Models and Guidelines for the Institutional Development of CEPD and the Design, Implementation and Recognition of Micro-credentials

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Executive Summary

The Erasmus+ funded project "Modular Continuing Higher Education by Micro-credentials (MCE)" aims to advance and explore the use and implementation of micro-credentials in higher education. Aligned with European and national priorities, the project supports institutions in adopting these innovative learning solutions.

To further understand the concept of micro-credentials, the project conducted an analysis of national and European developments and pilot studies to test their design and development. As part of Work Package 4, the project teams also organised a series of institutional seminars to empower university teaching staff, central support services, and leadership in developing micro-credentials. The goal of these seminars was to raise awareness and interest in micro-credentials as a key tool for modernising higher education, and to gain insight into the needs of different institutions within the MCE partnership regarding micro-credentials and lifelong learning.

This report presents key lessons learned from the seminars and other project activities, outlining guidelines and best practices for implementing micro-credentials based on the experiences of the project's partner institutions throughout its duration.

The first chapter provides an overview of the various aspects, and the wide range of topics discussed during the different institutional seminars. The chapter focuses on the challenges identified by institutions in implementing micro-credentials, such as quality assurance, recognition, and provision in collaboration with private providers.

The insights gained from the seminars served as input for the recommendations outlined in the second chapter of this report. This chapter details the processes and workflows, offering recommendations to guide institutions through all the steps from the initial needs analysis to the design, implementation, assessment, awarding, and recognition of quality-assured micro-credentials. Additionally, it includes guidelines regarding the financial model for micro-credentials and workflows related to student admission, administration, and recruitment/marketing strategies. The guidelines aim to foster reflection on the steps to take in the process of the design and implementation of micro-credentials and to further empower institutions to address the challenges encountered along the way.

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Introduction

In a rapidly changing world, continuously developing new skills and acquiring up-to-date expertise is essential. People need to constantly refine and expand their knowledge and skills in order to fill the gap between formal education and the evolving demands of society and the labour market (see for example World Economic Forum, 2025). Recognising this need, the EU and its member states are focusing on the promotion of transversal skills and fostering lifelong learning. In this context, the Council of the European Union adopted a Recommendation on a European approach to micro-credentials for lifelong learning and employability. In this recommendation, 'micro-credential' is defined as follows:

"'Micro-credential' means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria. Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity." (Council of the European Union, 2022).

While this definition focuses on the 'record of the learning outcomes' and the qualification issued after a small volume of learning (*you earn a micro-credential*), the term micro-credential is also often being used to describe the learning activity or format (*you follow a micro-credential*). Although 'micro-credential' is thus well defined, the adoption of the term as a formal type of course or as a certificate or as both is not yet fully established (Weiß et al., 2023).

According to the European Council Recommendation member states are recommended to adapt the European approach to micro-credentials with the aim of:

- enabling individuals to acquire, update and improve the knowledge, skills and competences they need to thrive in an evolving labour market and society, to benefit fully from a socially fair recovery and just transitions to the green and digital economy and to be better equipped to deal with current and future challenges;
- supporting the preparedness of providers of micro-credentials to enhance the quality, transparency, accessibility and flexibility of the learning offering in order to empower individuals to forge personalised learning and career pathways;
- fostering inclusiveness, access and equal opportunities and contributing to the achievement of resilience, social fairness and prosperity for all, in a context of demographic and societal changes and throughout all phases of economic cycles.

Following the Recommendation, micro-credentials have gained significant traction. Within the higher education sector, institutions have begun exploring both the concept of micro-credentials and the broader topic of lifelong learning. Learners as well are becoming more familiar with the concept of microcredentials and their potential in the context of higher education (Bruguera et al., 2022).

The project, Modular Continuing Higher Education by Micro-credentials (abbreviated as the MCE-project), aims to further conceptualise and explore the implementation of micro-credentials. Several activities were taken within the project to further understand the idea of micro-credentials, including an analysis of the national and European developments on micro-credentials and conducting pilot studies to test the design and development of micro-credentials.

This report aims to present key lessons learned from the different activities and outlines guidelines and best practices for implementing micro-credentials based on the experiences of the project's partner institutions. The report begins by outlining the specific needs of partner institutions in implementing micro-credentials, which serve as the foundation for the recommendations and guidelines to design micro-credentials provided in the second part of the report.

Higher education institutions' approach towards micro-credentials

Following the European Council Recommendation, various higher education institutions have started to explore the concept of micro-credentials. To better understand the needs of the different institutions in the MCE-partnership regarding micro-credentials and lifelong learning, and to empower institutions and support their efforts, institutional seminars were organised. These institutional seminars were tailored according to the needs and interests of the institutions and took place from March 2023 until July 2024.

Based on the seminars, insights provided a deeper understanding of the key aspects related to the implementation of micro-credentials by higher education institutions. After each seminar, a questionnaire was distributed to the different organisers within the partner institutions to identify necessary steps and potential challenges and hurdles in implementing micro-credentials.

This chapter first provides an overview of the different elements and key topics discussed during the different institutional seminars. Secondly, it examines the elements that higher education institutions identified as challenges towards the implementation of micro-credentials and short learning modules. These insights serve as input for the subsequent chapter with recommendations and guidelines for creating micro-credentials.

Institutional seminars - overview

To address the need to enhance understanding of micro-credentials among educators, students and employers, a series of institutional seminars were organised across the partner institutions as part of the MCE-project. These institutional seminars were specifically designed to cater to the needs and interests of the institution regarding micro-credentials. Partners noted that the seminars have indeed helped raise awareness on the concept of micro-credentials, addressing the lack of awareness highlighted in the MCE research report 2.3 (Antonaci et al., 2023). The seminars highlighted a strong interest and high levels of engagement from both partners and participants.

In total, 15 seminars were organised, either online (n=6), in-person (n=6) or in a hybrid way (n=3). Most seminars were conducted (at least partly) in the local language of the host institution, while others were held in English to facilitate participation from international experts and/or attendees. Some institutions chose to organise a seminar for a wider (external) audience discussing more general topics. Other partners chose to organise it for a more limited (internal) audience, specifically engaging their own staff. Overall, these institutional seminars attracted 376 participants, reflecting the growing interest in micro-credentials.

A wide range of topics were explored during the seminars. The table below provides an overview of those topics.

