Micro-GEAR

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Micro-credentials in higher education: practical and pedagogical aspects

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Micro-credentials - Definitions

UNESCO Definition (2021):
"A microcredential is a certification of learning outcomes acquired through a short learning experience, assessed against transparent and clearly defined standards."

European Commission Definition (2022):
"A micro-credential certifies the learning outcomes that a person has acquired following a short learning experience, which has been assessed and is organised according to transparent standards."

European University Association (2023):
"Short learning programs focused on specific skills, which provide credits that may be partially or fully recognized within broader academic qualifications."

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Micro-credentials – Key Points

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1) **Proof**: microcredential as *a demonstration of the learning outcomes acquired*.
   a. A **certification**
   b. The **assessment**
      i. Micro-credential success depends on its capacity to be recognised by (or generate the 'trust' of) as many operators (countries, companies, training subjects) as possible.
      ii. The micro-credential must be:
         - granted on the basis of a **reliable evaluation** of the learning outcomes acquired by the learners.
         - the evaluation methods must be **transparent** and **shared** by a broad community of operators.

2) **Learning outcomes**: knowledge and competences, that participants in *short learning experiences* can expect.
   a. Method: they must be described according to a terminology widely **shared and recognised**
      i. suggest the use of the so-called **Dublin descriptors** for the description of learning outcomes.
   b. Content: **the choice** of be enrolled in a MC programme depends on **knowledge or skill** offered
      i. It is crucial to properly describe how the acquired competence will be useful to the learner
         - at work, social, economic or cultural level.

Micro-credentials – Key Points

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3) Short learning experience.

a)The learning experience is the **content** that is offered

b)The **teaching techniques and methods** that we intends to employ lead us to a short learning experience

- Usually shows an intimate connection with
  - the labour market
  - particular conditions (socio-economic, cultural) of those who enrol

4) Learner

a) relationship between learner and teacher

b) oriented to updating competences

c) oriented on acquiring skills useful for the labour market.

i. Defining a micro-credential programme we must ask ourselves:
   - who is the learner? what is his **socio-economic background**?
   - what are the objectives that motivate him/her?
   - From which **level of knowledge** he moves?

d) Involvement of the right providers for the benefit of learners
   - ensure a balance in component from academic and private supply.

Why and what do we teach?

1. The **link** that exists between the **economy, rights and the individual**.
2. The Development of technologies and their application within the labour market
   - The broad knowledge acquired through university:
     - is no longer sufficient
     - is no longer enough to possess a certain professional qualification.
3. Professional all look for an increasingly **sector-specific knowledge**.
   - To avoid risk to be replaced and to be outdated.
     - updating and upgrading their skills
     - retraining theme self
     - train news skills
       - **recognized certification**, is the answer for an increasing number of companies
       - micro-credentials can also offer "in-formal qualifications", while we waiting for the choice of public decision-maker.
4. The goal of a **lifelong learning** = learning must necessarily extend to the entire work life
   - micro-credentials appeared an **ideal answer**
     - to prevent that certain people remain on the margins of society and the labour market
     - to help people in their social, human and cultural **growth**;
       - not only professional obsolescence but also cultural **obsolescence**.

How do we teach?

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Answering the training demands of the labour market we have to **innovate teaching**

- New teaching methods and tools.

Pandemic has marked a considerable acceleration in the training sector.

- **Distance and blended learning** have had a strong impact
    - on educational institutions/ on teachers/ on students' lives

Micro-credentials can **benefit from IT tools** more than “ordinary” education cycles;

- Information technology is deeply linked to the development of the certification of "small" skills

Modular design

- Structures learning into **independent, flexible, standalone modules**
    - each module ha s to be focus on a specific and **clearly defined skill** or area of knowledge.
    - each module is designed to be **short-term and focused**
- Modules can be **combined in a personalized way**
    - depending on the learner’s **needs** or labor market demands.
    - promoting **lifelong learning** and allows educational pathways to be tailored to individual or sector-specific needs.
- Programme has to lead to
    - A fast acquisition of competencies
    - An **immediate recognition** of acquired skills

How do we teach? – Digital tools

Learning Management Systems (LMS)

These platforms host and deliver modular learning content:

- **Moodle** (with *OpenBadges* plugin)
- **Canvas**
- **Blackboard**
- **Google Classroom**
- **Microsoft Teams for Education**

Analytics & Reporting Tools

To monitor learner progress and outcomes:

- **Power BI** or **Tableau**
  - for advanced dashboards LMS integrated analytics
- **xAPI** (Experience API)
  - for detailed learner tracking across platforms

Tools for Content Creation & Assessment

To create interactive, modular learning materials:

- **Articulate 360**
- **H5P**
- **Google/MIcrosoft Forms** for quizzes and feedback
- **Typeform** – for engaging learner assessments

Digital Credentialing Platforms

These tools issue, verify, and manage micro-credentials and digital badges:

- **Credly**
- **Badgr** (now part of Canvas Credentials)
- **Accredible**
- **Open Badge Factory**
- **Skilljar**
- **CertifyMe**

How do we teach? – Active Learning

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Active learning is an instructional approach that engages students in the learning process.

