



D3.1 GUIDELINE

STANDARDIZATION, COMPETENCE UNITS AND THE EMERGING MICRO-CREDENTIALS

Flexible, inclusive learning opportunities.

In Europe staff needs to continually update their knowledge, skills and competences to fill the gap between their education and training and the demands of a rapidly changing labour market. An effective culture of lifelong learning is key to ensuring that everyone has the knowledge, skills and competences they need to thrive in their personal and professional lives.

The iQVet industry partners have described the Vocational Education and Training (VET) demand within mechanical industry for short, tailored learning opportunities that could better be coordinated with extensive and busy production plans and work activities inside the mechanical industry. This demand for new forms of VET learning could be linked to the current, corresponding increase in Europe for interest in 'micro-credentials' that certify the outcomes of small learning experiences.

Small learning experiences, such as short courses leading to micro-credentials, allow for a targeted acquisition of skills and competences adapted to a fast-changing society and labour market while not replacing traditional qualifications. Their objective is to be complementary.

The European approach to micro-credentials aims at providing a clear definition and European standards to allow for the learning outcomes of these small experiences to be easily recognized and understood by employers, learners and education and training institutions, as well as guiding principles to consider when designing or issuing high-quality micro-credentials. Common approaches to developing and using micro-credentials at the EU level can support and enhance national efforts for their quality, transparency, cross-border comparability, recognition, and portability. It can also help to build trust in micro-credentials for the benefit of the learners, employers, and education and training institutions.

On 16 June 2022, the Council of the European Union (EU) adopted a [Recommendation on a European approach to micro-credentials for lifelong learning and employability](#). The recommendation seeks to support the development, implementation and recognition of micro-credentials across institutions, businesses, sectors and borders.



The European approach to micro-credentials offers a common definition that is valid across sectors of education and the world of work.

It mirrors the societal mission of education and training institutions, including higher and vocational education and training (VET) institutions, and non-formal providers as well as employers and labour market actors.

Micro-credentials is supposed to certify the learning outcomes of short-term learning experiences, for example a short course or training activity.



They offer a flexible, targeted way to help people develop the knowledge, skills and competences they need for their personal and professional development.

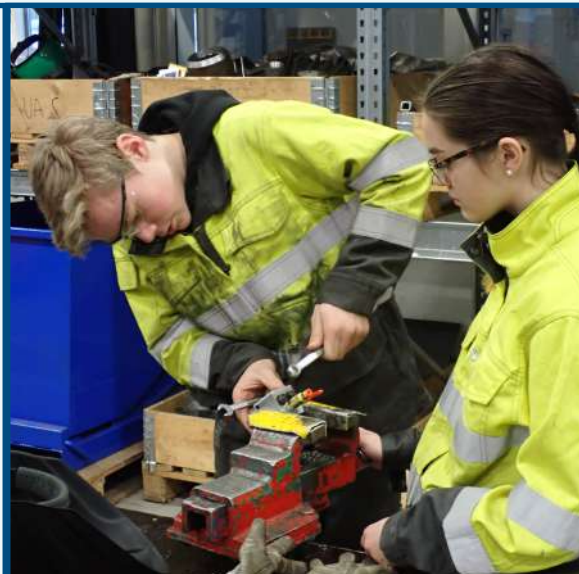
Thus, a micro-credential should record the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes have been assessed against transparent and clearly defined standards.

Unfortunately, without developing common standards ensuring their quality, transparency, cross-border comparability, recognition and portability, micro-credentials cannot reach their full potential within mechanical industry training.

Courses leading to micro-credentials should be designed to provide the learner with specific knowledge, skills and competences that respond to personal and labour market needs. Micro-credentials is supposed to be owned by the learner, whereby they should be shared and be portable.

They may be standalone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity.

The new iQVet curriculum may provide shorter forms of learning opportunities than in traditional qualifications, whereby they are



WHAT STANDARD ELEMENTS SHOULD IT INCLUDE?

Building flexibility based up on trust

Learning opportunities of smaller volume training than for traditional National Qualifications based courses applied in mechanical industry training, could be based up on the proposed Competence Units. They could be developed rapidly within mechanical industry training in response to the VET demand from mechanical industry for more flexible, learner centered forms of VET.

