



# Models and guidelines for the design and development of a joint micro-credential programme in higher education



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# **Models and guidelines for the design and development of a joint micro-credential programme in higher education**

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## Tags

joint micro-credential programmes, short learning programmes, joint undergraduate/postgraduate certification programmes, joint curricula and mobility, joint continuing education programmes, joint expert programmes, joint specialization programmes, joint focus diplomas, joint MOOC pathways, joint Gradeos, joint MicroMasters, joint nanodegrees

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- European Short Learning Programmes ([E-SLP](#))
- Modularisation of Continuing Education and professionalisation by Micro-credentials ([MCE](#))
- European Maturity Model for Blended Education ([EMBED](#))
- European MOOC Consortium for the Labour-Market ([EMC-LM](#))
- Professional Development for Digital Teaching and Learning ([DigiTel Pro](#))

# Introduction

This eBook provides pedagogical guidelines for designing and developing joint micro-credential programmes, to be published on the BLOOM hub. The hub will present a series of models and guidelines for key educational digital formats for digital higher education courses and programmes, international collaboration and mobility.

The development of micro-credentials in a lifelong learning perspective is a top priority of the European Commission, as expressed in the Proposal for a Recommendation to the Council of Ministers on Micro-credentials. In the preparatory documents of the European Commission's Micro-credentials in Higher Education Consultation Group, the offer of microcredentials can vary in learning volume from 1 ECTS to any volume smaller than a degree at the same EQF level.

In this document, we cover micro-credentials of 4 to 5 ECTS and larger programs of in formal higher education settings and consisting of more than one course, such as joint CMF micro-credential programmes, undergraduate/postgraduate certification programmes, continuing education programmes, expert programmes, specialization programmes, focus diplomas, MOOC pathways, gradeos, MicroMasters or nanodegrees. A qualification is awarded after following such a micro-credential programme.

Single micro-credential courses of 1 to 3 ECTS have different design guidelines, therefore they are explained in another eBook. Individual online courses are already rewarded with ECTS credits. Stand-alone micro-learning units are smaller than 1 ECTS and are covered in the same document. In many cases, they are awarded with a badge.

The qualification structure of micro-credentials will be discussed in the near future at the level of the EU Council, national governments and within higher education institutions.

The basic premise for our guidelines is “teaching as a design science” (Laurillard, 2012): educational formats as presented on the BLOOM hub should be the subject of successive design steps, in which teachers and programme boards take the lead, supported by teaching and learning and educational ICT support services. Institutional leadership should promote innovation in higher education through digitization strategies and create the necessary conditions for the design, development and implementation of digitized education.

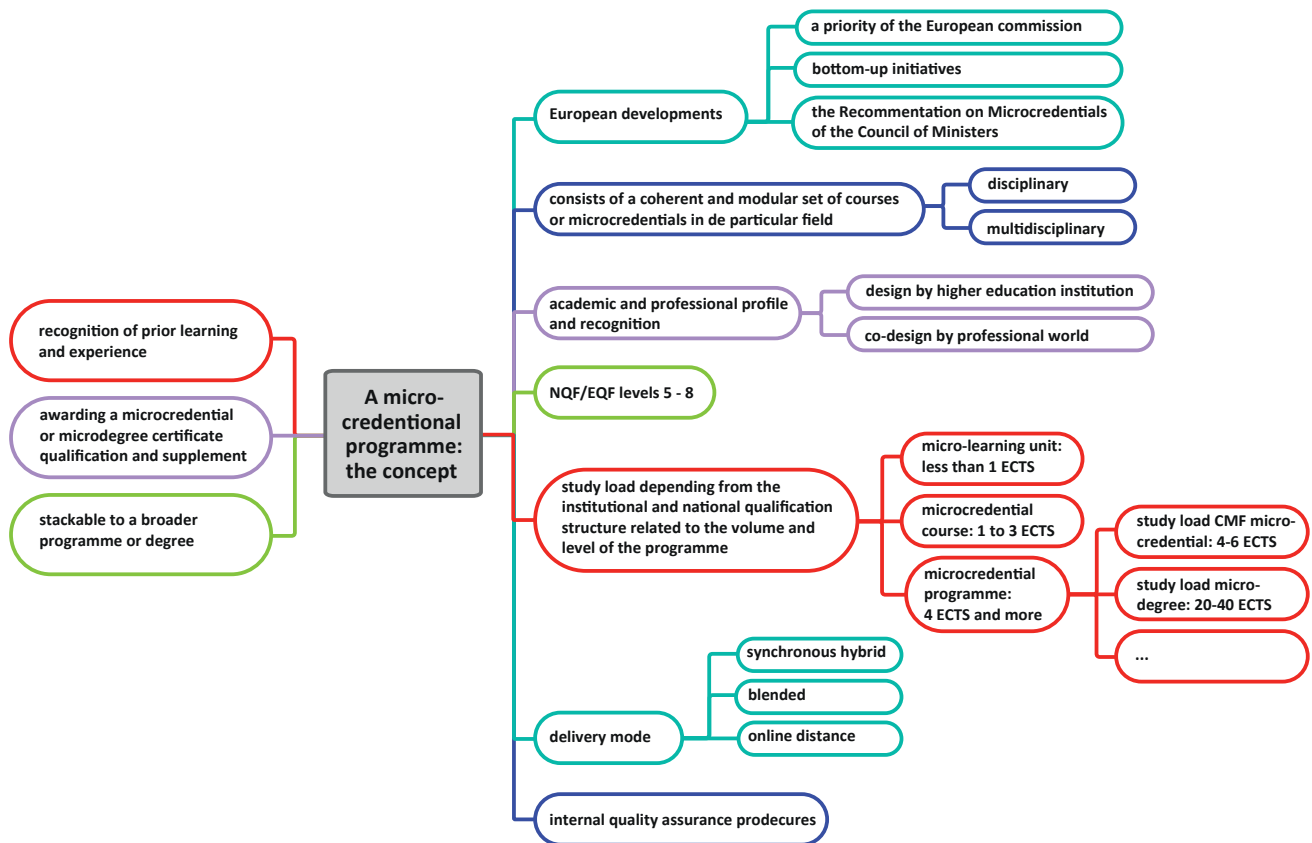
This eBook first provides a general overview of the successive design and development steps for a joint micro-credential programme. The following sections that follow explain each of these steps, mapping out actions and guidelines to be taken for each step. Based on the general overview, each section is directly accessible: from the overview, the eBook can be unfolded.

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# A micro-credential programme: the concept







## The concept

These guidelines for micro-credential programmes are in line with the latest developments in EU policy developments in the field of micro-credentials and with recent practices. A European consensus is emerging on the concept of micro-credentials and further institutional and national frameworks will build on this foundation in the coming years.

## European developments

### *Micro-credentials have become a priority for the European Commission and the Bologna Process:*

- The *Digital Education Action Plan (DEAP)* refers to micro-credentials that “facilitate the provision of flexible, accessible learning opportunities, including for adult learners and professionals, and help them re-skill, up-skill or change careers”, capturing “the learning outcomes of short-term learning” (European Commission, 2018). They are mentioned in the 2020 Bologna Process **Rome Ministerial Communiqué**, asking “the Bologna Follow Up Group (BFUG) to explore how and to what extent smaller, flexible units, including those leading to micro-credentials, can be defined, developed, implemented and recognised by our institutions using EHEA tools” (EHEA, 2020).
- The *European Commission’s Micro-credentials in Higher Education Consultation Group*, was composed of leading experts and organisations in the field. It discussed the DEAP

strategies and several ongoing EU projects, and it was supported by comprehensive reports on the state-of-the-art of micro-credentials (Orr et al., 2020; Brown, et al., 2021). The Group proposed a definition of a micro-credential award. Micro-credential qualifications proof “evidence of the learning outcomes that a student has acquired after a short learning experience. These learning outcomes are tested against transparent standards. The evidence is contained in a certified document stating the name of the holder, the learning outcomes achieved, the assessment method, the awarding body”. As far as formal education is concerned, it is also referring to “the qualifications framework level and the credits obtained”. Micro-credentials are student-owned, can be shared, are transferable, and can be combined into larger credentials or qualifications. They are supported by quality assurance according to agreed standards” (European Commission, 2021).

- The *Microbol project* brought together the members of the Bologna Process to explore how micro-credentials fit into the framework of the European Higher Education Area (EHEA) and linked micro-credentials to the main commitments of the Bologna Process.

A micro-credential is “designed to provide the learner with specific knowledge/skills/competences that meet societal, personal, cultural or employability needs. Micro-credentials are subject to a quality assurance assessment in accordance with the ESG (Standards and Guidelines for Quality Assurance in the European Higher Education Area). They have an explicit reference to defined learning outcomes at a specific EQF–EHEA/NQF (European/National Qualifications Framework in the European Higher Education Area) level that will be achieved, the workload, expressed in ECTS, and to the assessment methods and criteria used.

Any micro-credential can be recognized by a higher education institution as, and through recognition of prior learning procedures (RPL). Micro-credentials are not only useful for professionals, but can also complement the curriculum for undergraduate, graduate and doctoral students (Cirland, E. & Loukkola, T., 2020).

### **Bottom-up initiatives**

Bottom-up, several initiatives have been developed to implement micro-credential programmes in practice.

- The European MOOC Consortium (EMC), consisting of the main European MOOC platforms (Futurelearn (UK), France Université Numérique, Miriadax (SP), EduOpen (IT), iMooX (AU), NAU (PT), AI Campus (GE), OpenupEd (EADTU)) has developed standards for the *Common Micro-credential Framework (CMF)* for MOOC-based programmes (see the chapter on qualifications). CMF micro-credentials consist of a coherent set of MOOCs, have a size of 4 to 6 ECTS and are linked to an EQF level of 5, 6, 7 or 8 levels. The Bologna tools are used. CMF is a European response to a wide variety of qualifications, such as MicroMasters and nanodegrees, that do not use these tools (European MOOC Consortium, 2018).

- In 2017, EADTU members started developing *short learning programmes (SLPs)*. They were a first step in organizing online continuing education and professional development offerings that address the time horizon of learners at work and the needs of the economy and society. Short learning programmes in this concept consist of a coherent set of courses in a field with a total learning volume of 5 to 30 ECTS at EQF levels 5,6,7 and 8. Short learning programmes can be divided into stackable CMF credentials that award intermediate qualifications. The Bologna instruments are used in a similar way. The name of the final qualification differs per institution (EADTU, 2021).
- Along these developments, the *Micro-HE project* (Micro-HE, 2020) gathered the state of the art of micro-credentials in European higher education institutions and was forecasting the impact of the modularisation of higher education on higher education institutions. It was also examining adequate recognition instruments for micro-credentials and proposing a meta-standard for the description of micro-credentials to facilitate the transfer and portability of micro-credentials. As a follow-up, the *ECCOE project* (ECCOE, 2022) developed descriptors for micro-credentials and created a Model Credit Recognition Agreement for cross-institutional recognition.
- The *Evaluate and STACQ projects* of several NARIC offices aim to support institutions in the credential evaluation of micro-credentials for recognition by universities and employers and of mobility (Nuffic, 2022). It produced both an online evaluation tool for micro-credentials and a paper on the future of the qualification.
- A *CEDEFOP study* (CEDEFOP, 2022) provided a better understanding of the role played by micro-credentials, as an education, training and learning element, in supporting labour-market related and employment-relevant training. It aims to offer new knowledge on the characteristics of micro-credentials as well as their impact on existing qualifications and recognition systems.

### ***The EC proposal for a Recommendation to the Council of Ministers***

In the *EC proposal for a Recommendation to the Council of Ministers* of Education (European Commission, 2021), a ‘*micro-credential*’ means “the record of 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. Courses 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 standalone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity”.

In the proposal, *micro-credential records should contain a number of standard elements*, such as the learning outcomes targeted by the learning experience, the notional workload (in terms of ECTS), the level in the EQF or QF-EHEA frameworks, the form of participation

in the learning activity, the type of quality assurance. Optional requirements to the micro-credential description are for example: the prerequisites to enroll, the stackability/integration of the micro-credential.

The proposal calls on the Member States to “supporting the *exploration by higher education institutions of the role of micro-credentials* to offer learning opportunities to diverse learners, in particular by widening an attractive, inclusive and learner-centred offer of lifelong learning activities, including through the activities of the European Universities Alliances”, and to support the delivery and design of micro-credentials, especially also in collaboration with other providers (companies, social partners, civil society organisations, local authorities and private providers).

This eBook offers models and guidelines for designing and developing micro-credential programmes, taking into account the standard elements in the Recommendation. When the Recommendation is adopted in 2022, national Member States will start or complete the development of their own frameworks and regulations.