Overview institutional seminars

Institution	Thematic focus	Topics discussed	Number of participants of the seminars	Modalities	Language
KU Leuven	Institutional implementation of micro-credentials	• Educational processes • Terminology • Quality assurance • Financial model • Certification (+ EQF)	Two sessions: • N = 13 (10 female, 3 male) • N = 13 (9 female – 4 male)	Hybrid, in-person	Dutch
UAb	Impact of micro-credentials on professional training	• Professional training • Strategy for micro-credentials • Quality assurance • (Co-)Design and development of micro-credentials	N = 52 (27 female – 25 male)	In-person	Portuguese
UOC	Results of micro-credentials Design and evolution of the micro-credential portfolio How to build European Digital Micro-Credentials	• Results of micro-credentials for learners • Learning models within micro-credentials • Design and evolution of the micro-credential portfolio • Digital credentials/certification	Two sessions: • N = 22 (14 female – 8 male) • N = 16 (9 female – 7 male)	Online	English
OUNL	Institutional implementation of micro-credentials	• Administrative processes for micro-credentials • Funding opportunities	Two sessions: • N = 19 (9 female + 10 male)	In-person, online	Dutch

		- Exemptions - Recognition of Prior Learning	N = 17 (14 female + 3 male)		
FernUni	Micro-Credentials: Integration – Anerkennung/Anrechnung – Digitale Zertfikate	- European context - Recognition/accreditation of short learning programmes - Digital certification - Institutional approach	N = 29 (19 female – 10 male)	Online	German, English
UNINETTUNO	MCE – Modular Continuing Higher Education by Micro-credentials	- European context - National context/policies - Advantages and impact of micro-credentials	N = 20 (10 female – 10 male)	Online	Italian
KTU	Empowering Lifelong Learning: Navigating the Future with Micromodules and Micro-credentials at ALTA Conference in Kaunas	- National context - Implementation of micro-credentials - European alliances - Recognition of micro-credentials	Two sessions: - N = 31 (21 female – 10 male) - N = 15 (11 female – 4 male)	Hybrid, in-person	English, Lithuanian
HOU	Micro-credentials at HOU: Opportunities and challenges	- Design & implementation of micro-credentials: advantages and challenges - National context (policy) - Micro-credentials for vocational training and the labour market - Institutional approach	Two sessions: - N = 13 (10 female – 3 male) - N = 13 (8 female – 4 male)	In-person	Greek

| OUC | Micro-credentials: Mapping the context, Challenges, Prospects and Possibilities | • European context
• National context (policy)
• Implementation of micro-credentials
• Micro-credentials for vocational training and the labour market
• Qualifications and credentials
• Quality assurance | N = 24 + 6
(13 female – 11 male) | Online | English, Greek |
| UNED | Micro-credentials. Challenges and possibilities | • European context
• National context and policies
• Continuous learning
• Quality assurance | N = 73
(50 female – 23 male) | Hybrid | Spanish, English |

Identified challenges in implementing micro-credentials

Based on the seminars, the partners of the MCE-project identified several obstacles and challenges in implementing micro-credentials.

National policy development

A first significant hurdle is the lack of policy recommendations at the national level. One partner institution mentioned that their progress was stalled due to the absence of national policy. Moreover, this lack of national policy can lead to inconsistencies in the use of and proliferation of the term 'micro-credential', potentially causing issues with recognition. On the other hand, the absence of national guidelines and legislation can provide higher education institutions with the flexibility and opportunity to take initiatives and move forward and start implementing micro-credentials independently.

> **CASE**: Some countries, such as Spain and Portugal, have made notable progress in integrating micro-credentials into their education and training systems. Spain's "Plan Microcreds" provides substantial financial support and a structured framework for implementation, while Portugal's "Adult Impulse Initiative" (Caetano et al., 2023) aims to modernise continuing education through higher education-employer partnerships, though its micro-credential strategy remains less defined (Casa Nova et al., 2024).
> Conversely, many EU member states have yet to establish dedicated policies or frameworks for micro-credentials, often incorporating them within broader lifelong learning strategies.

Defining micro-credentials

Several partners highlighted the strong need to create a common understanding of micro-credentials within their institutions. While the European Council Recommendation can serve as a key reference, it remains crucial to establish a shared understanding within national and institutional contexts. Besides a common understanding of the concept of micro-credentials, it is essential to discuss the added value of micro-credentials for the university and clarify how these micro-credentials are integrated into existing university's educational offerings.

Stakeholder engagement

In addition to an institutional understanding of micro-credentials, partners emphasised the importance of engaging with key stakeholders, including employers and industry representatives, to raise awareness of micro-credentials and strengthen their credibility and relevance in the labour market and with employers.

Financial sustainability

Several partners underscored the need for a solid financial model to create micro-credentials in a sustainable way. While the seminars discussed national projects and project-based funding for micro-credentials, a robust financial model remains essential to ensure higher education institutions can offer micro-credentials effectively and viably.

Administrative processes

To effectively implement micro-credentials various partners institutions mentioned the need for clear and structured administrative processes, including admission and certification processes.

Quality assurance

To implement high-quality micro-credentials, institutions need to develop a strategy on how they will ensure the quality of these offerings. Taking into account the target audience, there needs to be a clear internal quality assurance process. Additionally, several partners mentioned the need to address if and how micro-credentials will be accredited. This is important to ensure they can be formally recognised to enhance their value for both students and employers.

Student support system

A comprehensive student support system must be in place to guide learners throughout their educational journey.

Added value of offering micro-credentials

Although there are still challenges in their implementation, micro-credentials hold value in serving various purposes and objectives for both learners and higher education institutions. The following benefits highlight the strategic importance of micro-credentials in modernising higher education and addressing the evolving needs of learners and the labour market.

Continuing professional, personal, and cultural development

Micro-credentials contribute to various aspects of a learner's personal and professional growth and have an important role in supporting lifelong learning. They are designed to provide learners with specific and targeted ('fit for purpose') knowledge, skills and competences that respond to personal, employment, societal or cultural needs. They play a crucial role in upskilling and/or reskilling the workforce, addressing the needs of the labour market and facilitating job mobility.

Attracting new and/or different target groups

Micro-credentials can widen access to higher education by attracting diverse learners, including non-traditional students. They can engage learners, regardless of their previous qualifications or backgrounds. Their flexible and short-term structure and their focus on a particular subject area/topic can be beneficial for those unable to commit neither time nor financial resources required for a full degree programme. The MCE-study of Antonaci et al. (2023) reveals the diverse needs, motivations and preferences of different learners and identifies three distinct learner profiles: the Senior Expert Learner, the Senior Explorer Learner, and the Junior Starter Learner.

Flexible learning pathways

Micro-credentials meet the demand for more flexible learning options and support learners' autonomy in earning academic credit. They can be pursued independently of traditional qualifications, providing stand-alone value and allowing learners to explore different fields

before committing to a full programme. In this way, learners can choose specific areas to develop knowledge and/or skills for their upskilling or reskilling, rather than following a rigid sequence of modules. At the same time, micro-credentials have the potential to provide an alternative path to obtaining a traditional degree, by allowing learners to fit together, build and stack credits towards a larger qualification.