This training can be described as both lifelong and 'life wide' since it takes place in different settings such at work, at home, among people who are already in work, and potentially even among those not currently in work, but would like to qualify for a mechanical industry job. Thus, application of micro-credentials within mechanical industry enable the targeted, flexible acquisition and recognition of knowledge, skills and competences to meet new and emerging needs in mechanical industry training labour market. Importantly, micro-credentials do not replace traditional qualifications. Instead, they can complement traditional qualifications and serve as a lifelong learning opportunity to all. Given their flexibility, micro-credentials can be designed and delivered by a variety of providers in many different formal, including non-formal and informal learning settings.

Challenges with micro-credentials

There is currently a discussion ongoing in Europe related to establishing common definitions of micro-credentials, and common standards to describe and recognize them. This causes concerns about their value, quality, recognition, transparency and 'portability'. This includes portability between and within education and training sectors, and portability on the labour market and portability across countries. This currently limits the trust, understanding, wider acceptance and uptake, which in turn limits the potential of micro-credentials to support flexible learning and career pathways.

Targeted measures

Micro-credentials can be used as part of targeted measures to support inclusion and facilitate access to education and training and career opportunities for a wider range of learners. They can also be used in targeted ways to address challenges within education and training systems and labour markets, including gender and other discriminatory stereotypes.

Thus, the goal is for micro-credentials to be explored, developed, used and compared in a coherent way among key industry and educational institution stakeholders, across different sectors, fields and countries in a consistent and coherent way. This will help contributing to a culture of lifelong learning and increase the employability of people.

MANDATORY ELEMENTS

It is possible in mechanical industry training to introduce and apply micro-credentials as 'small volumes of learning', while not replacing traditional (national) qualifications. Those could be studied and used in work-based training activities by staff out at the cages by applying e-learning in combination with support and guidance through modern software based tools like for instance Zoom.

This approach simplifies training delivery and help reducing training costs significantly, since the staff may study during periods with less need for work (e.g. the winter period where the salmon and trout are less active). In addition there will be less need for transporting people to school, thus reducing training costs.

The basis for trust in micro-credentials is transparency. Micro-credentials should be clearly identified as such with elements that make it possible for learners, education and training institutions, quality assurance agencies, and employers to understand the value and content of micro-credentials and to compare them.

Recommendations for micro-credentials

The European approach to micro-credentials suggests a list of critical information elements that any micro-credential should provide. They should be grouped into two classes:

- Mandatory elements
- Optional elements, when and where relevant



KEY PRINCIPLES

The mandatory elements:

Identification of the learner

- Title of the micro-credential
- Country/Region of the issuer
- Awarding body
- Date of issuing
- Learning outcomes
- Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)
- Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
- Type of assessment
- Form of participation in the learning activity
- Type of quality assurance used to underpin the micro-credential

The optional elements includes, where relevant, currently the following components:

- Prerequisites needed to enroll in the learning activity
- Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online or onsite with identity verification)
- Grade achieved
- Integration/stackability options (standalone, independent micro-credential / integrated, stackable towards another credential)
- Further information

All the mandatory elements, except for the description of the issuer, the assessment process and the type of quality assurance process, are currently included in the CU descriptions. The proposed work-based training methods may easily be extended to describe the learning experiences based up on on the participation in the learning activities. The iQVet project may design and develop the structure of the awarding bodies by inviting the VET providers to start up the process.

DESIGNING MICRO-CREDENTIALS

When designing and issuing micro-credentials, some key principles should be followed. The 10 principles presented in the «European approach to micro-credentials», specify the nature of micro-credentials and offer guidance on the design and issuance of high quality micro-credentials.