## Micro-credential programmes: the concept

- In terms of *volume for a micro-credential*, the European Commission’s Micro-credentials Consultation Group in Higher Education” allowed “flexibility for innovation and experimentation: “from one ECTS to less than a full degree”. From a design point of view, however, volume matters. A distinction must be made between:
  - a **micro-credential course**, consisting of a single course (1-3 ECTS) using a method of course design.
  - The design of micro-credential courses is described in another eBook. This also includes the design of microlearning units of less than 1 ECTS within a course, for which labour market demand is growing. These “learning objects” can have also an innovative impact on mainstream courses.
  - a **micro-credential programme**, consisting of a coherent set of courses in a specific field, requiring a curriculum design methodology.
  - In this e-book, we discuss the design of *joint micro-credential programmes*. They have a total learning volume of 4-6 ECTS (CMF micro-credential programmes) or more (for example, a microdegree programme of 20-40 ECTS or an undergraduate or postgraduate certificate programme of 60 ECTS). The volume will depend on the institutional and national qualification structure for micro-credentials that will be developed in the coming years as a follow-up to the intended Recommendation of the Council of Ministers on Micro-credentials.
- The design of a micro-credential programme can be *disciplinary or interdisciplinary*, according to the objectives of the programme and the pedagogical approach chosen (e.g. a challenge-based approach);

- Micro-credential programmes have an *academic and professional profile* and seek academic and professional recognition. They are designed by a higher education institution and possibly co-designed by a labor market organization (a public or private enterprise; a professional body; an employment agency);
- A *micro-credential qualification* in higher education refers to a 5, 6, 7 or 8 level of the national or European qualifications frameworks, awarding a qualification such as micro-credential certificate (CMF) or a broader undergraduate or postgraduate certificate, a professional program certificate, an expert or specialist certificate, a focus diploma, a MicroMaster, a nanodegree, etc. The micro-credential programme qualification is accompanied by a qualification supplement.
- For lifelong learners, digital education is most flexible, accessible and scalable. *Digital delivery methods* for micro-credentials are mainly based on synchronous hybrid (e.g. virtual classrooms), blended or online and distance teaching and learning formats;
- If applicable, micro-credential programmes are accessible after a *recognition of prior knowledge or experience procedure* (see ECTS User's Guide, European Commission, 2016). This can include also non-formal education from providers other than higher education institutions as well as informal learning;
- Micro-credential programmes can be designed to be *stackable into a broader programme*. For example, a CMF micro-credential programme can be stackable into a broader micro-credential programme. This programme can in turn be stackable into bachelor's or master's degrees;
- Micro-credentials are subject to the *institutional quality assurance* procedures of a higher education institution.

## Recommendations

- To ensure professional recognition, micro-credential programmes can be designed together with professional organizations and employers (e.g. for needs assessment, case studies, projects, workplace learning, internships, demonstrations, etc.). In some cases, a labour market organization also provides some of the content for which also a separate professional certificate can be issued;
- A modular structure for micro-credential and degree programmes helps students to structure learning and stimulates study progress;
- Micro-credential qualifications should be further integrated into a qualification structure for lifelong learning as part of the European Higher Education Area;

- Digital education is recommended to make the micro-credential programme accessible and flexible for learners on the job. It makes continuing education and professional development scalable.

# The design of a joint micro-credential programme: overview







## Guidelines

Designing and developing a micro-credential programme is a complex activity consisting of several steps

- *align with European and national developments*: connect with EU policies related to the European Commission’s Proposal for a Recommendation to the Ministers of Education on micro-credentials (European Commission, 2021); connect with national micro-credential frameworks under development; and take advantage of European initiatives under various projects;
- *define the macro-objectives of the programme and link them to broader institutional strategies*, such as reconciling continuing education and professional development with learners’ living and working conditions, cooperating with public and private sectors and professional organization, developing synergies with other universities for higher quality and making continuing education internationally attractive;



- *build the partnership* with universities based on trust and previous collaborations or common interests in research and innovation. If necessary, involve other stakeholders (professional organisations, employers) for co-design, co-development or co-delivery;
- *compose the joint programme team* led by a programme team leader, share leadership with key staff of the respective institutions and involve teaching staff in the design and development of the programme;
- *ensure cross-institutional professional support* through the teaching and learning, internationalisation, ICT for education, legal services and the student administrations;
- *share a joint educational vision* about the micro-credential programme, based on a needs analysis and learner characteristics. Develop an academic and professional profile and a unique selling point;
- *design the joint micro-credential programme* according to current pedagogical principles so that it can be successfully developed and implemented, defining learning outcomes and competences, designing a coherent programme in content and structure, defining modes of delivery, matching media and tools, designing space for flexibility; improving the student's learning experience; determining the study load; making the programme inclusive; and designing mobility modes for students and staff;
- *justify and agree on the joint qualification to be granted*, aligned with institutional qualification structures for continuing education and professional development, accompanied by a joint certificate and possibly a professional qualification;
- *create an educational and technological ecosystem* for the delivery of courses by selecting a digital learning environment, sharing and aligning media and resources, and mutual access to libraries, research and innovation;
- *install a language policy* to make the programme accessible within the partnership and in different geographical areas, possibly translated;
- *establish an admission framework* for the joint micro-credential programme until a joint application at the end of the admission procedure, joint admission criteria and a joint credential evaluation with recognition of acquired knowledge and experience;
- *determine joint examination regulations* for the organization of examinations, a joint grading system and the issuance of a joint qualification and qualification supplement;
- *make agreements on a common scheme for quality assurance*, linked to institutional frameworks for quality assurance and based on ESG and the Guidelines for E-learning. Consider the quality assurance system of European university alliance. Use evidence-based quality assurance tools. If necessary, draw up an accreditation plan;

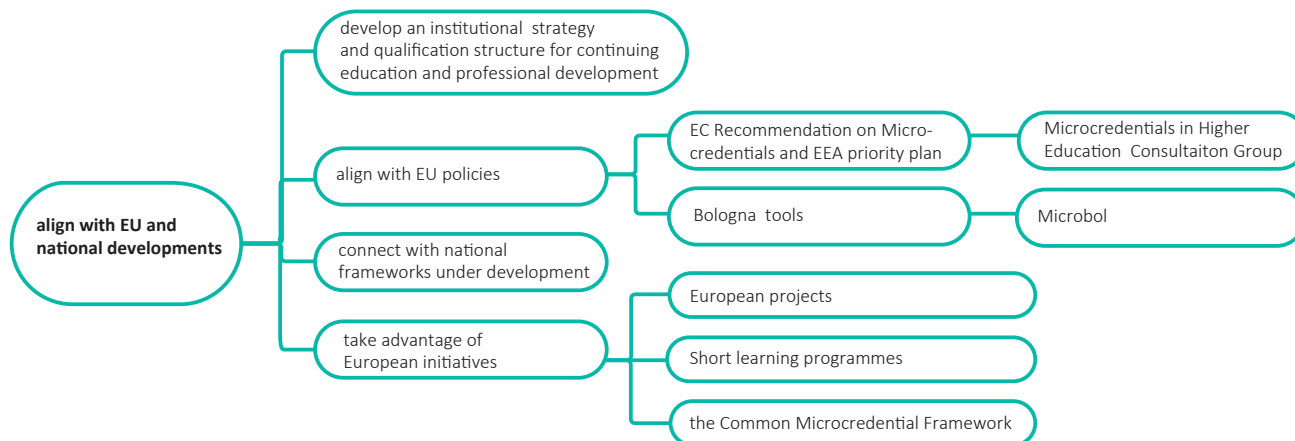
- *develop a joint business plan*, balancing public and private funding and tuition fees within broader institutional frameworks for continuing education. Use micro-credentials as mobility windows in degree education;
- *develop a student recruitment plan*, including multi-segment recruitment campaigns and prospective student flows;
- *conclude a consortium agreement* in which responsibilities and tasks are laid down.
- *develop a sustainability framework* with a commitment from universities for several years to ensure basic sustainability, an annual institutional review and improvement plan and a medium-term financial plan.

## Observations

- Efforts for (online) continuing education and professional development are being strengthened and streamlined in leading universities, for example by creating “extension schools” with micro-credential courses and programmes, and by creating new offerings such as MOOCs and MOOC trajectories;
- Universities in EUI alliances cooperate in many areas for continuing education and professional development, providing a natural environment for joint micro-credential course and programme development;
- The MOOC platforms in the European MOOC Consortium are developing MOOC pathways and have agreed on awarding micro-credentials according to the Common Micro-credential Framework (CMF). These micro-credentials of 4 to 6 ECTS are stackable into broader micro-credential and degree programmes;
- Expertise in the design and development of joint courses and programmes and related mobility is increasing at all levels, for example through the involvement of universities in Erasmus Mundus master’s programmes. This supports the scientific basis for designing and developing joint micro-credential programmes.

# Align with European and national developments

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**The development of micro-credential programmes should be aligned with European and national initiatives:**

- Develop an institutional strategy and qualification structure for continuing education and professional development;
- Align with the European Commission’s Proposal for a Recommendation to the Council of Ministers of Education on micro-credentials and the use the Bologna tools;
- Connect with national frameworks under development;
- Take advantage of European initiatives

***Develop an institutional strategy and qualification structure for continuing education and professional development***

Institutions develop policies and strategies for shaping continuing education and professional development to put their third mission into practice. While promoting micro-credentials, the European Commission leaves room for innovation and experimentation for higher education institutions and government with regard to micro-credential programmes.

Many institutions and governments proactively seize this opportunity. It is important that they create an institutional qualification structure for continuing education, harmonize internal certificates and qualifications, and create a continuing education ecosystem, such as an extension school.

Gradually, they will create space for continuing education and professional development for the European Higher Education Area according to the European Commission’s plans for the implementation of a framework for micro-credentials until 2025.

## ***Align with the European Commission’s Proposal for a Recommendation to the Council of Ministers of Education on Micro-credentials and use the Bologna tools***

### *The Digital Education Action Plan*

Already in 2018, the revised Digital Education Action Plan (2021–2027) sets out measures for high-quality and inclusive digital education and training in Europe at all levels. In this plan, “educational institutions will play an increasingly important role as providers of lifelong learning”. Digital technology should “facilitate the provision of flexible, accessible learning opportunities, including for adult learners and professionals, and help them to re-skill, upskill or change careers””, which can be supported “through micro-credentials which capture the learning outcomes of short-term learning. The plan announced that the Commission would “develop a European approach to micro-credentials” (European Commission, 2018).

### *The Recommendation of the European Commission to the Council of Ministers on micro-credentials*

In 2020, the Commission launched its Communication “Towards a European Education Area by 2025”, in which developing a European approach to micro-credentials in higher education is a top priority. It announced a Recommendation to the Council of Ministers of Education by 2021 and a plan to take all necessary steps for the wider use, portability and recognition of micro-credentials by 2025 (European Commission, 2020).

### *The “Micro-credentials in Higher Education Consultation Group”*

To prepare for this, the European Commission has set up the “Micro-credentials in Higher Education Consultation Group”. This defined a micro-credential as “evidence of the learning outcomes that a student has acquired after a short learning experience. These learning outcomes are tested against transparent standards. The evidence is contained in a certified document stating the name of the holder, the learning outcomes achieved, the assessment method, the awarding body and, if applicable, the qualifications framework level and the credits obtained. Micro-credentials are student-owned, can be shared, are transferable, and can be combined into larger credentials or qualifications. They are supported by quality assurance according to agreed standards” (European Commission, 2021).

### *In terms of volume for a micro-credential, the group left flexibility for innovation and experimentation: from one ECTS to less than a full degree.*

Basically, the European Commission considers a micro-credential as a qualification that demonstrates the learning outcomes acquired through a short, transparently assessed course or module. Micro-credentials can be completed on-site, online or in a mixed format. The flexible nature of these qualifications allows learning opportunities to be opened up to citizens, including those in full-time employment. This makes micro-credentials a highly flexible, inclusive form of learning that enables the targeted acquisition of skills and competence.

The guidelines as presented on this BLOOM eBook focus on micro-credentials as offered in formal higher education and to be integrated into the European Higher Education Area (the Bologna Process).

*Micro-credentials in higher education: using the Bologna tools (Microbol)*

The European Microbol project with members of the Bologna Follow-up Group (BFUG) and European networks developed a definition of micro-credentials in higher education, targeting micro-credential programmes: “A micro-credential is a certified short learning experience, provided by a HEI or other providers, designed to provide the learner with specific knowledge/skills/competences that meet societal, personal, cultural or employability needs. Micro-credentials are subject to a quality assurance assessment in accordance with the ESG (Standards and Guidelines for Quality Assurance in the European Higher Education Area). They have an explicit reference to defined learning outcomes at a specific EQF-EHEA/NQF level (European/National Qualifications Framework in the European Higher Education Area) that will be achieved, the workload, expressed in ECTS, and on the assessment methods and criteria used.

Any micro-credential can be recognized by a HEI as, and through recognition of prior learning procedures (RPL). Micro-credentials are not only useful for professionals, but can also complement the curriculum for undergraduate, graduate, and doctoral students. (Cirland, E. & Loukkola, T., 2020)

*Europass*

Students can list their higher education micro-credentials awards on Europass, in addition to micro-credentials obtained in professional or non-formal settings. In Europass, a “credential is a documented statement containing claims about a person issued by an educational organization following a learning experience”. Micro-credential qualifications owned by the learners will be made portable for communication to universities and employers throughout Europe by the “Europass” platform.

In 2020, with the new “Europass” platform, learners are enabled to create their own profile, register and display their digital credentials to be more attractive on the market (European Commission, 2020). In the framework of Europass, the European Commission is developing the Europass Digital Credentials Infrastructure (EDCI) to support efficiency and security in how credentials such as qualifications and other learning achievements can be recognised across Europe. Work is ongoing on the development of the Europass Digital Credentials Infrastructure (EDCI). The EDCI will support authentication services for any digital documents or representations of information on skills and qualifications .

**Connect with national frameworks under development**

Governments and universities in European countries are already developing policies and frameworks for continuing education and professional development including qualifications for micro-credential programmes (eg in France, Austria, Ireland, Belgium–Flemish

Community, the Netherlands), preparing steps to be taken for the implementation of the European Commission's Recommendation to the Council of Ministers of Education on micro-credentials.

Universities are in continuous dialogue with ministries on micro-credential frameworks and are proactively developing and implementing micro-credential programmes.