Enhanced industry and academic collaboration

Micro-credentials can strengthen ties between higher education institutions and industry or other stakeholders, enhancing the attractiveness of higher education institutions. They can help disseminate the latest research and knowledge to a wider audience, including the workforce. Furthermore, they can promote deeper academic collaboration through joint programmes and collaborative (online) learning activities. Offered in an international context, micro-credentials can contribute to the internationalisation and interdisciplinarity of curricula, enriching students' educational experiences.

International recognition and mobility

The definition and framework on micro-credentials as defined in the Council Recommendation (Council of the European Union, 2022) helps harmonise educational systems, ensuring that micro-credentials can be recognised across borders, supporting learners in upskilling and/or reskilling and/or changing careers within a European context. A common understanding of the term micro-credential across member states will facilitate easier comprehension and use by learners.

Guidelines for implementing micro-credentials

While the concept micro-credential is relatively new, higher education institutions have a long-standing history in offering short courses to complement their range of certificates, diplomas and degrees. The rise of micro-credentials however, has sparked growing interest in the potential and credibility of short, focused courses to provide opportunities for upskilling or reskilling the workforce.

The process of planning, designing and developing micro-credentials might not differ much from designing and developing other types of higher education courses and programmes. However, given that micro-credentials sit at the intersection of initial and continuing education, some aspects must be addressed from a different or broader perspective.

This chapter is aimed at higher education institutions as both providers of micro-credentials and as bodies responsible for their recognition. It outlines the processes and workflows involved and offers recommendations to guide institutions through the steps from the initial needs analysis to the design, implementation, assessment, awarding and recognition of quality-assured micro-credentials. Additionally, it includes guidelines with regard to the financial model for micro-credentials and workflows related to student admission, administration and recruitment/marketing strategies. The definition of micro-credential mentioned above will serve as a reference point to guide the reader throughout the journey from design to recognition.

Institutional implementation of micro-credentials: bringing together the expertise

Successfully implementing micro-credentials within an institution requires careful consideration of various elements: from defining a vision for the lifelong learning offerings of the institution, to setting up a robust quality assurance system for micro-credentials, making sure that proper recognition and certifications are in place, safeguarding all needed technical systems. In sum, a collaborative approach is required involving different experts across the higher education institution in order to fully implement micro-credentials.

When starting to plan a micro-credential, it is therefore beneficial to first of all identify the relevant departments within the institution that can assist with different aspects of the implementation (Van Melkebeke & Vanelven, 2024).

Teaching and learning unit/department

This unit has extensive expertise in developing various innovative educational formats. They can help in selecting a specific format, such as micro-credentials, and provide support during the design and development stages.

Educational design and technology unit/department

This unit offers expertise in higher education pedagogy and educational technology. Such units can assist in course development for micro-credentials, whether delivered online or through other formats. They may also provide staff training on topics like accessibility, inclusivity, and intercultural awareness, which are important in designing micro-credentials.

Student administration unit/department

This unit specialises in student administration processes, from admission and registration to certification and recognition of educational formats. They can offer guidance and advice on organising (joint) micro-credentials, ensuring all administrative processes are carefully considered and managed.

Quality assurance unit/department

This unit consists of experts in both internal and external quality assurance processes related to education. They can provide guidance on the necessary internal processes to establish a micro-credential and possibly advice on external processes where required.

Marketing unit/department

This unit can advise on how to market micro-credentials and other aspects of communication. They can possible also advise on connecting with external stakeholders and relationship management.

Legal affairs unit/department

This unit can offer legal advice and support when creating new educational formats. They are the legal experts who can help draft a consortium agreement if higher education institutions

plan to collaborate with other institutions, non-profit organisations, companies, or other entities.

> **CASE:** KU Leuven has created a project team on micro-credentials, that includes different experts: an expert on quality assurance, student administration, policy advisor, consultants lifelong learning, … This helps to create an implementation plan within the institution.

Development of micro-credentials: planning the course

Types of micro-credentials

There are two main approaches to create micro-credentials: developing new, stand-alone courses or breaking down existing programmes (Cirlan, 2023).

- ***Developing new, stand-alone courses.*** Stand-alone micro-credentials are typically part of a higher education institution's lifelong learning offerings. These micro-credentials are flexible in design, delivery, approval, and review processes, and can be quickly adapted to the fast-changing needs of society and the labour market. Higher education institutions often develop these credentials in collaboration with other providers. Sometimes, these micro-credentials combine lifelong learning courses with parts of existing programmes (Cirlan, 2023).

> **CASE**: Universidade Aberta collaborates with several external bodies to offer joint micro-credentials. This situation enables the co-definition and co-design of training programs, managing to meet the needs of trainees and organisations more directly.

- ***Breaking down existing programmes***: Modules from traditional degree programmes might be suitable as micro-credentials. Using such modules is often an easy way to create stackable learning paths and support the completion of those degree programmes. This strategy can be convenient for higher education institutions as they can leverage the same resources such as lecturers, administrative staff, and physical or online spaces for both micro-credential and degree-bearing students (Casa Nova et al., 2025). However, breaking down existing programmes is a process that involves carefully determining which part of a programme can be offered as a stand-alone micro-credential. Not all modules will be fit for purpose as micro-credential and will not fully meet the needs of lifelong learners as they were initially designed to be part of a complete programme. Therefore, modifications might be needed in teaching methods, delivery modes, materials, learning outcomes, and student support (Cirlan, 2023). If a higher education institution deems a module appropriate for dual purposes, consideration is needed to decide whether learners engaging in the module as a micro-credential should join those taking it as part of a degree programme. Mixed groups need careful management to ensure a positive academic experience for everyone (The Quality Assurance Agency for Higher Education, 2022).

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CASE: KU Leuven has experience in opening up degree courses from the regular Bachelor and Master programmes to external audiences. This is done via a so-called 'credit contract'.

CASE: OUC offers all the modules of its Undergraduate and Postgraduate (Master) Programmes as stand-alone courses aiming to address the needs of lifelong learners who seek new knowledge and skills without being able to commit - at least initially - to a full degree. There are two options, a) to submit assignments and undertake the final exams and hence secure a Certificate of Successful Completion with the relevant ECTS, b) to attend the course without assessment methods.

Size of a micro-credential

Micro-credentials are typically measured in ECTS credits. The European Council Recommendation does not however specify an exact duration, and only refers to a "small volume of learning" (Council of the European Union, 2022). Currently, there is no standardised credit range for micro-credentials, and discussions on defining their duration and volume are ongoing. While governments or individual higher education institutions may develop their own frameworks, there are no precise restrictions or strict limitations, as long as the micro-credential does not equate to a degree programme. When considering the size of a micro-credential, it is important to note that the term does not necessarily imply a very small module. Rather, it represents something that is being studied at a 'micro' level and which can stand alone and still have credibility and validity even if it is a module derived from a larger programme. Because of the fact that a micro-credential is intended to meet a particular need in an agile way, a micro-credential is typically designed to be completed in less than a year (The Quality Assurance Agency for Higher Education, 2022). Smaller workloads may also be more appealing to working professionals and part-time learners, as they require less time invested to achieve the micro-credential's objectives and are easier to integrate into their existing commitments (Casa Nova et al., 2025).