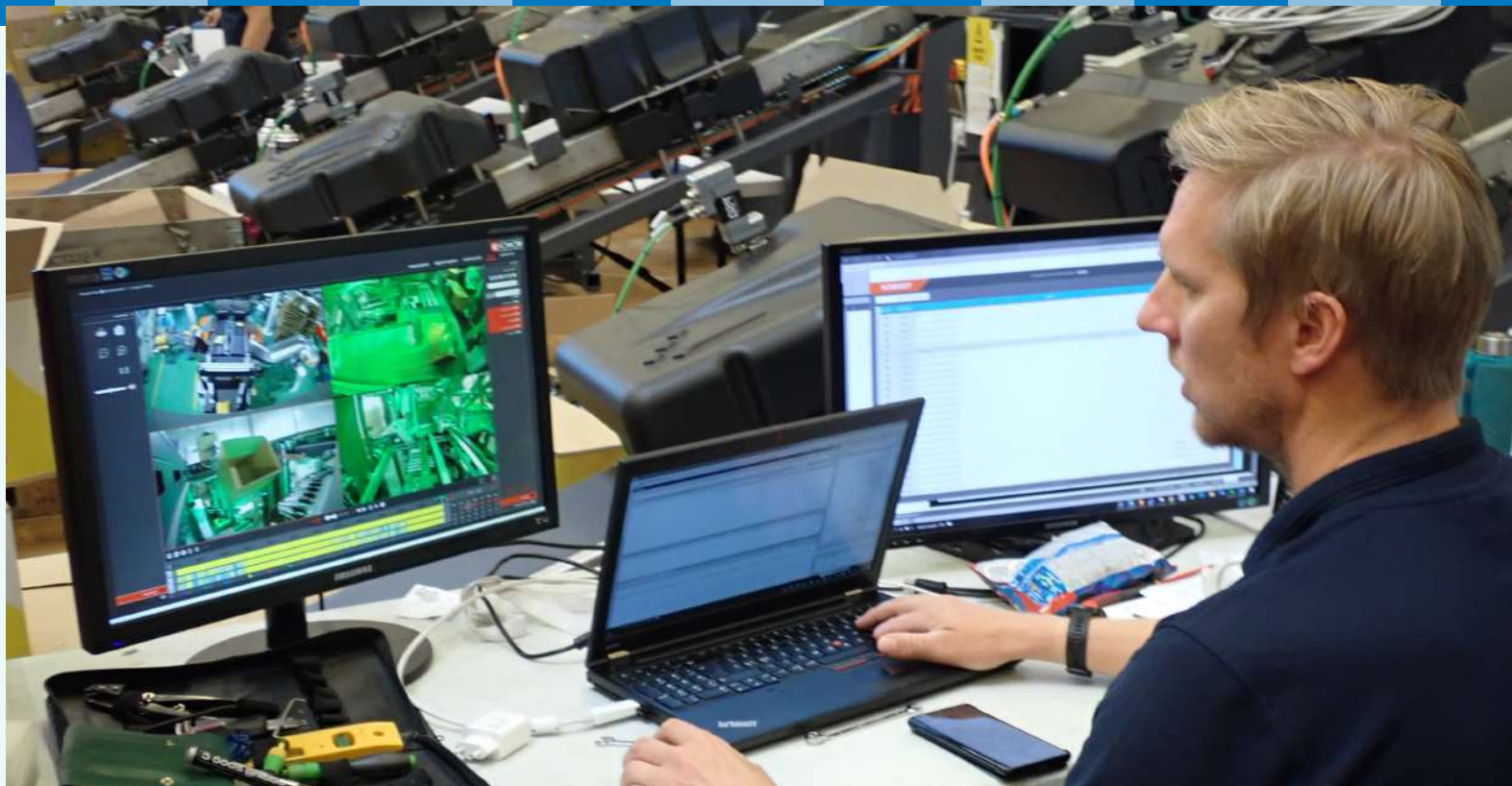
These 10 principles highlight the key characteristics of the proposed European approach to micro-credentials. They are universal and could be applied in any area or sector.