### ***Take advantage of European initiatives***

The European MOOC Consortium, consisting of the main European MOOC platforms (Futurelearn (UK), France Université Numérique, Miriadax (SP), EduOpen (IT), iMooX (AU), AI Campus GE), NAU (PO), OpenupEd (EADTU) has developed standards for the *Common Micro-credential Framework (CMF)* for MOOC-based programmes (see the section on qualifications). CMF micro-credentials consist of a coherent set of MOOCs, have a size of 4 to 6 ECTS, link to a 5, 6, 7 or 8 level EQF level, and are awarded with a CMF qualification (a “gradeo” in France, Spain and Italy) after a reliable and valid assessment. A qualification supplement will be given. Quality assurance is done by the university's internal QA system in interaction with the platform. CMF qualifications are endorsed by the partner universities in Europe, Latin America and Australia. The programmes have both an academic and professional orientation (European MOOC Consortium, 2018).

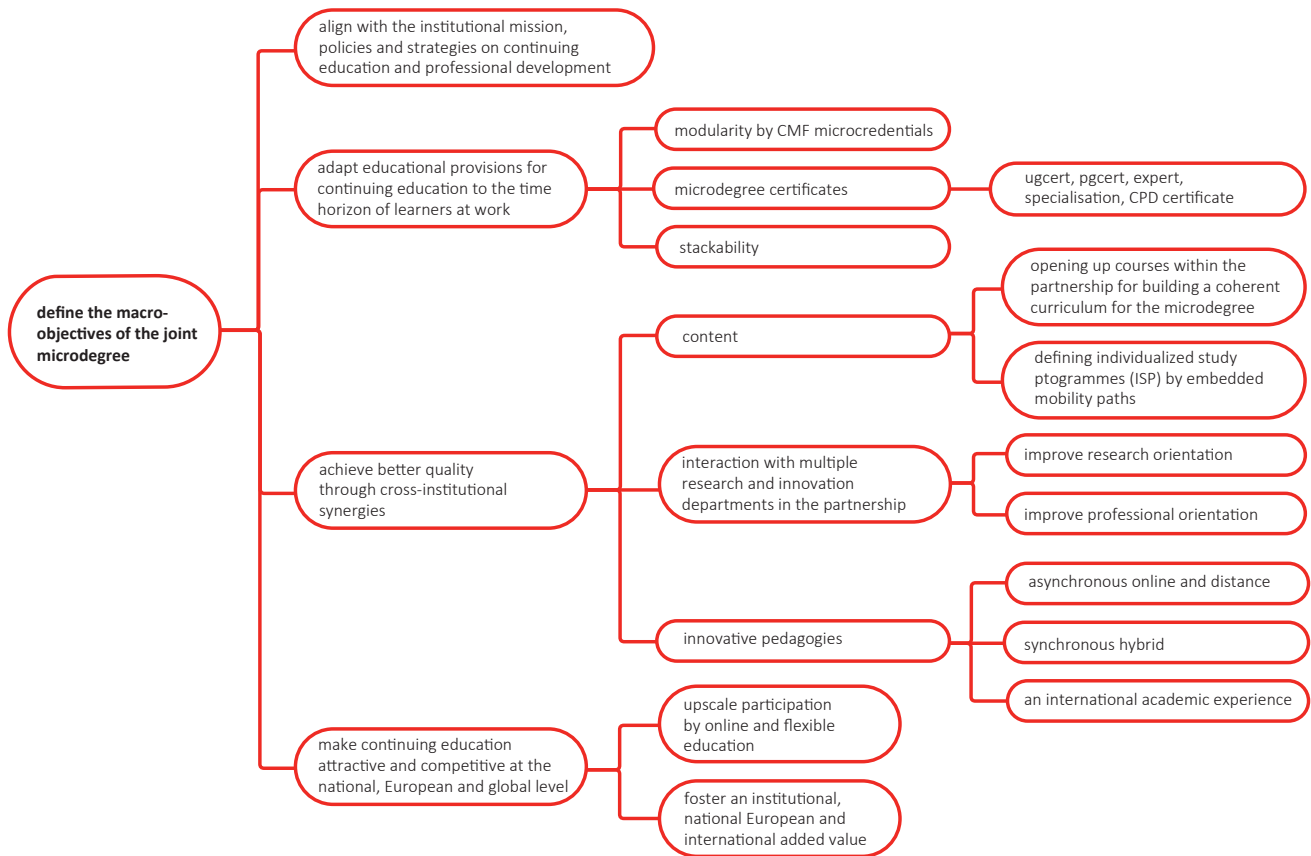
In 2017, EADTU members started developing *short learning programmes (SLPs)* supported by the European Commission (EADTU, 2021). They were a first step for the organization of online continuing education and professional development facilities that responded to time horizon of learners at work and the needs of the economy and society. In this concept, short learning programmes consist of a coherent set of courses in a field with a total size of 5 to 30 ECTS. Short learning programmes can be divided into CMF credentials that award intermediate qualifications. The Bologna instruments or used in a similar way. The name of the final qualification differs per institution.



# Define the macro-objectives of the joint micro-credential programme

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The macro-objectives of a joint micro-credential programme should fit the mission of the university and frameworks for continuing education and professional development, which may include different aspects:

- Align with the institutional mission, policies and strategies on continuing education and professional development;
- Adapt educational provisions for continuing education and professional development to the time horizon of learners at work;
- Achieve better quality through cross-institutional synergies;
- Make continuing education attractive and competitive at the national, European and global level

### ***Align with the institutional mission, policies and strategies for continuing education and professional development***

European higher education is evolving into three areas of education: mainstream education, continuing education and open education (OER, MOOCs). In the perspective of the transformation agenda for higher education, universities are becoming more interwoven with the knowledge-intensive sectors of society, responding to the needs of the economy and society as a whole.

Some leading universities have already developed comprehensive policies for continuing education and professional development in line with their mission. They have built a framework for continuing education and professional development, for example an extension school. They have developed an institutional qualification structure for awarding certificates for micro-credential programme qualifications. These programmes are closely linked to research and innovation and mainstream education in their institution.

Nevertheless, it remains a challenge for all universities to create facilities for adult learners.

Because of their mission, open and distance learning universities organize degree programmes for mainly adult learners. They have become aware of the need for micro-credential and short learning programmes and have started to organize this provision on a larger scale.

### ***Adapt educational facilities for continuing education and professional development to the time horizon of learners at work***

Universities are aware that continuing education and professional development must adapt to the time horizon of learners through new forms of education such as micro-credential and micro-degree programmes. These new provisions should be recognized as stackable modules for broader degree programmes.

This approach creates new opportunities for continuing education and professional development. It is now supported by the European Commission, which has proposed a Recommendation to the Council of Ministers to establish a framework for micro-credentials.

Thus, it becomes the new priority for national governments and higher education institutions. Frontrunner universities will help determine this development.

### ***Achieve better quality through cross-institutional synergies***

By organizing micro-credential programmes, universities achieve better quality through institutional synergies. They make their best content available within the partnership to respond to real-world needs in society. These programmes are also personalized by organizing individualized study plans and embedded mobility paths.

This collaboration builds on and promotes close interaction with research and innovation departments in the partnership. Through these synergies, they enhance both the research and professional orientation of micro-credential programmes.

The programmes are also an asset for pedagogical innovation that enables institutions to reach learners across Europe, create an international experience for them and apply


new ways of delivery. using methods of blended, synchronous hybrid and online distance learning.

***Make continuing education attractive and competitive at national, European and global level***

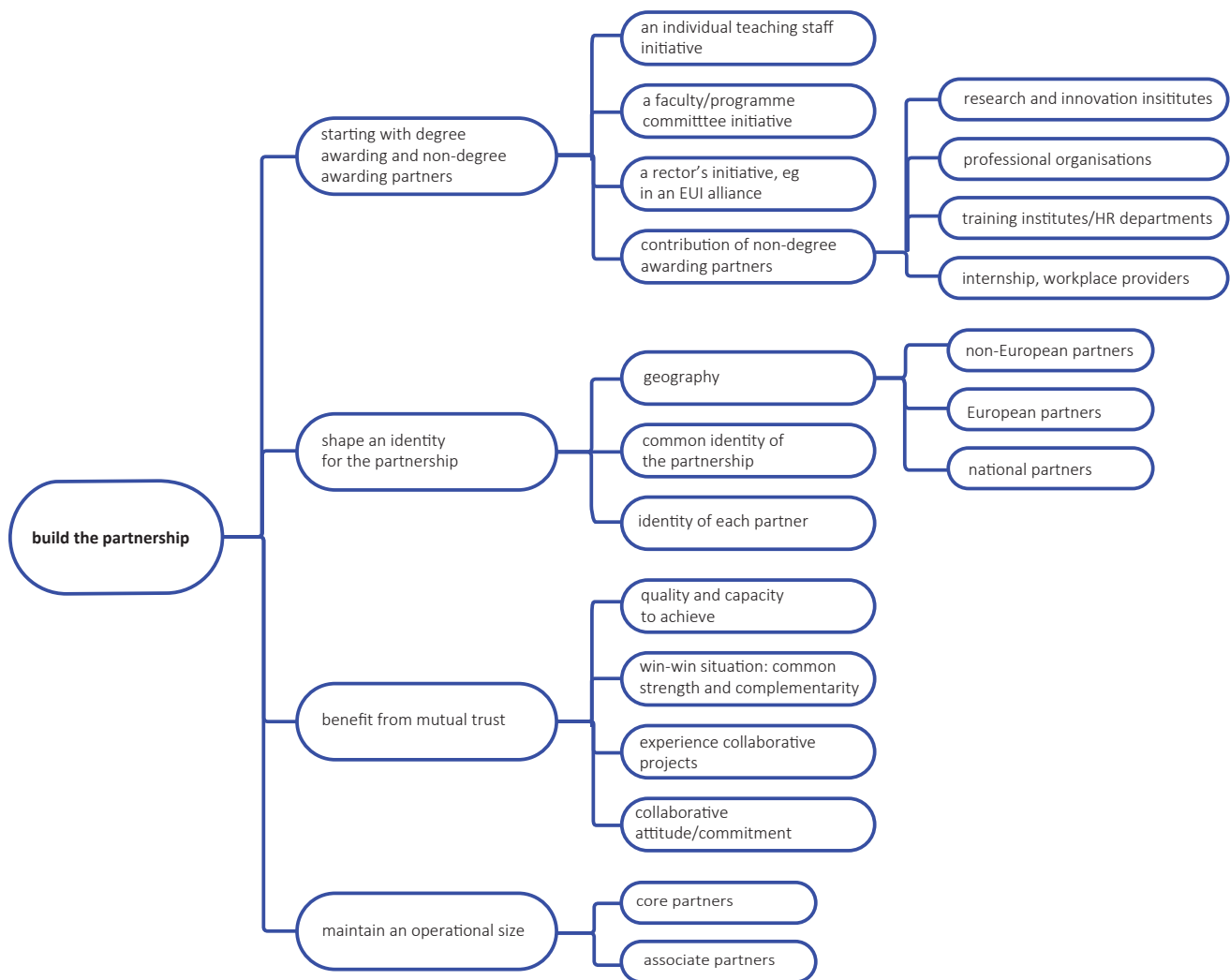
Leading universities can offer micro-credential programmes to make continuing education more attractive and competitive at national, European and global levels. Digital delivery methods enable them to scale up participation in their programmes and improve quality in content and pedagogy.

In this way they provide institutional, national, European and international added value.

# Build the partnership



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The creation of the partnership for the micro-credential programme is based on several criteria:

- Start with degree awarding and non-degree awarding partners;
- Shape an identity for the partnership;
- Benefit from mutual trust;
- Maintain an operational size.

## Guidelines

### *Start with degree awarding and non-degree awarding partners*

- The initiative for a joint micro-credential programme can be taken by an individual staff member, by a program committee at the faculty level, or by a rector or vice-rector at the institutional level, all possibly in the framework of a European University alliance (EUI) or another network;

- Non-degree awarding partners can contribute to the micro-credential programme to strengthen its research, innovation and professional foundation, eg research and innovation institutes, professional associations, sectoral training institutes and human resources departments of enterprises, and workplace providers offering internships.

### ***Shape an identity for the partnership***

- The identity of a partnership is to a large extent geographically determined by its national, European or international basis. Together, partners find a common identity in a conjoint research and innovation orientation or cooperation. Through this common identity, partners want also to keep their own profile.

### ***Benefit from mutual trust***

- Mutual trust is a basic condition for realizing a successful joint micro-credential programme. This is based on the educational, technological and organizational capacity of each partner institution to achieve its role. The programme should also create benefits for each single partner by the cooperation, creating win-wins by complementarity and multiplying effects.
- Partners show a long-term commitment to the micro-credential programme (at least 5 years) and a collaborative attitude.

### ***Maintain an operational size***

- Since the-set up of a micro-credential programme is a complex activity, the typical number of partners will vary from two to six partners. A higher number will be complicated as possibly more perspectives are to be reconciled and more institutional and national regulations have to be taken into account;
- In case more partners participate, core partners can take the lead while associate partners play a specific role, eg additional labs, specific seminars, mobility schemes, guest lectures, etc.
- Associate partners can include non-degree awarding institutions such as musea, national scientific institutions, professional organisations, business sectors or enterprises.