CASE: Currently in most countries there are no national legal regulations. In Spain a national decree defines that micro-credentials should be less than 15 ECTS.

Define the purpose, learning objectives and learning outcomes

Defining the purpose, learning objectives and learning outcomes is the first step in the development of a micro-credential. Learning outcomes indicate what a learner is expected to know/understand and to be able to do having completed a learning experience. By shifting the attention from input factors (i.e., workload and contents, etc.) to output factors (i.e., acquired competences and skills), a clear definition of learning outcomes can make a difference to the learner, the instructor, and the assessor, as they can serve as a point of reference from the initial design to the final assessment (CIMEA, 2024).

Clear learning outcomes benefit all stakeholders. They help learners decide whether to enrol in a course and guide them through the learning and assessment processes, clarifying what

they can expect during and after the learning experience. For teachers, learning outcomes are fundamental for planning teaching and learning activities based on knowledge, skills and competences that a learner should acquire. For assessors, they support formative assessment, helping to evaluate whether learners have achieved them.

The following recommendations aim to ensure that micro-credentials are well-designed, relevant, and beneficial for both learners and the labour market.

- ***Articulate the overall learning objective of the micro-credential***: Articulating and justifying the overarching objectives of the course is essential. During this phase, conducting a needs analysis is recommended. For instance, collaboration with public and private employers, engagement with alumni or other stakeholders can facilitate the identification of existing gaps within a particular field/sector and the labour market. This collaboration helps in defining relevant learning outcomes, ensuring they capture industry and employers' needs. However, it is also possible to offer micro-credentials based on the latest research outcomes that are not (yet) necessarily identified as a need in the particular field/sector or the labour market.
- ***Define clear learning outcomes***: After deciding upon the overall purpose, it is essential to write well-defined and measurable learning outcomes of the micro-credential. These learning outcomes should align with the overall objective and clearly describe the skills, competences and knowledge that learners should demonstrate and acquire after completing the micro-credential.

- ***Ensure consistency and comparability***: Diversity in learning outcomes (e.g. different level of detail, focus on theoretical knowledge or practical skills, etc.) may reflect the different purposes and interests encompassed by the variety of micro-credentials. However, it is fundamental to maintain consistency in the descriptions of knowledge, skills, and competences. Learning outcomes should be clearly structured, comparable and understandable beyond the higher education sector, ensuring recognition and validity across different contexts.

Align the course with the needs of the labour market

Depending on the objectives of the course or programme, it is recommended to align the learning outcomes with the ever-evolving needs of the labour market and society. Engaging employers and sectoral bodies in co-design and validation processes can enhance the relevance and uptake of microcredentials (Corbelli et al., 2025). Collaborating with third parties in developing the micro-credential programme or course can ensure that these learning outcomes address concrete needs and requirements (e.g. recognition/accreditation). Micro-credentials aimed at upskilling and reskilling benefit from co-creation, where both the higher education institution and employer(s) work jointly to design the course as equal partners and contributors. Involving external partners, hence increasing the micro-credential's relevance and appeal, can also have a positive impact on the recruitment of participants.

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CASE: Companies in Flanders have extreme difficulties in finding and keeping technical skilled people that know how to design and develop a chip. In answer to this need, the MCE pilot course 'Micro-credentials Chip design' at KU Leuven, was developed in close collaboration with the chip industry. Together, they defined the target audience, learning outcomes and programme of the micro-credential. Furthermore, several experts from the companies, were involved as teachers in the course.

The European Skills/Competences, Qualifications and Occupations (ESCO) reference framework can also be a valuable tool for identifying the most relevant and in-demand skills across the EU. The ESCO framework describes key competences and skills and indicates their relevance to various occupations. Defined at European level, this ensures alignment of skills and facilitates transferability and worker mobility across the EU.

Assign a Qualifications Framework level

Qualification Framework levels enhance the transparency of skills and knowledge achieved, facilitating the recognition of micro-credentials. The MICROBOL common framework for micro-credentials in the EHEA recommends including micro-credentials in the National Qualifications Framework (NQF) whenever possible, with decisions made at the national level. However, assigning a specific level to a micro-credential can be challenging (Cirlan & Loukkola, 2020). For instance, a micro-credential might align with Bachelor-level competencies in one subject area but be more suitable for a Master-level programme in another. In such cases, an option is to assign the level based on the majority of learning outcomes or determine an average of the learning outcome levels.

Additionally, it is important to provide clear information to learners, clarifying that while a level is assigned to a micro-credential, the certificate awarded should not be mistaken for a full degree that grants access to subsequent qualification levels.

The chosen qualification level will have an impact on the types of learners that will be eligible for the course or programme, and on the pre-requisites for enrolment and successful completion of the programme.

Identify the target audience

When developing a new course, it is important to clearly define the profile of the target audience. Micro-credentials may focus on regular students (those already enrolled in a formal study programme) or be extended to a broader audience of lifelong learners. The group of learners targeted by the micro-credential programme or course might therefore be quite diverse: students, professionals, job seekers, retirees, lifelong learners, etc. To meet their diverse needs, it is recommended to follow a learner-centred approach in designing and implementing micro-credentials.

- ***Specify prerequisites and prior knowledge***: The first step is to clearly define the profile of the learner to whom the course is most relevant and beneficial. The next step is to determine which pre-requisites and prior knowledge are necessary to successfully follow the micro-credential. Institutions should offer accurate information about the

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course's commitment level in terms of time and effort required, the learning outcomes, and the delivery modalities to help learners make informed decisions on whether or not to enrol for a micro-credential. It is important to evaluate whether additional admission criteria such as a numerus clausus, are necessary for certain courses. It is also crucial to provide clear information to facilitate the marketing and recruitment process.

- ***Account for diverse needs and backgrounds***: Learners may have diverse social backgrounds, profiles, ages, experiences, or levels of previous education. Additionally, learners who engage with micro-credentials most likely have different reasons for pursuing such courses (e.g. to upskill, to reskill or to explore a personal interest) and have different personal opportunities to engage with the course around other (personal and/or work) commitments. The design of micro-credentials will need to carefully consider the profile and characteristics of the learners and their varying needs and reasons for study (Cirlan, 2023).

- ***Support for non-traditional learners***: Institutions need to ensure that micro-credentials are accessible and inclusive to non-traditional learners, such as those with no previous higher education experience or those from diverse social backgrounds. They need to make sure that learning opportunities are accessible and fair and do not disadvantage learners with particular needs or characteristics. They should take these factors into account when designing the learning activities and assessment methods, offering alternatives that accommodate specific circumstances or offering support where needed (The Quality Assurance Agency for Higher Education, 2022). Also, results from the MCE project reinforce the importance of designing microcredentials and associated services with a diversity of users in mind, particularly by ensuring clarity, simplicity, and support for less experienced or digitally confident learners (Corbelli et al., 2025).

