedagogical skills to give citizens a sense of security and self-reliance in relation to the use of digital technologies.
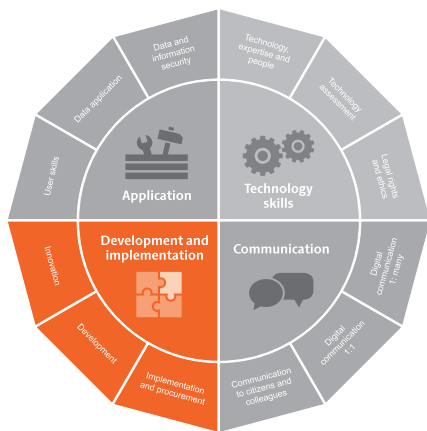
DEVELOPMENT AND IMPLEMENTATION

Most employees are regularly involved in the implementation of digital solutions and technologies. And everyone plays a role in helping to drive the changes made possible by the development and implementation of new technology. Early and ongoing involvement of employees, citizens and other stakeholders in the development, planning and implementation phases is important to the quality, adoption and efficacy of solutions. Some employees participate and contribute their professional expertise and insight. Others are more specifically involved in managing the development and implementation processes.

Therefore, the need for the skills in this section of the skills wheel depends on how your professional field and role relate to new technology and digitisation. The development and implementation skills can be divided into three sub-categories:

Implementation and procurement is about employees knowing enough about the methods used in acquisition and implementation to meaningfully participate in these processes.

Development is about the more specific skills required of employees with an active and administrative role in development and implementation processes.

Innovation is more generally about the ability of employees to contribute and drive the change brought about by the development and implementation of digital solutions.

IMPLEMENTATION AND PROCUREMENT

Digitisation in municipal organisations is dictated by the conditions of the given professional field. Therefore, employees must be able to participate in part or all of the process of developing, acquiring and implementing digital solutions. Digital solutions must be based on the interaction between a field of municipal operations and the people who will use its services. Professional expertise and experience in dealing with the citizens or colleagues who will be using the solution are both valuable to the process.

Therefore, it may be relevant for some employees to have an understanding of procurement processes and implementation of digital solutions, which will facilitate the incorporation of their professional expertise and their effective participation. This ensures co-creative processes in the development and implementation of digital solutions that support work in a given professional field.

› **EXAMPLES**

Examples of skills relating to participation in procurement and implementation processes: Knowledge about procurement processes, the ability to incorporate professional expertise across different areas, the ability to communicate professional expertise and experience with citizens and companies

DEVELOPMENT SKILLS

Digital solutions to support professional expertise are best developed in collaboration with employees who possess unique knowledge about the areas that digitisation will impact. This also requires employees to have or acquire the skills needed to participate in development processes. Development may also involve ongoing adjustments of service and existing solutions/technology based on user experiences or citizen input.

The participation of employees in development processes will depend on their area of professional expertise. This may include exploration of user perspectives, interdisciplinary collaboration, knowledge about mapping work processes, business cases and benefit realisation plans. Employee knowledge of such tools provides a good basis for improving digital solutions based on the input of professional experts. It may also be relevant for employees to have an understanding of systems and their dependencies.

› **EXAMPLES**

Examples of development skills: Skills to engage in the exploration of user perspectives, skills to participate in interdisciplinary collaboration and development, skills to map work processes and value streams, the ability to prepare business cases and benefit realisation plans, skills relating to design planning or service design.
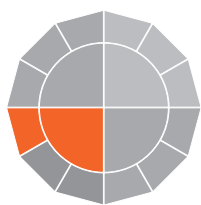
INNOVATION

Technological and digital opportunities are quickly evolving and emerging. Therefore, employees must contribute to developing an understanding of how new opportunities and innovation can support the professional work of the municipality.

This requires employees to have the ability to identify new opportunities in technology, and that they dare to chal-

lenge conventional thinking and approaches. Employees must also be aware of the latest digital developments within – and perhaps beyond – their respective professional fields. Combining the ability to break from conventional thinking with an understanding of key trends and a generally positive attitude regarding change can form the foundation for developing and implementing better digital solutions.

› **EXAMPLES**

Examples of innovation skills: Skills to identify new opportunities in technology as it relates to the daily lives and needs of citizens, knowledge of new technological opportunities and trends, skills to help create change.

UNDERLYING SKILLS

As the name clearly indicates, the digital skills wheel is focused on digital skills. However, a range of underlying skills may be necessary before starting work with the digital skills. These include basic reading and writing skills, language skills, mathematical skills and basic IT skills. These underlying skills are often vitalpivotal for the development of technology-based solutions to improve professional performance. Underlying skills may have an impact on how easy it is to develop the employee skills in the wheel and put them into practice.

For some, a lack of underlying skills may be the most significant barrier to working with digital solutions and skills. Even with the emergence of voice-controlled interfaces, many functions will likely remain dependent upon the ability to read, write and master a certain degree of Danish. Some job functions may also require mastery of Danish or other languages, e.g. to read documentation, guides, etc. which are sometimes only available in a foreign language. However, it is important to remember that the underlying skills required in different contexts also vary.

› **EXAMPLES**

Examples of underlying skills: Reading/writing skills, Danish skills, relevant foreign languages, skills to handle and participate in change, skills to think systematically and critically, skills to be solution-oriented and creative, the ability to handle complexity, the ability to cooperate in interdisciplinary efforts and participate in projects.

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