## **Observations**

- Individual staff members start with the development of micro-credential programmes because of different motivations related to personal research and innovation in a particular scientific and professional domain. They can also be invited by colleagues of other universities or networks because of their reputation. In an early stage, they need a dialogue and an agreement with the faculty or the institution in order to comply with institutional rules for programming continuing education. From the beginning they should find

consultation and support from different services in the university, notably teaching and learning, IT, international offices and legal services;

- Micro-credential programme initiatives at the level of a faculty or a programme committee have the advantage of collective decisions and direct support by faculty services. In many cases, they are a study track or a further specialisation of an existing bachelor or master programme. Faculty level initiatives are easier to integrate in institutional regulations;
- Micro-credential programmes initiatives at the institutional level benefit from the start a top-down support. The issue in some cases is to find a motivated leader at the faculty or individual staff level to design and develop the micro-credential programme. Institutional initiatives are taken to implement institutional strategies for continuing education and professional development or cooperation agreements within the university alliance or network. The institutions fulfill the necessary conditions for developing the micro-credential programme.

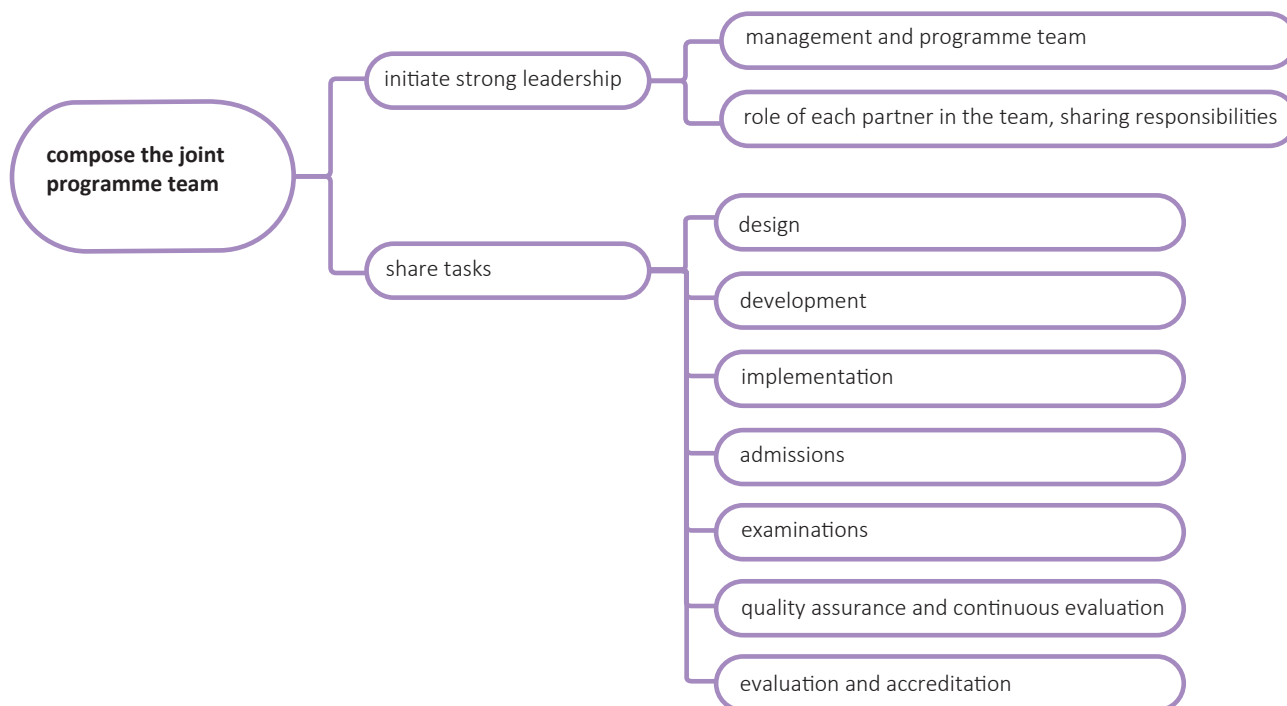
## Recommendations

- A micro-credential programme partnership should have a strong basis, eg consisting of previous research ties or at least common research interests, expertise in innovation, mobility schemes or other internationalization projects. Universities should have similar institutional characteristics or policies for continuing education and professional development;
- Team leader and partners should start from a time horizon of at least five years, surrounding themselves locally with colleagues and services assuring sustainability;
- Collaborate with associate partners from the start as they are relevant for the co-creation of the programme and engage them for further curricular an extra-curricular collaboration.

# Compose the micro-credential programme team: structure and tasks

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### The partners have to agree on the composition of the joint programme team:

- Initiate a strong leadership;
- Share tasks.

## Guidelines

### *Initiate a strong leadership*

- The success of joint micro-credential programme is largely dependent on the programme leadership and the programme team. The programme leader is a university staff member who assumes overall academic and managerial responsibility for the micro-credential programme;
- This responsibility is shared with the other programme team members who each represent and engage his or her partner university;
- In all matters the leadership is collegial/consensual in nature.

### *Share tasks*

- The programme team is responsible for all phases of setting up a joint micro-credential programme: design, development and implementation. It takes into account institutional and national regulations;
- The programme team acts as an admission committee and determines the admission criteria for the degree programme and the admission procedures;

- The programme team acts as an examination committee and determines the examination rules, including the grading system and the conditions for awarding credits and the final qualification of the study programme;
- The university of the programme team leader is responsible for the (internal) quality assurance of the programme, while each partner university provides all data necessary to fulfill this task. Together they develop a procedure for the continuous evaluation of the programme;
- This continuous evaluation forms the basis for a formal (national, professional) accreditation upon request.

## Recommendations

- The team leader involves his university and seeks affiliation with the chosen partners. As a pen holder, he must lead the design, development and implementation processes. He invites partners to bring in their best input at different stages. The team leader ensures that he has the educational, technological and organizational support from his faculty and university to lead these processes. Partners do the same on their part;
- The course team should distinguish the respective phases when setting up a micro-credential programme. Each stage requires a certain amount of time. Depending on the institutional support of the team leader and the partners, the design phase takes at least three months, followed by a development phase of at least six months after which the programme can be implemented.

# Ensure (cross-) institutional support

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The team leader and the team partners need institutional and faculty support, which is given by professional expert services in the partnership:

- Consult the educational programme administration;
- Find teaching and learning support;
- Seek support for Internationalization;
- Look for IT support;
- Get support from legal services;
- Request cooperation from the student administration

## Guidelines

### ***Consult the educational programme administration***

New programme initiatives usually have to go through a faculty or university approval process. A dialogue should be started as soon as possible with the educational administrations at central or faculty level, whereby the programme leader and the team are informed about all preconditions and steps to be taken from the start of the programme up to its publication in the respective program guide and its implementation.

### ***Get teaching and learning support***

The teaching and learning support services are essential for designing educational formats for a micro-credential programme. They have expertise in course and curriculum development as well as collaborative approaches to this development. Advice from this service will reduce the time and therefore the cost required to design the programme as they are familiar with all aspects of the design to be covered.

### ***Find support from internationalisation services***

*Internationalization services* also have this expertise. On top of this, they are used to international collaboration and to develop staff and student mobility formats in accordance with the curriculum. They are also familiar with all kinds of agreements which are needed for a joint micro-credential programme.

### ***Look for support from IT services***

IT services will advise the team on technology facilities to deliver all digital components of the curriculum, including synchronous and asynchronous online delivery and group collaboration. An important point concerns the common platform or learning environment to be used for the delivery of the programme. For pragmatic reasons, the platform of the leading institution is usually used. A new common platform for the delivery of a common course offering is being considered in newly established EUI alliances, but this has not yet proven to be an easy solution (see also section on the educational and technology ecosystem)

### ***Get support from legal services***

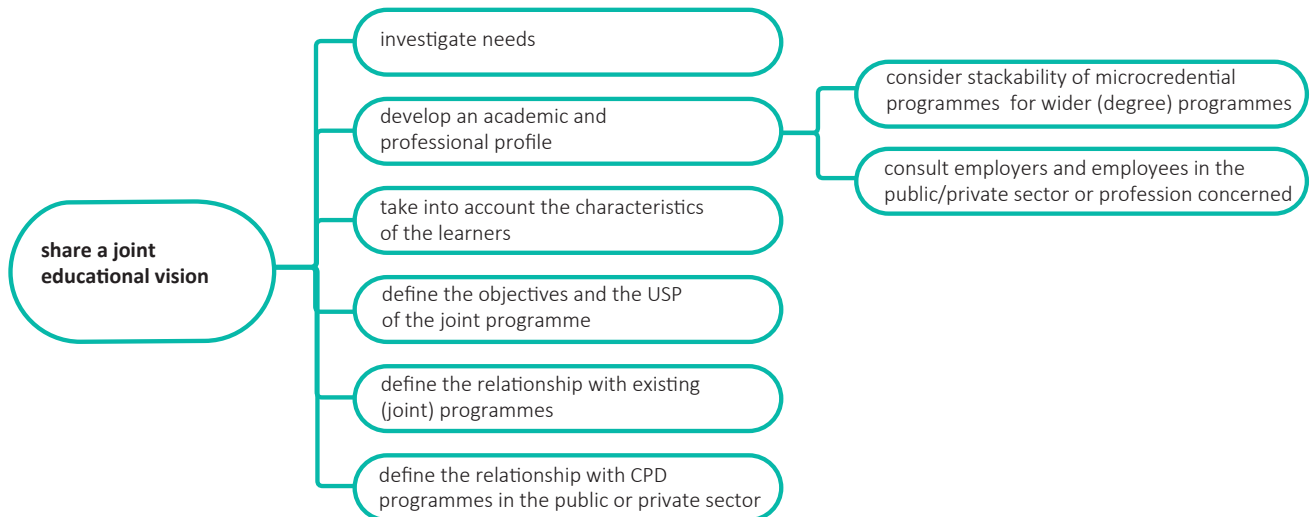
Legal services have the task of solving all (legal) regulatory issues in consultation with the partner institutions and of converting restrictions into opportunities. This will sometimes lead to adjustments of institutional rules. This can also lead to advice or requests to the central government to change regulations. Bottom-up processes drive government policy in the right direction. Top-down regulation is only relevant if it promotes change processes at institutional level, enabling micro-credential programme teams and teaching staff to develop innovative programmes.

## **Recommendations**

- In order to improve the quality of the programme and reduce the design and development time and the resulting costs, support services should be contacted from the beginning of the programme design, starting with the international and teaching and learning services;
- In general, the team leader will first engage the support services of his university and then try to align and involve the partners in common approaches for which they should seek advice in their institutions;
- Representatives of the expert support services from all partner universities may establish a joint task force or expert group to support the teaching staff in the design, development and implementation of the programme. They can build on mutual expertise and are the point of contact for solving problems.

# Share a joint vision on the micro-credential programme to be developed

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As a first step, partners have to develop a joint educational vision for the programme, consisting of:

- Investigate needs;
- Develop an academic and professional profile;
- Take into account the characteristics of the learners envisaged;
- Define the objectives and the unique selling point of the programme;
- Define the relationship with existing courses and programmes.

## Guidelines

### *Investigate needs*

A needs assessment in the targeted academic and professional field is done on the basis of existing documents or after consultation of stakeholders. Already at this stage, it is useful to rely on associated partners such as professional organisations, sectors and companies or public services.

### *Develop an academic and professional profile*

The academic and professional profile of the micro-credential programme is determined based on identified needs, its potential link to degree education and its relevance to employers and workers in the field. The stackability with academic programmes is examined, as well as the place of the programme in relation to the labor market.

### ***Take into account the characteristics of the learners***

The partnership defines the main target groups for the micro-credential programme and the expected learning characteristics. They include the prior knowledge needed and the willingness to improve competences for employment and innovation in certain business sectors or in public services.

### ***Define the programme's objectives and unique selling point***

The general objectives of the programme are defined at national and European level in economic, social and cultural terms.

The objectives of the micro-credential programme are then defined from an academic point of view and its possible contribution to the innovation and competitiveness of the higher education institutions involved.

A “unique selling point” is being sought for a sufficient target group in the partnership and beyond.