- ***Gather learner feedback***: After the micro-credential has finished, institutions should collect feedback from learners to assess the quality of learning and teaching and the extent to which the micro-credential has met its intended purpose. This feedback needs to be used to make continuous improvements where necessary.

Design a flexible course

Micro-credentials offer a flexible alternative to traditional degrees, particularly in terms of design, delivery, and assessment. Their content and purpose can determine their size and level, rather than adhering to the more rigid academic framework for degree programmes. Institutions should take into account the following aspects when designing a micro-credential:

- ***Flexibility and focus***: Micro-credentials aim to offer short and flexible learning opportunities. They should be as flexible as possible to respond quickly to needs and to accommodate learners with various time constraints. However, excessive flexibility could dilute their value, especially for shorter courses. Higher education institutions must therefore carefully balance flexibility and adaptability while maintaining the

micro-credential's focus and effectiveness (The Quality Assurance Agency for Higher Education, 2022).

- ***Delivery methods***: Micro-credentials can be offered in mixed formats such as blended, hybrid or combining synchronous and asynchronous (Caforio et al., 2023). Micro-credentials can be delivered fully online, in-person, or hybrid, and they can be structured as intensive short sessions (a day or less) or extended over several weeks or months. While delivering micro-credentials fully online and asynchronous, with flexible start and end points (allowing learners to join activities and access course materials at any time and from any location rather than as part of a cohort), provides high flexibility for learners, they can also be delivered through various other methods such as lectures, seminars, practical workshops, and presentations. Ultimately, it is important that the delivery method caters to the learners' needs and the course's nature.

- ***Workload and engagement***: Courses should have a manageable workload to accommodate learners' other (personal, professional) commitments while taking the course. Institutions should inform learners about the workload before enrolment and provide the necessary support throughout the course. To make the programme truly flexible and adapted to the individual training needs and interests of the learners, micro-credential programmes could offer elective modules allowing learners to focus on the skills and knowledge most relevant to their personal of professional development.

Define the lifespan of the micro-credential

The 'lifespan' of a micro-credential refers to the duration for which the programme or course will be available. The question to consider is whether the short course will be offered only once, or if it will remain available for an extended period of time. Given that one of the objectives of a micro-credential is to respond to current, actual needs of the society, it should be considered how flexible accessing the course is. The question here is whether there is an easy, dynamic access for the learners.

Stackability

The European Council Recommendation highlights 'stackability' as a key feature of micro-credentials. Stackability refers to the "possibility, where relevant, to combine different micro-credentials and build logically upon each other" (Council of the European Union, 2022). This allows learners to, after obtaining a micro-credential, take additional programmes from the same or different higher education institutions or providers, accumulating credits that could eventually lead to a 'stacked' qualification, be it a larger micro-credential or even a full degree. The Recommendation furthermore indicates that the decision to accept micro-credentials and to 'stack' them into a larger credential is of the receiving organisation and that the decision of 'stacking' does not imply an automatic entitlement to a qualification or a degree (Casa Nova, 2025).

The possibility to stack micro-credentials is a way to provide learners with flexible learning pathways. The accumulation and combination of micro-credentials presents the option to

gather multiple traditional and non-traditional qualifications and credentials to construct a more comprehensive credential or complete qualification. Nonetheless, micro-credentials should be seen as complementary and not alternatives to full degrees Cirlan & Loukkola, 2020).

It is important to note that not all micro-credentials need to be inherently stackable. They can also be offered as stand-alone qualifications. However, when micro-credentials are designed to be stackable, careful consideration should be given to what they can be stacked towards. The concept of 'stackability' can encompass various approaches:

- *Independent design:* A micro-credential can be designed independently from other micro-credentials or degree programmes. In this case, during the design phase, it can already be identified which full degree programmes could potentially recognise the newly designed micro-credential. The degree programme director might be consulted in advance, to recognise such micro-credentials as being aligned with some of the degree programme's learning outcomes and be ready to grant exemptions to learners who obtain the micro-credentials. If a degree programme director is not consulted beforehand, it does not mean the micro-credential cannot be recognised within the programme. However, this requires students to request recognition themselves, placing the burden on them. To ease this process, efforts should be made to identify at least one compatible full degree programme in advance (Van Melkebeke & Vanelven, 2024)..

- *Grouping related modules:* While micro-credentials may be developed individually, it is also an option to create groups of related modules and pathways. This approach gives the learner more flexibility in deciding how extensively they wish to study a topic and which aspects to prioritise.

- *Consortium approach:* Recognising micro-credentials is easier within the same institution or when there is a partnership agreement between institutions. A consortium model, where multiple higher education institutions agree to recognise each other's micro-credentials, allows learners to move more freely between them. This requires formal agreements specifying which body will ultimately grant the award, what that award entails, and the criteria for granting it. This approach supports the development of structured learning pathways, whether as specific sets of micro-credentials leading to a macro-credential or complementary micro-credentials that help learners deepen skills and knowledge in particular areas. Information should be provided on which courses might overlap, making them less useful in combination (The Quality Assurance Agency for Higher Education, 2022).

- *Existing degree courses:* A final option is to use parts of existing degree courses to design a micro-credential, or to offer a degree course as micro-credential. This approach would simplify recognition within a broader credential, as it would be almost automatic. To do this, it is necessary to verify the requirements for opening degree courses to external audiences (Van Melkebeke & Vanelven, 2024).

In all cases, it is important to provide learners with clear information on how micro-credentials can stack upon each other and which combinations could be most beneficial for them.

Assessment

One of the mandatory elements from the European Council Recommendation for describing a micro-credential is the 'type of assessment'. It is important that micro-credentials learning outcomes are rigorously assessed and learning outcomes acquisition is verifiable as it ensures the credibility of both the provider and the offer (Casa Nova et al., 2025). The assessment of a short course leading to a micro-credential must be reliable and valid, accurately reflecting the learning outcomes achieved by participants. It should adopt a learner-centred approach and may take any form appropriate to the learner's needs and course requirements. Whether formative or summative, the assessment format must be tailored to the course's scale, content, and expected learning outcomes.