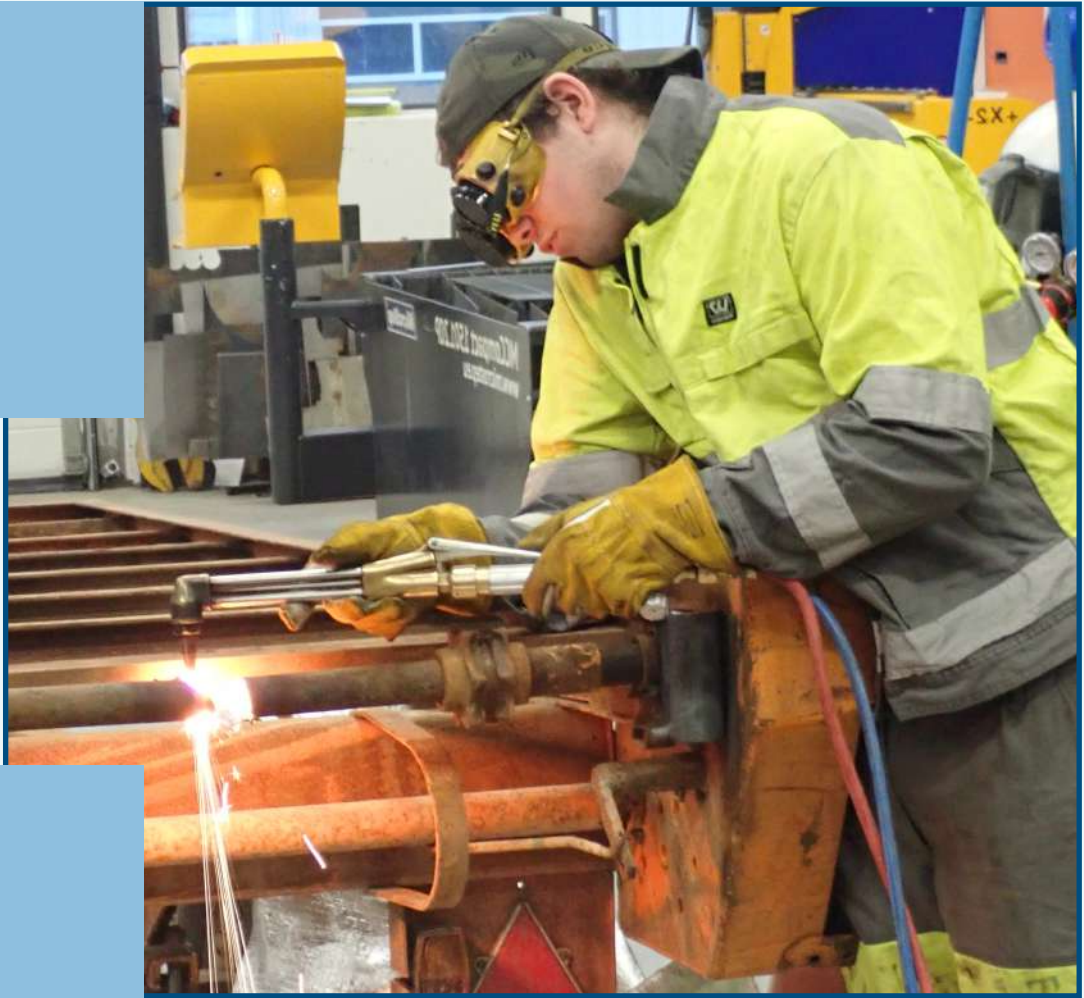
1 Quality

Micro-credentials for mechanical industry should be subject to internal and external quality assurance by the VET and higher VET system producing them. This includes VET and/or labour market context in which the mechanical industry micro-credential is going to be developed and delivered. The quality assurance processes must be fit-for-purpose, be clearly documented, accessible, and meet the needs of learners and stakeholders. External quality assurance of the mechanical industry VET providers should be based primarily on the assessment of providers, rather than individual courses, and the effectiveness of their internal quality assurance procedures.

Key elements include Annex IV of the European qualifications framework Recommendation, Standards and Guidelines for Quality Assurance in the European Higher Education Area and other quality assurance instruments.

Providers of mechanical industry micro-credentials should make sure that the internal quality assurance includes the overall quality of the micro-credential itself, the quality of the course itself, mechanisms for learner feedback and peers feedback.





ISSUING MICRO-CREDENTIALS

2 Transparency

Mechanical industry training micro-credentials should be measurable, comparable and understandable with clear information on learning outcomes, workload, content, level, and the learning offer, as relevant for the mechanical industry sector.

Providers that do not use the ECTS like universities do, may use other systems or types of information that can effectively describe learning outcomes and workload, in compliance with the principles in Annex V to the EQF Recommendation.

Micro-credentials may be included in national qualifications frameworks and/or systems, where relevant and in line with national priorities and decisions.

Systems for micro-credentials should provide transparent and clear information, to underpin guidance systems for learners, in line with national practices and stakeholders needs. Information on learning opportunities leading to micro-credentials should be accessible and easily exchanged through relevant platforms, including Europass. Information on providers of micro-credentials should be published in registers, or incorporated into existing registers.

3 RELEVANCE

Micro-credentials in mechanical industry training should be designed as distinct, targeted learning achievements, and learning opportunities leading to them are updated as necessary, to meet identified learning needs.