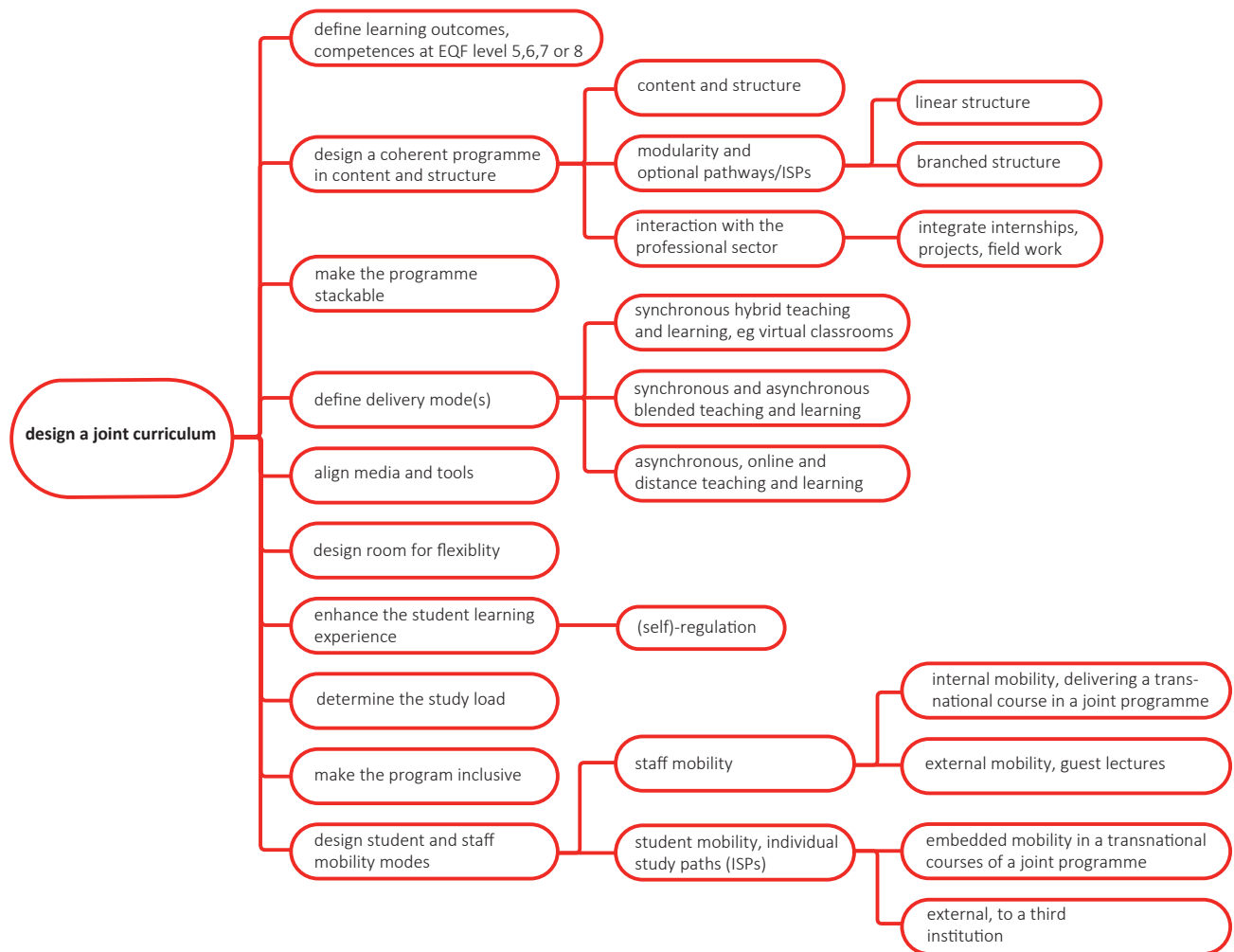
### ***Define the relationship with existing courses and programmes.***

The relationship with other continuing education and professional development offerings in the partnership is clarified. Potential course-level collaborations are being explored. The added value of the micro-credential programme compared to existing programmes in the same field at national and European level is explained. It also indicates the extent to which this added value contributes to university excellence.



# Design the joint micro-credential curriculum

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**For the design of the curriculum of a joint micro-credential programme, successive joint decisions have to be made as the programme is co-owned and co-delivered by all partners in a distributed environment:**

- Define the learning objectives of the curriculum;
- Design a coherent program in content and structure;
- Make the programme stackable;
- Define delivery modes;
- Align media and tools;
- Design room for flexibility;
- Enhance the student learning experience;
- Determine the study load;
- Make the programme inclusive;
- Design student and staff mobility modes.

## Guidelines

### *Preliminary remarks*

In the further design process of a micro-credential programme as described here, the focus is on curriculum design based on pre-existing courses, modules or learning building blocks in the partnership. Relevant courses from programmes in the partnership are integrated into the new micro-credential programme according to the agreed curriculum objectives. This is the most common approach for developing joint programmes (eg Erasmus Mundus), leveraging existing courses and thereby realizing significant cost benefits. Of course, jointly designed learning activities, courses, modules, learning building blocks can also be integrated in a micro-credential programme. In most cases this only happens for a limited part of the curriculum.

The other option is that the joint curriculum is composed of entirely new courses, modules or learning blocks that have to be designed and developed from scratch by the partners. This of courses takes a lot more staff time because the design and development of the courses have to be taken into account. The amount of staff time depends on the type and complexity of the intended learning activities. Starting with the design of completely new courses will easily double or triple the development time of the programme.

In the programme design guidelines below, we integrate the maturity dimensions for programme design, developed in the European Maturity Model for Blended Education (EMBED, 2021), and extend these dimensions to digital education in general. They are based on up-to-date learning design research and validated by a Delphi study (van Valkenburg et al., 2020; Goeman et al., 2019; Goeman et al., 2021; EADTU, 2021). For each dimension, guidelines are developed (Dijkstra & Goeman, 2021; Maina et al., 2020; Ubachs & Hendrikx, 2012, O'Neill, 2015).

Taking these dimensions into account, the programme team seeks a constructive alignment with the objectives of the curriculum and takes into account the characteristics of the target learners.

### ***Define the objectives of the curriculum***

- Define learning outcomes (Anderson et al., 2001; CEPS, 2018) and justify their relevance of the learning outcomes with a view to the students' future academic opportunities (including the stackability to a bachelor's or master's degree) and to employability.

If desired, translate the outcomes into competence categories, addressed by the European Skills and Competences taxonomy ESCO (European Commission, 2022)

- Define the European or National Qualifications Framework level to be pursued for the micro-credential programme (EHEA, 2018). This is important for the recognition of

the level of qualification awarded to learners upon completion of the micro-credential programme. The programme must therefore be sufficiently homogeneous in terms of qualification level. A higher education micro-credential programme can be designed on a 5, 6, 7 or 8 level.

***In the further design process we follow the EMBED maturity dimensions for programme design, European Maturity Model for Blended Education mentioned above, broadening the application of these dimensions to digital education in general.***

The programme team seeks a constructive alignment with the objectives of the curriculum and takes into account the characteristics of the learners (EDLAB, 2020).

***Design a coherent programme in content and structure:***

- Define the main educational topics of the programme in relation to the objectives of the programme and the needs of the field. Seek additional expertise from key academic staff in the partnership to achieve the micro-credential programme's objectives and engage them in delivering the needed topics. Build the curriculum from existing courses in the partner institutions. Courses can also be redesigned, although this will require considerably more preparation time. However, many collaborative programmes provide a small number of new components in various formats, such as lecture series, webinars, collaborative learning communities, independent studies, which require the commitment of teaching staff.
- Order and structure the courses in a coherent curriculum consisting of separate modules or micro-credentials of 4-6 ECTS (CMF), which can easily be combined with a job over a period of 10-15 weeks with a study load of about 8 hours per week. In the context of continuing education and professional development, these short modules will encourage students to continue their studies and lead to study success, thus preventing dropout.
- To make the programme coherent, both vertical (course-programme) and horizontal alignment (between courses) should be considered, based on a shared vision of the content of the programme.
- The modules within a micro-credential programme can be offered linearly (one module after another) or in a branched structure (common core and differentiated options) where learners can choose individual study paths (ISPs). Describe and demonstrate the academic and professional relevance of such differentiated options or learning paths.
- If applicable, explain how the internship or field work activities fit into the joint micro-credential programme and its objectives. Explain the interaction of the micro-credential programme with the relevant professional, socio-economic, scientific, cultural sectors. What kind of involvement, if any, do these sectors have in curriculum implementation (needs analysis, content development and/or co-creation, course evaluation, internships,

financial sponsorships, research providers, employment prospects, etc.)? What is their level of involvement in the programme?

### ***Make the curriculum stackable***

When determining the content and structure of a micro-credential programme, the stackability for broader educational programme must be taken into account (European MOOC Consortium, 2018; Nuffic, 2022):

- Seek coordination with programme boards in the partnership about the extent to which the micro-credential programme learning path can be stacked in a bachelor's or master's programme. This can lead to exemptions when the student enrolls in such a degree programme.
- In some countries (e.g. the UK), master's programmes at several universities are divided into micro-degree or micro-credential modules, which award first qualifications. This is especially applied when the programme attracts adult part-time students online.

### ***Define delivery mode(s)***

Determine which form of delivery will be used for the micro-credential programme and for each subject to make coherent arrangements about digital education.

Micro-credential programmes need a great deal of flexibility. More flexibility is needed for working and international learners to respond to individual time schedules and possible different time zones. Digital teaching and learning provisions are suitable for such groups, because the internet is accessible to everyone, everywhere and at any time.

In addition, scalability is needed, since major needs in the economy and in society must be met for many people and in several places. Digital teaching and learning is more scalable and therefore an important asset for continuing education and professional development.

Three key approaches to digital higher education in this regard are (Pieters et al., 2021):

- *Synchronous hybrid teaching and learning*: based on settings that have in common that both on-site or 'here' students and remote or 'there' students are included simultaneously (Raes et al., 2020; Raes et al., 2020);
- *Blended teaching and learning* with a deliberate mix of synchronous and asynchronous methods: based on a course design with a conscious combination of online and offline learning activities (Biggs, 2002; Garrison & Kanuka, 2004; Laurillard, 2012, 2015; Goeman et al. 2019; van Valkenburg et al., 2020);
- *Asynchronous online and distance teaching and learning*: based on a course design with a continuous physical separation between teacher and student (Maina et al., 2020; Martin, Sun & Westine, 2020).

These approaches can be combined and one of these approaches can be dominant while another can be complementary. This is to be considered by the micro-credential programme team and the course design teams (EADTU, 2022).

### ***Align media and tools***

The alignment and coherence of the learning tools (learning environment, software, media, ...) used in the micro-credential programme should be based on learning activities in courses. Their use should be coordinated by the teaching and support staff of the programme and informed by evidence or experience (Delft University of Technology, 2020).

Tools are used for many functions in education, such as assessments and assignments, collaboration, communication, conference calls, virtual classrooms, polls and surveys, and feedback on learning performance.

In an inter-institutional setting, many tools are likely to be available in the respective learning environments and can be shared. However, they should be aligned and used in a coherent way across a programme, based on learning activities in the courses.

The rubric for e-learning tool evaluation of Western University (US) supports a multidimensional evaluation of functional, technical and pedagogical aspects of eLearning tools (Anstey & Watson, 2018).

### ***Design room for flexibility***

Micro-credential programmes, which are designed according to learning design principles, in many respects are already flexible, mainly through the modularization of the curriculum and through the use of digital delivery modes. However, working and international learners need a maximum amount of flexibility:

Consider whether learners can be given the opportunity to modify certain features of the programmes such as the selection of alternative courses/mobility pathways, alternative delivery modes (blended courses, online distance courses, traditional courses), workload (full-time/part-time), pace (institutional/self-paced) or possibly the opportunity to take courses at other institutions (Gordon, 2014; Universities UK, 2018; Zone Flexible Education, 2019).

The flexibility in a programme should be deliberately designed. Students have many opportunities to customize certain features of the programme and get advice about their options. Offering flexibility is based on evidence or experience.

### ***Enhance the student learning experience***

Academic success in a blended learning environment requires motivation, self-regulatory skills, goal orientation and time management. Learners do not always have these skills sufficiently and do not make appropriate decisions. They may even have negative previous learning experiences, low motivation and therefore do not get involved in learning. They need the knowledge and skills to complete the course or programme in a satisfying way (Goeman, 2019). Interaction with teaching staff and peer learners is important to challenge engagement and structure study behavior that leads to study progress and success and prevents dropout.

Therefore, a programme must actively support and mentor students to develop and improve their self-regulated learning skills (SRL). This means that SRL-related activities are included in every course and that SRL skills are regularly checked.

Methods and tools to measure self-regulated learning are described and based on both qualitative (eg surveys, observations, interviews) and quantitative data (eg from learning platforms, student information systems or other applications) (Winne & Perry, 2012; Gonzales-Torres & Torrano, 2008).

### ***Determine the study load***

- Define the curriculum study load you envision in terms of ECTS credits, bearing in mind that the micro-credential programme is intended for working learners with a limited time horizon and who are willing to learn skills/competences and to develop a career. The study load for a CMF micro-credential is 4-6 ECTS (a volume of 100-150 hrs in 12-15 weeks). A study load of 30 ECTS (a volume of 750 to 800 hrs) seems to be reasonable for a micro-degree of one year for working students.
- The study load of each course and peaks of parallel courses in a programme must be deliberately coordinated.
- The study load in a programme must be monitored, evaluated and adjusted.

### ***Make the programme inclusive***

Consider the diverse needs and backgrounds of students to create a programme where all students feel valued, safe, included, and where all students have equal access to the programme. Integrate inclusiveness into all courses of the program.

An important aspect of inclusiveness is digital accessibility. This has to do with using accessible tools, instruments, communication software; accessible documents; and learning and teaching materials accessible in an equal way for regular learners and disabled or impaired learners (Claeys-Kulik, Jørgensen & Stöber, 2019).



The Universal Design Principles (Cast, 2018) offer a range of possibilities to design and develop an inclusive programme. The guidelines provide a set of concrete suggestions that can be applied to any discipline or domain to ensure that all students have access to and participate in meaningful, challenging learning opportunities.

Achieving inclusiveness must be based on evidence or experience.

### ***Design staff and student mobility modes***

In the design phase of the micro-credential programme, when sequencing and structuring the courses in the curriculum, the added value and relevance of the (virtual) mobility component must also be justified. How can staff and student mobility be made relevant and instrumental to the objectives of the curriculum? How are the mobility paths designed and embedded in the programme?

- Staff mobility is needed at all stages of setting up a joint curriculum:
  - *internal or embedded staff mobility within the partnership*: staff from the partner institutions co-design the joint curriculum; develop the planned courses and technological resources; install the administrative framework; the joint implementation of the programme, including the admission, examination and certification of students;
  - *external staff mobility from outside the partnership*: external staff and experts can be invited, for example for guest lectures, webinars, projects or demonstrating good practices.
- Student mobility is structurally provided for in a joint curriculum:
  - *internal or embedded student mobility within the micro-credential programme* as students participate in the distributed curriculum at successive partner universities. In linear curricula, all learners follow the same mobility path. In branched curricula, they follow the core curriculum and then one of the optional curricula, possibly requiring another university in the consortium to be selected. Individual study and mobility paths (ISPs) are planned in the learning agreement when learners begin the micro-credential programme;
  - *external student mobility* as learners can still take courses in a third institution as part of a learning agreement between the learner, the partnership and the host university.