When selecting a specific assessment method, several factors have to be considered, including the intended learning outcomes, level of study, delivery mode of the short course, and the pedagogical approach. Higher education institutions must thereby consider the flexible nature of micro-credentials. This may involve alternative assessment methods, which could impact existing assessment policies. Institutions should consider the following aspects when reflecting on their assessment practice:

- *On-site vs. online exams*: Course organisers have to distinguish between on-site and online exams. For on-site exams, already established university standards should be applied. Online exams and assessments using e-learning solutions require special attention to the credibility and reliability of the examination process. Participant identification and exam credibility are fundamental to fair assessment which requires methods like proctored exams or oral exams. Online assessments should also use various tools and not rely solely on a single event, such as the final exam. Participation during online sessions, engagement with tasks on the online platform, and class attendance can also be considered.
- *Innovative assessment practices*: In order to make the learning process more engaging and practically relevant, interactive activities, simulations, and gamified elements can be incorporated to mirror real-world applications and challenges.
- *Feedback mechanisms*: Incorporating feedback mechanisms into assessment practice, such as:
  - Automated feedback, for immediate reinforcement of concepts following quizzes and automated assessments.
  - Instructor feedback, for providing detailed insights on more complex assignments and to enhance learner understanding and development.
  - Peer feedback, to encourage richer interaction within the learning community through shared critiques and discussions (Van Melkebeke & Vanelven, 2024).

- *Clear communication*: Participants should receive clear communication about assessment rules, including sample exams and additional instructions and support, especially if advanced technologies like proctoring are used.
- *Timeframe*: Due to their shorter duration, micro-credentials may not fit neatly into existing timeframes for assessment boards. Some micro-credentials may support a learner-led approach, allowing learners to control when they submit their assessments and meaning it may be more sensible to track individual learners rather than cohorts. This may require higher education institutions to reconsider the frequency, membership, and operation of assessment boards for micro-credentials.
- *Accessibility and inclusion*: A balanced approach, integrating rigorous assessment methods, while maintaining accessibility and flexibility for learners should be promoted (Casa Nova et al., 2025). All assessments should be designed with accessibility in mind, including necessary accommodations such as alternative formats and accessible web functionalities.
- *Ensuring quality and integrity*: Quality assurance processes should be put in place to maintain the integrity and high standards of assessments. This could include periodic reviews, updates to question banks, and the use of advanced plagiarism detection tools to uphold academic integrity. Institutions should also adopt secure identity verification mechanisms that uphold academic integrity without creating unnecessary barriers for students.

Quality assurance

The European Approach to micro-credentials emphasises the need for a clear and transparent quality assurance system for short learning programmes that lead to credentials. National and institutional discussions are currently ongoing, with each institution and member state determining its own quality assurance approach for micro-credentials.

Higher education institutions hold primary responsibility for quality assurance through their **internal** quality assurances processes, which are typically part of their regular quality assurance activities. Universities ensure the quality of their academic offerings, in compliance with the European Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESGs) (Cirlan & Loukkola, 2020). Key criteria for internal quality assurance that are particularly relevant for micro-credentials include well-defined learning outcomes, transparent assessment methods and information transparency (Cirlan, 2023).

As micro-credentials aim to swiftly address societal and labour market demands, the quality assurance process should be efficient and tailored to meet these specific objectives without being overly cumbersome for institutions.

Most institutions do not advocate for an additional external accreditation procedure for every new short learning programme leading to a credential.

External quality assurance plays a complementary role to internal quality assurance systems and should focus on reviewing the fitness-for-purpose of the institutional approach to micro-

credentials avoiding overburdening higher education institutions. In almost all EHEA countries, the approach to external quality assurance is a combination of institutional and programme-based evaluation (ENQA, 2023). In both cases, quality assurance of micro-credentials can be integrated in the existing processes, rather than creating new ones specifically for micro-credentials, in order to ensure the external quality assurance remains proportionate.

CASE: ANECA, the Spanish national agency for Quality Assessment and Accreditation published a framework on the quality assurance of micro-credentials in the Spanish University Systems. ANECA has decided that the internal quality assurance systems of institutions should integrate:

- The quality of the micro-credential, according to the standards established by the European Union
- The quality of the learning experience
- Feedback from learners on the learner experience
- Feedback from stakeholders and other providers on the learning experience

At the moment, in Spain there is no specific external procedure to review the quality of new micro-credentials

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Financing the micro-credential

One of the main issues to creating micro-credentials – identified in the MCE-project is the funding of the offerings, and the need for a solid financial and business model for micro-credentials. In order to successfully implement a micro-credential, it is crucial to have a clear and sustainable financial model. In particular in the case of a collaboration the financial model should be agreed upon by all parties involved. The following steps are recommended to create a sustainable financial model (Van Melkebeke & Vanelven, 2024):

Expenses: calculate the full costs of the micro-credential

First, the full costs have to be calculated when creating and implementing a (joint) micro-credential. This includes: preparatory costs, the running costs and possible additional costs, such as operational costs for curriculum development, student mobility, IT costs for student administration, invited speakers, etc. Institutions should check with their financial department if they have a costs calculation template available that can be used to that end.

Sustainable income opportunities

Though a few countries provide funding for the implementation of micro-credentials, many do not, and there is no specific EU funding scheme for creating micro-credentials. The guiding principle is that micro-credentials should be financially self-sustaining. In order to be self-sustaining, institutions can adopt diversified business models, including fee-based enrolment, sponsorships, corporate partnerships, government funding, etc.

Tuition fees

When it comes to covering the costs of the short course, it is possible to charge fees to participants. In order to have a fair and sustainable price setting and be attractive on the market, higher education institutions can compare their offer with similar offers in the market. Analysing what other institutions are offering regarding the same subject or for a similar target audience, and the corresponding fees, can provide insights into the average price range and the value proposition of the micro-credential.

The amount of the fees can be decided almost in a completely free way, as micro-credentials do not fall within the scope of the legislation about degrees. Some institutions, however, have regulations regarding fees for continuing education that can be charged to external learners.

Micro-credentials might be open to a large audience, composed of degree students, as well as professionals, job seekers, and/or lifelong learners. Depending on the profile of the participants, it is possible to charge different fees. Fees might also be differentiated based on the specific activities within the course the participant is taking part in (e.g. a participant taking part in the course activities and only needing a certificate of attendance pays less than a participant who also takes part in the assessment and wants to obtain ECTS credits). Take into account that fee-based models ensure a direct revenue stream but may limit access for underserved learners.

European, national, regional and/or institutional funding opportunities

Apart from tuition fees of participants, also European funding opportunities can be investigated. For example, in case of cooperation with other higher education institutions abroad, the Erasmus+ Blended Intensive Programmes might be a potential source of funding. It is advised to carefully check the eligibility criteria for such funding.

> **CASE:** The Open University of Cyprus (OUC) started offering Erasmus+ Blended Intensive Programmes (BIP) as of July 2024. These BIPs awarded 3 ECTS and attracted students from partner and non-partner Universities in Europe. To design and offer a BIP, OUC utilises Erasmus+ funding (6.000 - 8.000 Euro for 15 – 20 participants).