Cooperation between VET organizations, employers companies, possible social partners, other providers, and users of micro-credentials is encouraged to increase the relevance of the micro-credentials for the labour market.



INDUSTRY RELEVANCE



4 VALID ASSESSMENT

Mechanical industry micro-credential learning outcomes should be assessed against transparent standards.

5 LEARNING PATHWAYS

Micro-credentials in mechanical industry should be designed to support flexible learning pathways, including the possibility to stack, validate, and recognize micro-credentials from across different systems. They are designed to be modular so that other micro-credentials may be added to create larger credentials. Obtaining micro-credentials is possible following assessment of learning outcomes, obtained either through a specific course leading to a micro-credential, or on the basis of assessment of learning outcomes resulting from non-formal and informal learning.

6 RECOGNITION

Recognition has a clear signaling effect towards the value of learning outcomes and paves the way for a wider offer of such small learning experiences in a comparable way across the mechanical industry sector in Europe. They should be recognized for employment purposes in mechanical industry training, based on standard recognition procedures, resulting in recognizing foreign qualifications and learning periods abroad that are issued by formal VET mechanical industry providers.



OWNERSHIP OF MICRO-CREDENTIALS

7 PORTABILITY

Micro-credentials should be owned by the credential-holder, which is the learner, and may be stored and shared easily by the credential-holder. This should include secure digital wallets like Europass, in line with the General Data Protection Regulation. To ensure interoperability and seamless exchange of data, the infrastructure for storing data should be based on open standards and data models. This will help and support smooth checks of data authenticity.

8 LEARNER CENTERED

Micro-credentials should be designed to meet the needs of the target group of learners. Learners should be involved in the internal and external quality assurance processes. Their feedback is taken into account as part of the continuous improvement of the micro-credential.

9 AUTHENTIC

Micro-credentials should contain sufficient information to check the identity of the credential-holder, which is the learner, the legal identity of the issuer, and the date and location of issuance of the micro-credential.

10 INFORMATION AND GUIDANCE

Information and advice on designing mechanical industry training micro-credentials should be incorporated in lifelong learning guidance services. They should reach the broadest possible learner groups, in an inclusive way, supporting VET, higher VET and career choices.



ECOSYSTEM OF MICRO-CREDENTIALS

It is necessary to facilitate and develop the uptake of short learning experiences into a new VET eco-system leading to micro-credentials. Mechanical industry training stakeholders should facilitate the ongoing and emerging development of micro-credentials within formal learning settings, including components like:

- Supporting the exploration by higher education institutions of the role of micro-credentials to offer learning opportunities.
- Supporting the exploration by mechanical-industry VET providers of the role of micro-credentials in continuing VET to support up-skilling and re-skilling of staff, including through the activities of VET Centres of Vocational Excellence.
- Actively searching and applying on public funding for the development and provision of small education and training programs leading to micro-credentials. This must take into account the institutional autonomy to allow for diversity and creativity among mechanical industry VET supply and VET demand stakeholders. Implementation could be underpinned through existing EU tools that support the needs of individuals and organizations, including Europass and the Europass digital credentials for learning to support the portability and authenticity of micro-credentials.

Staff at mechanical industry companies need access to quality teaching and learning provided in different ways and settings, to follow up rapid technical development within the mechanical industry market. In addition, they need to develop their personal, social, cultural and professional competences.

VET and higher VET systems should be called on to become more flexible and find solutions to deliver more learner centered, accessible and inclusive learning to a wider range of profiles. Non-formal providers of education and training are also addressing this need by providing new and innovative opportunities for up-skilling and re-skilling.

An effective culture of lifelong learning is the key to ensure that the staff has the skills they need to work and continue working in industrial production companies. This includes changing jobs based up on the labour market needs within mechanical industry training as well as the personal lives and career opportunities of the staff. It is essential that the staff can access quality and relevant VET and higher VET, up-skilling and re-skilling throughout their lives. Lifelong learning opportunities should be part of the long-term strategy of VET and higher VET institutions operating within the mechanical industry sector, to improve their responsiveness to the fast-changing needs of employers and learners. Various VET and higher VET providers of the emerging micro-credentials within mechanical industry, must cooperate to quickly apply the latest research findings in the design and update of learning opportunities. They make possible the targeted, flexible acquisition of knowledge, skills and competences to meet new and emerging needs in the labour market, while not replacing traditional national qualifications. 10