Because courses can be delivered in different ways, mobility can accordingly be synchronous hybrid (e.g. virtual classrooms, webinars), blended (face-to-face and online combined) or virtual/online (Henderikx & Ubachs, 2012, 2019; De Moor, Henderikx, & Keustermans, 2013; EADTU, 2020).

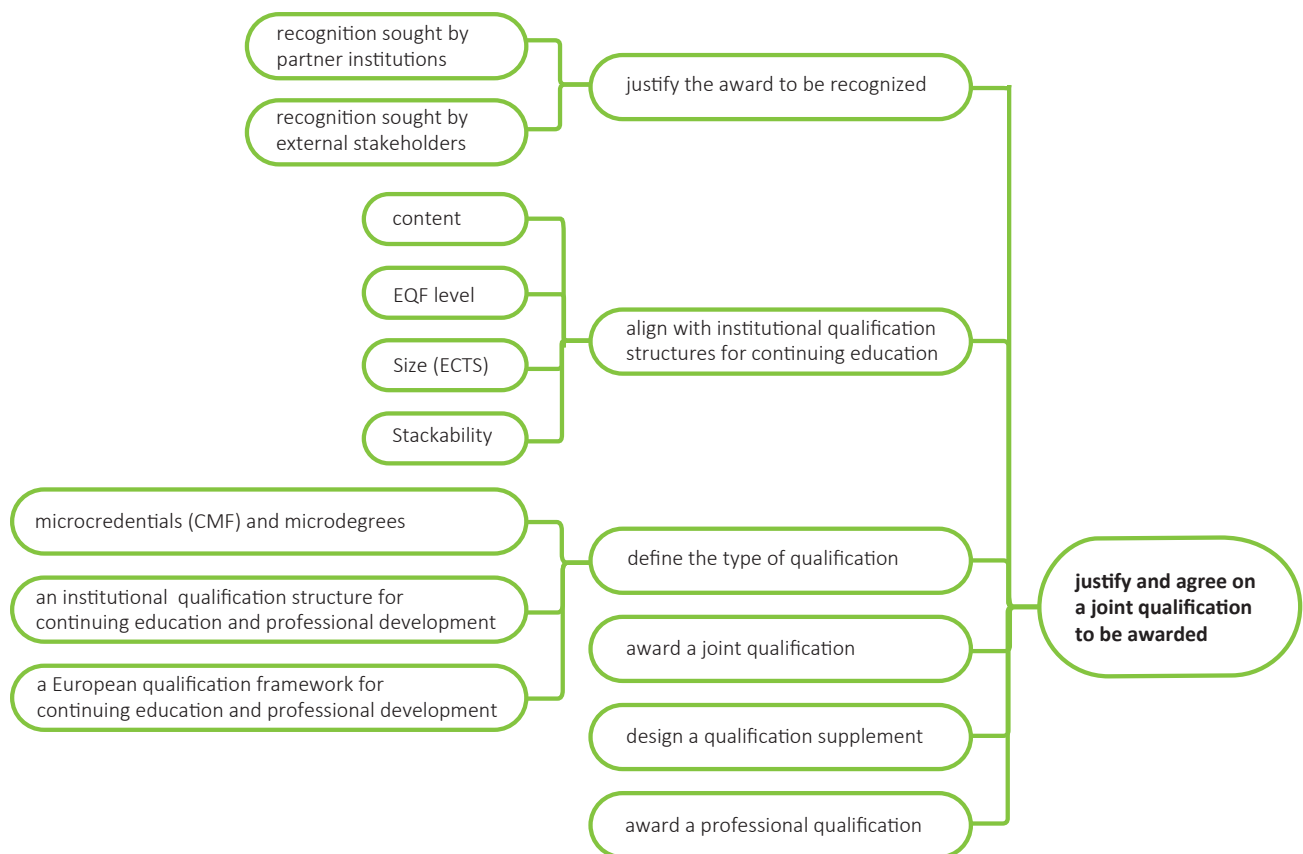


Tools from the *ECTS Users' Guide* (European Commission, 2017) are used when designing mobility in the joint curriculum:

- all parts of the joint programme are recognized by awarding *ECTS credits* (learning outcomes, workload);
- a *learning agreement* between the learner and the partnership on his/her individual learning path (ISP) is signed before the start of the micro-credential programme and gives the student confirmation that the credits he/she successfully obtains (core and optional/mobility parts) will be recognized for awarding the micro-credential programme qualification (EADTU, 2020; ECCOE, 2022;)
- the *transfer of records* (credits and grades for the mobility components are stored in the central database of the micro-credential programme).

# Agree on a qualification

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**The partnership has to agree on a qualification for the joint micro-credential programme. Successive decisions have to be made:**

- Justify the award to be recognized;
- Align with institutional qualification frameworks for continuing education;
- Define the type of qualification to be delivered;
- Award a joint qualification;
- Design a qualification supplement;
- Award a professional qualification.

## Guidelines

### *Justify the award to be recognized*

Justify why the joint micro-credential programme should lead to academic recognition by the partner universities and which joint qualification should be awarded. Take into account the content, the EQF level, the volume of the programme and the possible stackability to other programmes.

Also, seek professional recognition from external stakeholders, such as professional organizations and employers, so that learners can valorise their micro-credential programme

qualification for professional development credits or accreditation by professional bodies (e.g. related to professions in psychology, IT, medicine/healthcare, accountancy, education, business sector) (Dunn et al., 2020, Micro-HE, 2020).

### ***Align the award with the institutional qualification structures***

Participating institutions are likely to have very different institutional qualification structures for continuing and professional development, as can be seen from the study guides. These structures are adopted autonomously by institutions and possibly align with national and evolving European frameworks.

In a joint programme, partners should agree on a common qualification for the joint micro-credential programme, as far as possible in line with the formal requirements of each institution. This calls for careful discussion.

Not all universities have developed a consistent qualification structure, and neither have governments. In fact, many institutional qualification structures are under development and in most cases not yet stable. Institutional structures might converge to the following characteristics and cases:

- a course with a size of less than 1 ECTS is delivered as a micro-learning unit, possibly provided with a *badge of attendance*. The course can serve as a unit of learning in a credited course or as a micro-learning unit in a corporate training programme;
- a micro-credential course comes with a reliable and valid assessment. *ECTS points* are awarded;
- a CMF micro-credential programme is delivered as a coherent track of courses with a total volume of 4-6 ECTS, which is awarded with a *CMF micro-credential qualification*. This qualification can be stacked into a broader programme (European MOOC Consortium, 2018; Antonaci et al., 2021)
- A microdegree is delivered as a micro-credential programme of 20-40 ECTS, which is awarded with a *microdegree qualification*;
- A degree is provided in the form of a *bachelor's or master's degree* (180, rep.60/90/120 ECTS). This degree qualification may be awarded following a modular series of micro-credential qualifications, supplemented by a thesis.

In daily practice we see that there is probably a need for an additional standard for micro-credential programmes with a size of 14-16 ECTS.

From learning unit to degree programme	Volume (ECTS)	Level	Award
learning unit/micro-learning	Less than 1 ECTS	undergraduate EQF level 5, 6 postgraduate EQF level 7,8	a badge/proof of attendance (can be part of a course or stackable to a course)
a single course a micro-credential course a single MOOC with credits	Number of ECTS credits awarded to the course	undergraduate EQF level 5, 6 postgraduate EQF level 7,8	ECTS course credits (stackable to a programme)
<b>CMF- micro-credential programme MOOC pathway</b>	<b>4-6 ECTS</b>	undergraduate EQF level 5, 6 postgraduate EQF level 7,8	<b>CMF micro-credential gradeo (stackable in a micro-credential programme or a degree programme)</b>
micro-credential programme Micro-degree programme MOOC-based programme	20-40 ECTS	undergraduate EQF level 5, 6 postgraduate EQF level 7,8	under/postgraduate certificate microdegree specialisation certificate expert certificate certified professional programme focus diploma MicroMaster nanodegree diploma .... (stackable to a degree)
degree programme (bachelor/ master/doctorate)	180 ECTS 60-90-120 ECTS 240 (180) ECTS	undergraduate EQF level 5, 6 postgraduate EQF level 7,8	short cycle graduate bachelor/master degree doctorate degree

Fig. Outline of possible micro-credential awards, based on existing continuing education programmes

### **Define the type and name of the qualification to be awarded**

Partners must define the type and name for the qualification awarded by the joint micro-credential programme.

In the context of the European Education Area and the European Digital Education Plan, the European Commission issued a Proposal for a Recommendation to the Council of Ministers on micro-credentials in 2021, which is expected to be adopted in 2022 and implemented by Member States in 2024, recognizing these qualifications for continuing education and professional development in the European Higher Education Area (the Bologna Process) (European Commission, 2021).

Current micro-credential practices anticipate on this recognition.

In the *Common Micro-credential Framework*, launched by the European MOOC Consortium and the universities concerned, a micro-credential qualification meets the following standard requirements, in response to the study time horizon of students who combine work and study:

- an EQF qualification level 5 to 8;
- a study load of 4 to 6 ECTS or 100 to 150 hours of study;
- a reliable and valid assessment;
- stackability to other programmes.

In France, Spain and Italy, these CMF micro-credentials are called “gradeos”. CMF micro-credentials. CMF micro-credentials are now endorsed by other universities as well.

Current qualifications assigned to *wider micro-credential programmes in Europe* (20–40 ECTS) have diverse names, for example: “undergraduate/postgraduate certificate”, “undergraduate/postgraduate module”, “expert track Certificate” “specialization in ...”, “expert in ...”, “professional certificate”, “focus diploma”.

Some short learning programmes include MOOCs or are fully MOOC-based micro-credential programmes with qualifications such as “MicroMasters” and “Nanodegrees”.

European MOOC platforms and their universities now systematically develop such certified micro-credential courses and programmes, which further can be combined to a bachelor or master degree (EADTU, 2021).

### ***Award a joint qualification***

Joint programmes award joint qualifications, signed by all rectors or deans of the faculties involved in the partnership. The award is issued on a single document according to the rules applied in the leading university. Sometimes a joint certificate is bound by national regulations, especially related to the language of the document. In the case of two universities, a certificate signed by both universities is issued on both sides of the document.

When a common certificate cannot be issued for an important reason, a double or multiple certificate is issued. In the case of a joint study programme with two universities, this means that the student receives two certificates, one from each university. This double or multiple qualification is stated on both supplements.

A double or multiple award can also be delivered if a student takes a significant mobility window or course package at another university, usually in a subject-related network. A micro-credential programme can function perfectly as a mobility window. (see eBook collaborative curricula and mobility).

This is different from a joint programme that is wholly co-owned by a university consortium, for which a joint certificate is usually issued. A network programme is owned by the single universities in a network that only exchange mobility windows.

### ***Design a qualification supplement***

A qualification for a joint programme is accompanied by a qualification supplement, containing information as detailed by the ECTS Users' Guide and Europass. This is important for the valorisation of the certificate in academia and by employers. Descriptors are (EHEA, 2018):

- information on the holder of the qualification;
- information identifying the qualification;
- information on the level and duration of the qualification;
- Information about the programme followed and the results achieved;
- Information about the function of the qualification (e.g. stackability)
- information on the national higher education system.

In addition, it must contain:

- information on the mobility scheme followed in the joint programme;
- Information about the method of delivery.

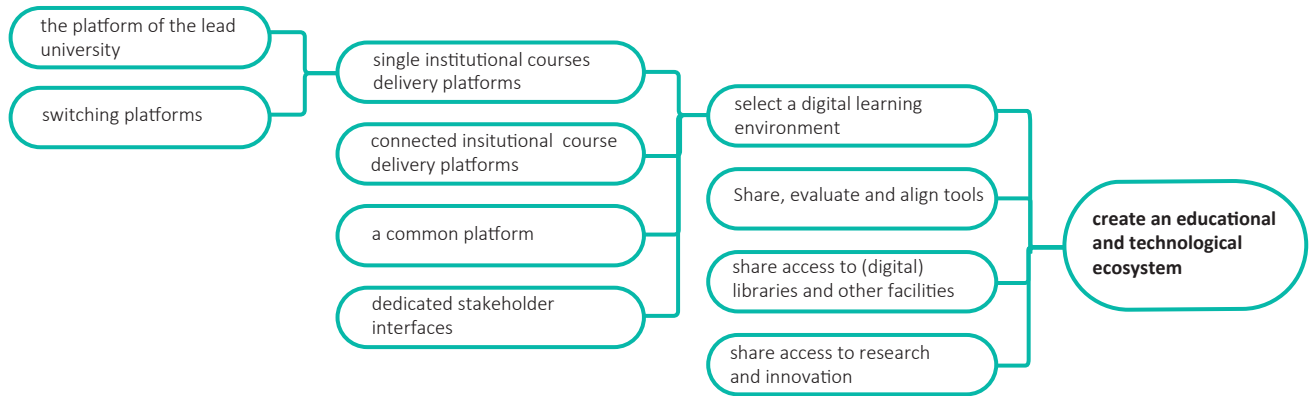
### ***Award a professional qualification***

In some cases, micro-credential programmes are co-created or accredited by a professional organisation, business sector or public service (healthcare, education,...). These organizations will recognize these programs for their own continuing professional development framework. Micro-credential programmes can therefore be financed by the sector or recognized for a personal learning account. In some cases, they will issue a specific professional certificate in addition to the academic award of the university partnership.