Partners could also explore funding opportunities at the national, regional or institutional level. National funding of micro-credentials can vary widely within Europe. For example, some countries offer specific project funding regarding micro-credentials. Although project funding is not sufficient to ensure the long-term sustainability of joint micro-credentials, government incentives and funding schemes can play a critical role in the starting phase and/or in scaling up initiatives (Casa Nova et al., 2025).

> **CASE**: Spain incorporated micro-credentials in Royal Decree 822/2021, allowing universities to offer short programmes of less than 15 ECTS credits to certify specific learning outcomes. Later, the Ministry of Universities launched an Action Plan (2023-2026) to promote university micro-credentials, with funding allocated to public universities through regional governments.

> The plan aims to foster lifelong learning among adults and employers, expand universities' role in education at all levels, improve employment and education opportunities, ensure access to training for all adults, and support personalised learning pathways.

Sponsorships

Taking into account that one of the goals of the European approach on micro-credentials is to respond to labour market needs, it is also advised to collaborate with external sponsors, such as companies, business sectors or professional organisations to support the creation of micro-credentials and/or to provide funding/sponsorships for the participation of their own staff. Such partnerships allow businesses to co-develop and fund micro-credentials tailored to their workforce's particular needs, creating a win-win scenario for both employers and learners.

Partnerships

Micro-credentials can be organised in collaboration with multiple parties (e.g., other higher education institutions, non-profit organisations, government services, companies or other organisations, etc.). In this case, it will be necessary to formalise legal agreements among the parties involved in which the essential commitments from all partners are outlined. Key elements to incorporate in a consortium agreement include the following (Van Melkebeke & Vanelven, 2024):

- *The governance structure*: clearly defining the roles, decision-making processes and responsibilities within the micro-credential management process. For instance, each institution can specify the responsible 'coordinator' and the members of the management committee for the programme.
- *The partners' obligations and responsibilities*, particularly the lead university's. Responsibilities cover recruitment, teaching methods, assessment, complaints procedure, quality assurance, etc.
- *The micro-credential*: detailed description of the course offered. This can be included in the annex/es to the agreement.
- *The regulations for ECTS recognition*: given that ECTS credits are to be granted within the micro-credential, the parties involved must establish the criteria under which these credits will be recognised at partner universities, if applicable.
- *The financial model*: clearly outline the financial arrangements, for instance, setting the fees for the micro-credential, agreeing on revenue and cost sharing. Different models can exist (e.g. one partner in charge of collecting and distributing the revenues to the other partners involved; or each partner paying their own costs and keeping their own income).
- *Marketing, publicity and branding*, including all marketing efforts, related costs, and any rules for granting licenses to use parties' logos and names, if applicable.
- *The micro-credential certificate*: decide the format (paper or digital document), what information it should contain, by whom it will be issued, under what conditions etc.
- *Intellectual property* (any data, know-how, material or information whatever its form or nature, tangible or intangible): within the courses the parties will probably use

copyright-protected materials; perhaps during the implementation of the micro-credential the parties will also create such rights in the future. The agreement should specify the rules for the protection of intellectual property.

- *Exclusivity:* consider guaranteeing exclusivity for the micro-credential, agreeing not to organise or enter into agreements with other parties for similar micro-credentials that may compete, as long as the agreement remains in force.
- *GDPR matters*: the agreement should include provisions regarding the protection of personal data.
- *The admission process* allowing new partners to join the consortium offering a joint micro-credential. This can be allowed by introducing a clause in the Consortium Agreement that will enable a new partner to join with an addendum of the agreement, without the need to amend the whole agreement which typically takes a significant amount of time and requires the signatures of all parties.
- *Term, review, and termination of the legal agreement*: Some issues need to be considered, for example the duration of the agreement, whether the micro-credential will be offered even after a decision for termination of the agreement has been made until all participants successfully complete the course, etc.
- *Applicable law and dispute resolution procedures:* This is particularly applicable in case partners are not located in the same country.

Institutions can check with their legal departments if there are any existing templates for a Consortium Agreement to be used.

Communication & marketing strategy

Effective communication is essential for ensuring the sustainability of a micro-credential. It is crucial for an institution offering micro-credentials to engage their marketing and communication units and utilise their expertise to effectively disseminate information to target audiences.

When promoting a micro-credential, clarity is key. Clear, detailed, and accessible communication is necessary to ensure that potential learners have all the information they need to be able to identify appropriate courses and make an informed decision about enrolling in a micro-credential.

> **CASE**: Visibility of the offerings: MCE-partner Kaunas University of Technology is part of the 'ECIU University', the European Consortium of Innovative Universities. The alliance has set up a DXP - digital experience platform (dxp.eciu.eu) in order to create visibility for the offerings of the partners. More than 150 micro-modules from 13 ECIU members are presented as of March 2025. ECIU serves as an umbrella legal entity and micro-credentials are issued via DXP platform.

Aspects to communicate about include (Van Melkebeke & Vanelven, 2024):

*Models and guidelines for the institutional development of CEPD
and the design, development and recognition of micro-credentials*

MCE

- ***Target group and objectives***: Define the intended audience and specific objectives of the micro-credential.
- ***Learning outcomes***: Articulate the skills and competences learners will acquire.
- ***Prerequisites***: Outline any prior knowledge or skills needed.
- ***Mode of delivery***: Specify whether the course is online, hybrid, or on-campus.
- ***Duration***: Indicate the length of the course. Also indicate whether there are fixed start and end dates or whether learners are allowed to choose a flexible learning path and complete the course at their own pace of study.
- ***Language***: Indicate the language of instruction.
- ***Assessment modalities***: Describe the evaluation methods.
- ***Enrolment procedure***: Explain the steps and deadlines for enrolment.
- ***Fees and discounts***: Clearly state the cost of the registration fee and any available discounts or sponsorships.
- ***Partners***: Mention any partners involved in offering the micro-credential.
- ***Contact information***: Provide details for inquiries.
- ***Success requirements***: Outline what is necessary for success in terms of achievement and clearly articulate expectations of learner engagement, including the number of hours required (online and/or offline), types of activities, and assessment format and timing.
- ***Industry relevance***: Highlight how the micro-credential meets the needs of industry.
- ***Complementary micro-credentials***: Mention other related micro-credentials and opportunities for further qualifications.
- ***Credit acquisition and transfer***: Provide advice on credit transfer/accumulation and transfer between higher education institutions and/or other providers.
- ***Terms and conditions***: Present terms and conditions in a user-friendly format, including options for suspending studies and eligibility for refunds.
- ***Resource availability***: Provide information about the resources and services available to learners enrolled in a micro-credential.