# Create an educational and technological ecosystem

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The partnership has to take decisions on sharing a joint educational and technological ecosystem for the micro-credential programme:

- Select a digital learning environment;
- Share, evaluate and align tools;
- Share access to digital libraries and other facilities
- Share access to research and innovation

## Guidelines

### *Select a digital learning environment*

Determine on which learning environment/platform partners organize their learning activities.

A first option is for all partners to organize online learning activities on one learning platform, preferably the platform of the leading university, which is comfortable for the learners as they do not have to switch during the programme.

A second option is for students to switch learning platforms when they start a course at another partner university, which is probably comfortable for the teaching staff but less so for students. In this case, the platform is linked to the course taken. This actually reflects mobility pathways in physical joint programmes, students switching universities as the curriculum progresses. Teachers can easily use software and extensions that are linked to the learning platform they are used to.

A third option is that institutional learning platforms are interconnected. In European University Alliances (EUI), many joint programmes are planned to be delivered in a blended or online format. In this case, it is useful to look for a smart connection between institutional platforms in the alliance, serving all collaborative courses and programmes and mobility schemes. OpenU prepares middleware to make such connections.

A fourth option would be for online courses and programmes to be supported on a national or European platform accessible to all learners. Current platforms or not yet established for this purpose. In practice, the European MOOC platforms already fulfill this task for on-line microcredential courses and programmes courses (MOOCS) and (MOOC-based) programmes, in particular Futurelearn; France Université Numérique, FUN; Miriadax; EduOpen (EADTU, 2021)

### ***Share, evaluate and align tools***

See above, under “design the joint curriculum–Share, evaluate and align tools

### ***Share access to digital libraries and other facilities***

Share access and guide students through the use of resources in digital libraries in the respective partner universities and faculties, extending their learning environment to other university environments for doing research, assignments or project work.

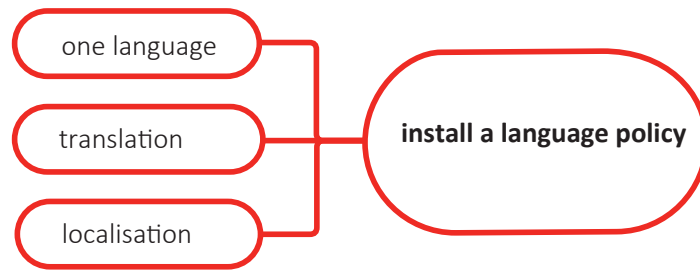
Provide students with access to institutional facilities such as digital labs, simulations, learning games, etc.

### ***Share access to research and innovation***

At universities, research, innovation and education are intertwined (the knowledge triangle). Where possible, ensure that students have access to research and innovation in the partners’ departments, e.g. to webinars, projects, thesis work, possibly as an extracurricular activity, to open minds to innovation and stimulate motivation for further international networking and study.

# Install a language policy

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Most collaborative programmes use one language as the language of instruction, usually English. Unlike physical mobility in the Erasmus programme, online micro-credential programmes are not intended for language acquisition, although learners deal with different languages and corresponding cultural backgrounds. Improving intercultural skills can therefore be an explicit goal. In some programmes, each university teaches in its own language, which is more difficult with ‘minor’ languages.

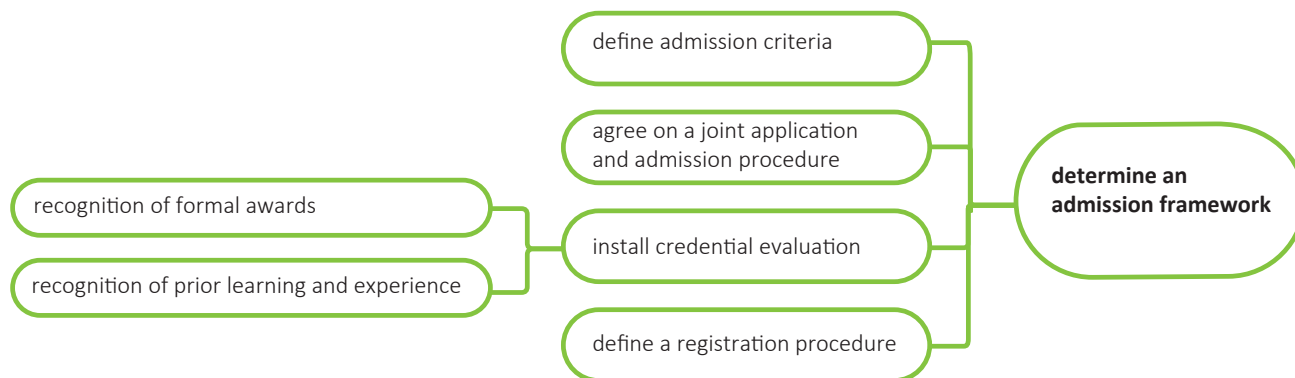
The programme team can also choose to translate a course or a course package in the programme. This has become easier with modern language software. The interaction between peers who speak different languages is then still a challenge, although in the European context most (young) learners have some level of English proficiency.

Lectures or videos that are part of the programme can optionally be undertitled.

When courses or course packages are translated, they can possibly be localized, meaning that the course content is adapted to the learners’ linguistic, social and cultural context.

# Define an admission framework

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The partnership has to establish an examination committee, consisting of academic representatives from all partner universities. The examination committee determines a joint admission framework, which includes:

- Define admission criteria;
- Agree on a joint application and admission procedure;
- Install credential evaluation;
- Define a registration procedure.

## Guidelines

### *Define admission criteria*

Admission criteria for a micro-credential programme are determined by the programme team, taking into account several options:

Admission to the micro-credential programme can be open, meaning it is not dependent on formal requirements such as a diploma. The programme team may ask the learner to prove that he has already acquired previous competencies (knowledge, skills) necessary to successfully complete the programme by showing his CV or learning portfolio, formal education awards, professional development certificates or work experience. On the basis of this, the programme team evaluates the student's readiness for the study programme, advises him on admission and, if necessary, proposes a preparatory course unit or course unit.

Open admission is best suited to micro-credential programmes, which are intended to contribute to professional or personal development.

However, open admission is not always possible, for example if the study programme is a stackable module in a formal study programme. If necessary, the learner must be informed

that he cannot valorise the micro-degree qualification for registration for a degree programme if he does not meet all (legal) prerequisites for this degree.

In the case of a post-bachelor or post-master micro-credential programme, the programme team can set the corresponding bachelor's or master's diploma as an admission requirement.

### ***Agree on a joint student application and admission procedure***

The programme team, chaired by the lead university, establishes a joint application and admission procedure for students. It meets on admissions whenever a cohort of new students enter the programme. The procedure must be transparent, fair and objective.

The programme team also ensures equality, taking into account the living conditions of students with special needs or different social backgrounds.

### ***Install credential evaluation***

Credential evaluation is only required if formal entry qualifications are required for the micro-credential programme. The programme team looks at previous qualifications or credits obtained at other (international) universities.

The programme team can also evaluate and formally recognize prior knowledge or experience taking into account to institutional rules and can award credits (ECTS) for this. This exempts the learner from parts of the micro-credential programme he intends to take. Most institutions rightly follow the rules of the ECTS Guide for this. The STACQ project has developed a credential evaluation tool for micro-credentials, including those containing only sparse certificate information (Nuffic, 2022).

### ***Define a registration procedure***

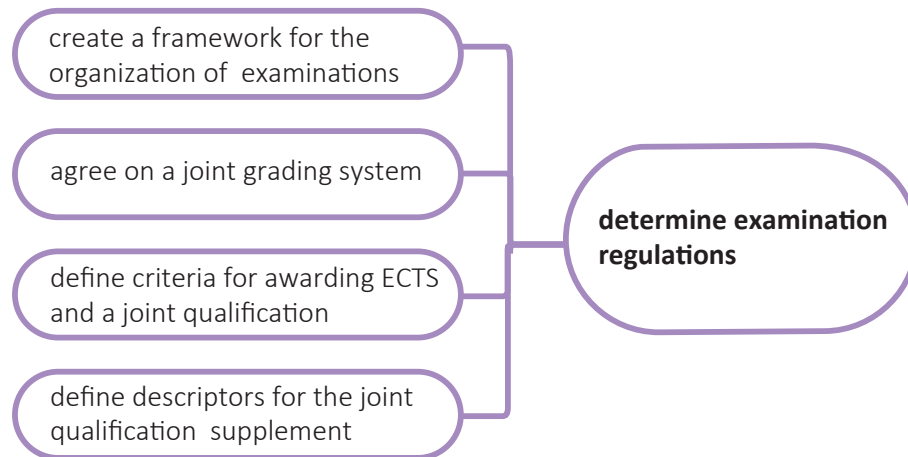
To receive credits and the joint qualification at the end of the programme, learners must be enrolled in each of the partner institutions. A learner can enroll in the programme at any partner institution, giving him a main registration for the entire programme and a secondary registration in the other institutions according to schedules worked out between the respective student administrations. This results in the capacity for each of the rectors or deans of the faculty to sign certificates. The costs associated with the registration are divided among the partners according to common rules (see section on business plan).

It is also possible for the student to sequentially enroll in a course at each of the partner universities as the programme progresses. This is administratively more complicated for the learner and for the programme team. The total fee that the student has to pay at the end will probably also be much higher.

# Determine examination regulations

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The programme team develops joint examination regulations by which following aspects have to be considered:

- Create a joint framework for the organization of the examinations;
- Agree on a joint grading system;
- Define criteria for awarding ECTS and a joint qualification;
- Define descriptors for the qualification supplement.

## Guidelines

### *Create a joint framework for the organization of the examinations*

Partners should agree on joint examination methods and mechanisms to assess learner performance, especially with regard to types of examinations, academic and professional recognition, identity verification and proctoring exams (TESLA, 2019).

Formative assessment and feedback, as well as peer evaluation, are tools to enhance learning during the course and promote effective learning.

Explicit summative assessment through exams is necessary for the award of credits and certificates for the programme according to the criteria communicated to learners before the course starts. In many micro-credential courses, summative assessment is organized at the end of a learning unit after completion of successive formative assessments.

Partners must agree on a common approach for both formative and summative assessment.

### ***Agree on a joint grading system***

European universities are likely to use different grading scales, for example 1-20; 1-10; 1-5 or 1-30. In some countries, almost a binary pass-fail system is used without further distinction. Performance on these different rating scales is often difficult to compare and can complicate the transfer of records as the programme team must agree on awarding a final grade or certificate to each student.

It is therefore important that partners use a common rating scale for the programme (preferably the scale of the leading university, for example 1-20).

In addition, the transcript of records must be based on a learner's performance against pre-specified learning outcomes or competences (criterion-based assessment). It should not be based on a student's (normalized) statistical place in the class group (normative assessment), which would raise ethical considerations. Partners should retain exam copies in order to allow the committee, if needed, to rescale performance according to the rating scale chosen prior to issuing certificates.

### ***Define criteria for awarding credits (ECTS) and a joint qualification***

Lecturers who organize a subject in the joint programme are academically responsible for the final examination of the subject. This means that the exam must always be taken by these personnel. ECTS credits are awarded accordingly by the university to which the staff belongs.

The certificate for the entire micro-credential programme is awarded by the programme team on the basis of the total performance of the student on all courses. This requires common rules and sometimes a collegial deliberation and jurisprudence at the end.

Administratively, students' grade records should be stored in the joint database developed in the lead university's system. The qualification supplement can be rolled out by this system.

### ***Define descriptors for the joint qualification supplement***

The certificate for the micro-credential programme must be accompanied by a joint certificate supplement consisting of information as described in the ECTS User Guide and Europass (see above, under "Agree on a qualifications"). The programme team must reach agreement on the descriptors of this qualification supplement.

# Agree on a joint quality assurance scheme

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The quality assurance for a joint micro-credential programme is a common responsibility of the partnership. In this respect decisions have to be taken about:

- Connect with institutional quality assurance frameworks in the partnership;
- Connect with the European Standards and Guidelines for Quality Assurance and its guidelines for e-learning;
- Connect with quality concepts and frameworks within your European University alliance (EUI) or network
- Use evidence-based quality assurance instruments;
- Prepare for accreditation.

## Guidelines

Digital education and micro-credentials are a new challenge for quality assurance (Ubachs & Henderikx, 2022; Mathes, 2018). For joint micro-credentials, the following steps should be taken:

### ***Connect with institutional quality assurance frameworks in the partnership***

The programme team draws up an integral quality assurance plan for the joint programme, building on the internal quality assurance systems of the respective universities.

Teaching staff are responsible for the scientific content and the level of the education within the joint curriculum. As an institution, each partner university is responsible for the quality assurance of the courses taught by its teaching staff in the programme. The programme team can add quality criteria and procedures for the entire programme, for example in relation to specific (joint) learning activities and for other aspects to be addressed at the curriculum level.

The joint programme team board bundles the reports on quality assurance and discusses the results.

Quality assurance takes into account a variety of criteria and indicators, in particular:

- study progress and success;
- compliance of learning results with the pre-specified learning outcomes and competences;
- the learning experience and satisfaction during the programme;
- the content and level of the programme;
- data from learning analytics.

***Connect with the European Standards and Guidelines for Quality Assurance (ESG) and its guidelines for e-learning***

The institutional quality assurance procedures will comply with ENQA Standards and Guidelines for Quality Assurance in Higher Education. For the aspects of online learning, it follows the guidelines of the ENQA working group on quality assurance and e-learning. (Huertas et al., 2018)

In a broader perspective, other criteria can be considered, for example with regard to the European Commission's Proposal for a Recommendation on Micro-credentials (European Commission, 2021).

***Connect with quality concepts and frameworks within your European University alliance (EUI) or network***

The EUniQ project (2019–2021) develops a quality assurance approach for European universities (EUI). This approach is aimed at multi-campus education, of which joint micro-credential programmes are an important part (EUniQ, 2021).

The project will help alliances and networks to define and self-assess their quality.

These key questions were leading in the pilot phase:

- What is the vision of the European University on the quality of its education and, where possible, research, innovation and service to society?
- How will the European University realize its vision?
- How does the European University monitor to what extent its vision is actually being realized?
- How does the European University work on improvement?
- How is the quality of the offer of the European University guaranteed in an internationally accepted manner?

When developing a micro-credential programme, connect with quality assurance concepts and frameworks of your university alliance or network, especially related to the last question.

### ***Use evidence-based quality assurance instruments***

*E-xcellence* is a quality assurance instrument for online, open and flexible education. The self-assessment tool is accompanied by an extensive manual offering guidance for improvement, covering blended and online course and curriculum design, student and staff support and strategic management. *E-xcellence* offers also onsite reviews for the ex-post quality assurance of programmes (Ubachs et al., 2015).

### ***Assess on a regular basis the maturity level of the programme***

The *European Maturity Model for Blended Education* (EMBED) can be used to assess the maturity level of courses, programmes and institution-wide facilities for blended education. The concept of maturity refers to the degree of regular and deliberate optimization of a blended programme and on evidence-based decision-making on the optimization of the programme by the programme board. (van Valkenburg et al., 2020 Dijkstra & Goeman, 2021).

### ***Prepare for accreditation***

In most European countries, universities are accredited at the institutional level. As a result, university programmes are no longer systematically accredited at the individual programme level. The institutional accreditation assumes that internal quality assurance procedures are in place for the programmes organized.

Within an institutional accreditation framework, it is still possible that individual university programmes have to go through an accreditation procedure. Some micro-credential programmes will be assessed as part of a degree programme.

If a micro-credential programme had to undergo such accreditation, an ex-post procedure is preferable to an ex-ante procedure, which would take time and hinder the responsiveness of the programme to needs in the economy and society.

# Develop a business plan

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The partnership has to develop a business plan for the joint micro-credential programme, which is dependent from a set of parameters, depending from national and institutional policies and strategies:

- Benefit from public funding;
- Agree on a fee structure;
- Seek recognition and funding by external stakeholders;
- Provide scholarships;
- ensure a fair allocation to partners;
- connect with institutional business models for continuing education;
- Integrate the micro-credential programme in wider degree programmes

## Guidelines

### *Benefit from public funding*

National funding of micro-credential programmes can vary widely from country to country. In some countries, these programmes are not recognized for funding.

Recognition would ensure that they are funded as independent continuing education offerings and as a pathway to degree programmes.

Project funding is supportive, but not sufficient to ensure the long-term sustainability of a micro-credential programme.



In a start-up phase, micro-credential programmes could eventually be funded as strategic experiments by European programmes such as Erasmus+ or the European Social Fund.

Most importantly, the development of joint micro-credential programmes is funded under the European Universities Initiative (EUI), through which alliances develop innovative educational formats for blended or online continuing education.

### ***Agree on a fee structure***

The partners jointly determine a registration fee for the micro-credential programme. Ultimately, they can differentiate this fee for individual and collective subscriptions. They must ensure that individual fees are affordable for learners.

A complicating factor is that higher education tuition fees generally vary from country to country and in some countries even tuition fees are not paid.

When determining fees, partners must balance the fees in different national systems and other public and private revenue streams on the one hand, and the operational costs of the programme on the other.

They may consider that online programmes are more scalable and therefore the marginal cost per student may be lower, which may affect the fee structure for the programme.

### ***Seek recognition and funding by external stakeholders***

In some areas relevant to employability and innovation, partners can spark the interest of external stakeholders such as companies, business sectors or professional organizations to recognize and support a micro-credential programme, for example through sectoral funds.

In some countries, personal learning accounts are created that support students to participate in continuing education programmes.

### ***Provide scholarships***

In the case of high enrollment fees, joint micro-credential programmes may provide scholarships to individual students sponsored by companies or other stakeholders.

### ***Ensure a fair allocation to partners***

In public funding, partners are bound by national regulations. When developing business models, fees and private funding streams can be allocated to partners based on their actual contribution to the programme.

### ***Connect with institutional business models for continuing education***

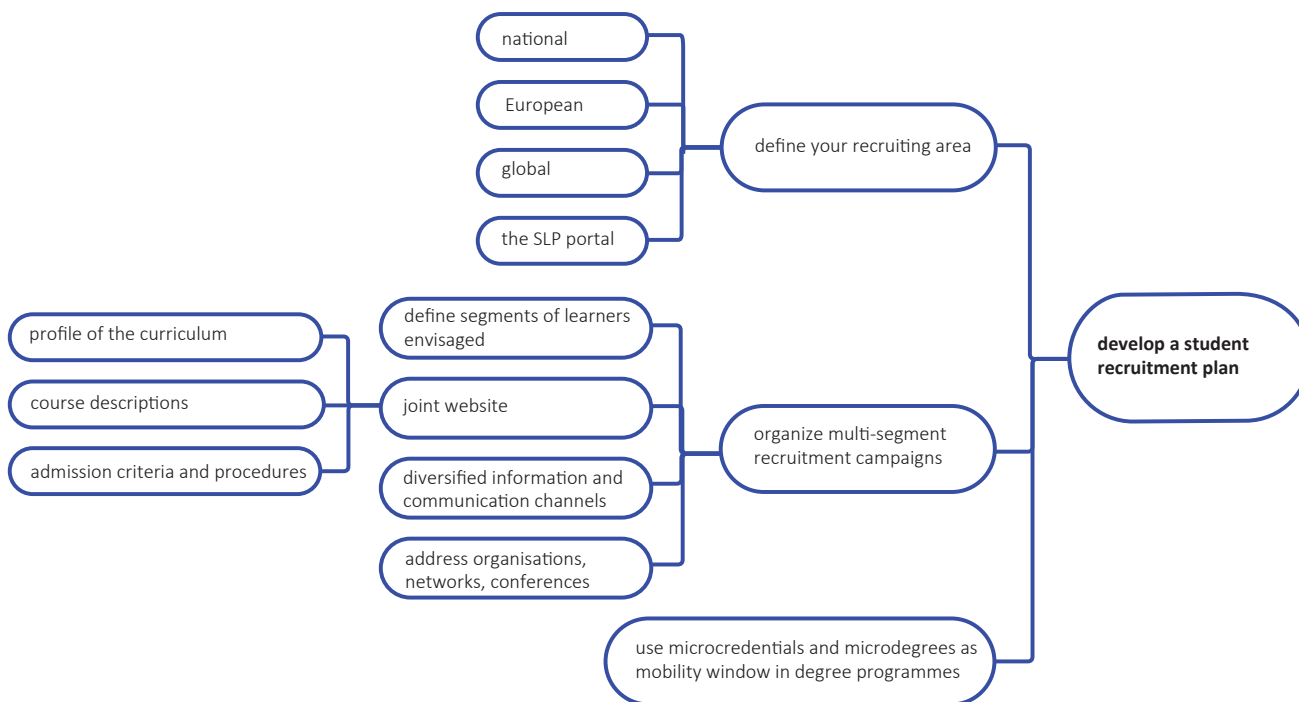
Joint micro-credential programmes are an integral part of an institution's continuing education provisions. At the same time, they are co-owned by each individual partner university. Therefore, within this common framework, they should be managed as a separate entity in each institution. In order to promote innovation, the revenue streams for micro-credential programmes should be allocated directly to the faculty and to the joint programme board.

### ***Integrate the micro-credential programme in a wider degree programme***

Universities can also valorize micro-credential programmes in wider bachelor or master degree programmes as a major or minor track. As such, they can also be presented to other universities as a mobility window.

# Develop a student recruitment plan

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**Partner universities have to conceive a joint student recruitment action plan for the joint learning programme:**

- Define the recruiting area;
- Organize multi segment recruitment campaigns;
- Use micro-credential programmes as a mobility window in degree programmes.

## Guidelines

### *Define your recruiting area*

Depending on the objectives and set-up of the joint learning programme, partner institutions can recruit learners at national, European and global level. In the case of transnational delivery, course and programme designers must consider learner characteristics and contexts beyond their institutions or partnership.

The short learning programme and MOOCs for the labour market portals will give learners access to information about micro-credential programmes and link them to the website where they can register and start the admission process.

### *Organize multi-segment recruiting campaigns*

The partnership should organize recruitment campaigns for transnational delivery. That is why a website for the micro-credential programme is needed, on which the objectives and

profile of the study programme, course descriptions and testimonials, the student profile and the admission criteria are clarified.

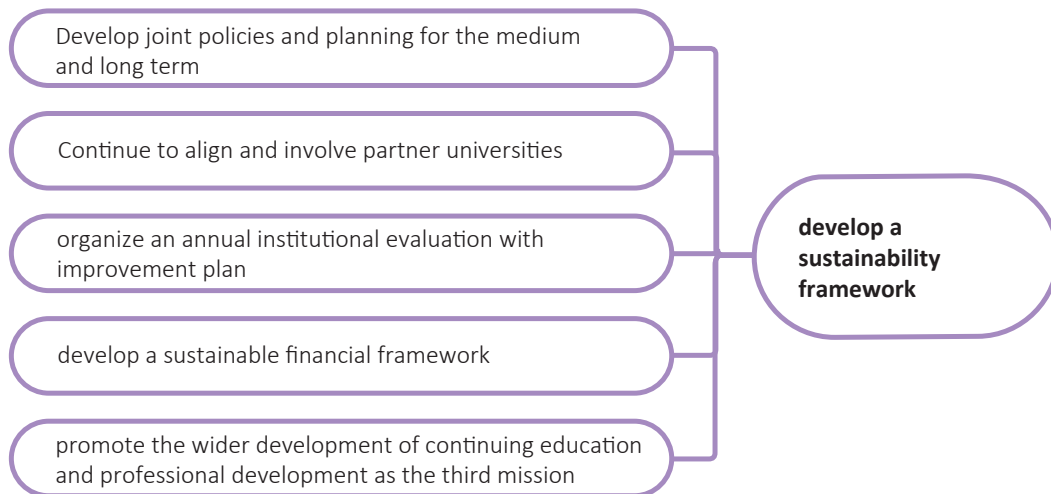
Recruitment campaigns will be set up targeting companies, business sectors, professional associations, alliances and networks, as well as individual students. Various communication channels can be used, such as mailings, social media and participation in conferences and trade fairs. Communication and recruitment campaigns should be set up per target learner segment.

***Use the micro-credential programme as a mobility window in degree programmes***

Micro-credential programmes are particularly suitable to serve as a mobility window for broader university programmes. To operationalize this, a learning agreement between the micro-credential programme partnership, the home university and the student is needed (see Chapter on mobility windows)

# Develop a sustainability framework

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### The partnership develops a sustainability framework based on a strong basis:

- Develop joint policies and planning for the medium and long term;
- Continue to align and involve partner universities;
- Organize an annual institutional evaluation with an improvement plan;
- Develop a sustainable financial framework;
- Promote the broader development of continuing education and professional development as the third mission.

## Guidelines

### ***Develop joint policies and planning for the medium and long term***

The partner universities define a medium- and long-term policy and planning for the joint programme with qualitative and quantitative milestones related to attracting (inter)national students, income streams, study progress and success, learning agreements with third universities, collaboration with stakeholders and other factors to consider.

### ***Continue to align and involve partner universities***

The partner universities remain aligned and committed to the shared objectives, main structure and pedagogical principles of the programme and the qualifications awarded. They regularly assess the relevance of the programme to the partnership and individual universities.

### ***Organize an annual institutional evaluation with an improvement plan***

The partnership conducts an annual course and programme evaluation with recommendations for improvement. The assessment may address dimensions such as programme

relevance and coherence, alignment with the technology ecosystem for course delivery, staff-student interactions, learning communities and discussion forums, student learning experience and workload, and the inclusiveness of the programme.

The E-xcellence instrument and the European Maturity Model for Blended Education can contribute to this evaluation.

### ***Develop a sustainable financial framework***

The partnership should develop a medium and long-term financial plan, based on the original business plan, comprising revenue streams from public funding, tuition fees, external stakeholders and sponsored grants. The plan also relates to the allocation of cash flows to individual partners.

The institutional frameworks for continuing education must also ensure that programme revenues are allocated to the faculty and to the joint programme team according to the financial planning.

The plan will also be flexible, taking into account foreseen and unforeseen changes. Therefore, it should be reviewed annually with advice from financial experts.

### ***Promote the broader development of continuing education and professional development as the third mission***

Partner institutions should promote the institutional development of continuing education as a comprehensive offering, alongside regular degree programmes and in line with the university's social mission to meet large-scale needs in society and in the economy. Micro-credential programmes will be structurally embedded and supported in such an approach, which will also support them in this comprehensive continuing education structure.

In this perspective, the partnership should also participate in the upcoming discussions on micro-credentials at national government level to ensure a national framework for the recognition and funding of continuing education.



# Conclude a consortium agreement

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In order to consolidate joint responsibilities and activities, a consortium agreement must be concluded regarding:

- The composition of the partnership;
- The role of the programme team;
- The objectives of the programme;
- The main structure of the programme;
- The most important pedagogical principles;
- The way of delivery;
- Mobility agreements;
- The awarded qualification;
- The language policy;
- The admission;
- the examinations;
- the quality assurance mechanisms;
- the financial management.

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