Student administration

Admission

Micro-credentials can be offered to various target groups. Organisers may opt to offer the course leading to a micro-credential only to a selected audience. In this case, it is essential to clearly define eligibility/admission criteria (such as required prior knowledge or qualifications) and application procedures. The organiser should consider:

- Language requirements, and which proofs of language proficiency are accepted
- Prior knowledge of the participants, and how to verify it
- Proof of having obtained a degree at a specific EQF level, if there are any prerequisites
- Relevant disciplinary knowledge and skills and/or prior work experience, if included in the admission criteria
- Alternatives for learners with non-traditional backgrounds

In case of a collaboration, it is recommended that the consortium partners establish one single application and admission procedure. Additionally, having one institution review the eligibility of all applications can help ensure the equal and fair treatment of all applicants.

Registration and enrolment

In order to obtain micro-credentials, it will most likely be necessary to enrol participants as 'students' of the awarding university. Institutions should check with their relevant department, e.g., student affairs, how the enrolment process is organised. In case of a joint micro-credential, registration at several institutions might as well be necessary to give access to different platforms of the universities offering the short courses.

Student support

Due to the short duration of micro-credentials, learners may have minimal or no physical presence on campus. Higher education institutions therefore need to plan how to provide suitable support for the distinctive needs of micro-credential learners, as their use of learning resources, whether in-person or remotely, might occur intensively for a short period of time. They may also require one-to-one engagement and support outside regular teaching hours.

Further recommendations related to student support for micro-credentials are:

- ***Clarify available resources***: Clearly outline the academic and non-academic facilities and resources available to learners, ensuring this information is transparent and provided before application and enrolment to help learners make informed decisions.
- ***Provide academic support***: Recognise that learners may have no prior or recent higher education experience and may not easily access on-campus support. Academic support should therefore be a critical consideration.
- ***Support self-directed learning***: Acknowledge that self-directed learning requires different skills, which may need to be developed even for those with prior higher education experience. Integrate academic skills development into the micro-credential where possible.

Certification: awarding a micro-credential

After successfully completing a short course, learners will receive a micro-credential. If the micro-credential is awarded jointly by multiple partner institutions, it needs to be decided which institution will issue the certificates on behalf of all partners.

With regard to the certification and following the European Council Recommendation, the micro-credential certificate should include the following 11 mandatory standard elements (Council of the European Union, 2022):

- Identification of the learner
- Title of the micro-credential
- Country(ies)/region(s) of the issuer
- Awarding body(ies)
- Date of issuing
- Learning outcomes

- Notional workload needed to achieve the learning outcomes (in European Credit Transfer and Accumulation System – ECTS, wherever possible)
- Level (and cycle, if applicable) of the learning experience leading to the micro-credential (European Qualifications Framework, Qualifications Frameworks in the European Higher Education Area), if applicable
- Type of assessment
- Form of participation in the learning activity
- Type of quality assurance used to underpin the micro-credential

In addition to the mandatory elements, there is also a (non-exhaustive) list of optional elements that can be mentioned where relevant:

- Prerequisites needed to enrol 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 (stand-alone, independent micro-credential/integrated, stackable towards another credential)
- Further information

One of the elements included in the EU definition of micro-credentials is 'portability'. It is stated that the learner/credential-holder is able to store their micro-credentials in a system of their choice (e.g. through secure digital wallets, such as Europass), to share the credential with a party of their choice and for all partners in the exchange to be able to understand the content and verify the authenticity of the credentials. (Council of the European Union, 2022).

To ensure micro-credentials are portable and recognised, it is important to provide clear, reliable and easily accessible information throughout their lifecycle, from enrolment to awarding. This includes outlining learning outcomes and the level of the learning experience, which are essential for institutional recognition of prior qualifications. Additionally, it is beneficial to specify if and how the micro-credential can be recognised within the same or other institutions, the number of credits recognised, etc.

Digital credentials can facilitate portability, transparency of information and verification of authenticity, thus also supporting their recognition (Cirlan & Loukkola, 2020). For higher education institutions it is important to look into how digital tools can support in the entire process of managing and issuing micro-credentials as part of their broader digitalisation strategy.

From a technical perspective, Blockchain technology presents a potential solution for certifying and verifying micro-credentials (Caforio et al., 2022). Blockchain technology can significantly enhance various aspects of the micro-credential lifecycle, during admissions, registration, the automatic verification and recognition of the micro-credential. Blockchain technology, characterised by its decentralised ledger system, plays a crucial role in facilitating secure and transparent record-keeping and transactions, eliminating the need for

intermediaries. Micro-credentials can be securely stored and validated, guaranteeing their integrity and authenticity through an immutable process (Casa Nova et al., 2025).

Institutional engagement and implementation of micro-credentials - conclusion

Effective communication about the nature and value of micro-credentials is essential for their successful uptake. As underscored across the MCE project, particularly in Deliverable 5.3, stakeholder acceptance depends greatly on the clarity, visibility, and perceived benefits of micro-credentials. Academic and professional staff within higher education institutions play a central role as initiators and developers of these offerings; their understanding and engagement are critical in aligning institutional practices with evolving European standards and expectations.

To respond to the identified need for greater institutional awareness and capacity-building, a series of institutional seminars were organised across the MCE partner institutions. These seminars, detailed in Deliverable 4.2, successfully fostered a shared understanding of micro-credentials and surfaced key implementation challenges. These challenges - related to quality assurance, recognition, digital certification, student support, and competition with private providers - are echoed in the pilot studies analysed in Deliverable 5.2, which reveal a wide variety of design choices and institutional readiness levels. The pilots also demonstrate that distance education institutions are particularly well-positioned to address many of these challenges due to their flexibility and scalability.

In addition, findings from Deliverable 5.3 reveal that while micro-credentials are generally perceived as low in complexity and easy to experiment with (trialability), their benefits (observability) are not yet consistently recognised, particularly by students. This underlines the importance of institutional strategies not only for course design and implementation but also for effective dissemination and learner support - areas also covered in the guidelines provided in 4.2.

These lessons learned from the institutional seminars, pilot studies, and stakeholder evaluations have informed the formulation of practical guidelines for the implementation of micro-credentials. These are anchored in the European Approach to Micro-credentials and were developed to support institutions at all stages - from initial needs analysis and learning design to assessment, certification, and recognition.

Moreover, as reinforced by Deliverable 6.2, such institutional guidelines must be developed in parallel with policy dialogues at national and European levels. Fragmented policy environments and inconsistent quality assurance practices across member states create further complexity. Therefore, the institutional workflows and financial models proposed in 4.2 are designed not only to support local implementation but also to align with broader systemic goals, including transparency, portability, and cross-border recognition.

In summary, the guidelines presented in this deliverable serve higher education institutions both as providers of micro-credentials and as recognition bodies. When used in combination

with the insights from D5.2 (pilot implementation), D5.3 (stakeholder perception), and D6.2 (policy recommendations), they offer a comprehensive roadmap for addressing institutional, pedagogical, and systemic challenges. This integrated approach strengthens institutional capacity to contribute meaningfully to a coherent and sustainable European micro-credential ecosystem.

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