From a **pedagogical** standpoint = construct knowledge through **experience and interaction**.

- **Learner-Centered**: students are co-creators of knowledge.
- **Social Constructivism**: Emphasizes collaboration and dialogue; knowledge through social interaction.
- **Experiential Learning**: engage learners in a real-world tasks.
- **Metacognition**: Students reflect on their learning process, developing awareness of how they learn.

From a **didactic** point of view = use of specific **methods, tools, and strategies** to promote engagement

- **Instructional Design**: Lessons are planned around **active tasks** (problem-solving, case studies, debates…)
  Formative Assessment: Continuous feedback is integrated into activities to guide learning (peer review)
  Multimodal Teaching: Combines **various formats**—discussion, digital tools, writing, performance
- **Scaffolding**: The teacher provides support and structure to help learners progressively gain independence.

Examples of Active Learning Strategies:

- Think-Pair-Share
- Problem-Based Learning (PBL)
- Flipped Classroom
- Role-playing and Simulations
- Peer Instruction
- Interactive Quizzes and Polls
- Concept Mapping
- Socratic Questioning

Pedagogical and didactic – Key Points

Learners.

a) **Unconventional: workers.**

- If participation in the micro-credential is carried out in agreement with the company or employer, eventually as **part of the employee's training**, this allows:
  - to deliver content during working hours;
  - to develop face-to-face learning activities, also for networking purposes.
- If participation in the micro-credential is undertaken **independently**, it is clear that the worker:
  - will not be able to take advantage of working hours;
  - develop face-to-face learning with a fixed timetable may conflict with work or personal/family activities.
  - the use of e-learning became a necessary key to grant flexibility.
- Micro-credentials, could be part of the training necessary to perform the new tasks assigned to the worker
  - **talk to companies** in order to offer courses close to their needs;
  - work with them to define clear learning outcomes
  - preserve training independence, as proof of quality training
- From a didactic point of view, workers will tend to be more interested:
  - in cultivating the practical-applicative side of knowledge,
  - in content offered with a problematic approach rather than a theoretical one
  - to share their wealth of experience, which deserves to be valorised in the context of training.
  - set **different learning times and methods**
    - they cannot adhere to long-term training courses,
    - they prefer short, highly specialised experiences
    - they seek pathways that offer a final certification, recognized in the labour market.

Pedagogical and didactic – Key Points

Learners.

a) Conventional: students

- In this case, micro-credentials are considered
  - as a completion of the training received within the traditional education and training system.
  - can serve to broaden students' backgrounds, giving them access to more specific skills or knowledge
  - I.e. Certificate on International Competence - UER badge.
    - Distinction between ***microcredentials*** and **professional qualifications**, which cannot be confused
      - Qualifications represent "licences", which **public regulation requires** to allow practicing a certain profession.
        - The main characteristic of a professional qualification is its compulsory nature; to have access to a certain labour market the student must have the proper qualification.
      - Micro-credentials are by definition on-demand;
        - they are never 'necessary' for professionials, but are always 'optional' and 'voluntary'.
      - However, with respect to new jobs, micro-credentials can temporarily replace qualifications
        - as long as there is no official and public regulation of the requirements for access to these professions. E.g. **Mediatior**
      - Micro-credentials may also flow into a qualification, but they must receive some sort of formal recognition ('equalisation') from the public decision-maker.
        - This can easily happened, when the pathways established to acquire certain qualifications is "**modular**"
        - The two models could be manage to complement each other, even if we believe that micro-credentials must remain something different and be designed independently and autonomously.

Pedagogical and didactic – Key Points

Teachers – Micro-credential providers.

- public subjects, such as universities and other training and educational institutions;
- private institutions subject to public regulations
- private institutions
  - The current explosion of demand for micro-credentials opens up to several risks
    - dissemination of content offered without necessary competences and deep knowledge;
    - an adequate quality assessment systems;
    - a relevant experience in didactics;
  - A **previous quality assessment** on contents delivered in a micro-credential programme **is not compulsory at the moment**,
    - Anyway is not uncommon to establish that contents offered in specific areas or in pathway that leads to a formal "qualification" can be delivered only in consortium with Universities, that have an objective experience with quality assessment systems and hold relevant experience in pedagogy and didactics;
    - At the same time, since we are dealing with a field of education, which is generally under the control of public decision-makers, the presence of a large number of private entities requires an effort to regulate the micro-credential offers, in order to guarantee their quality and seriousness.
    - A new micro-credential **should guarantee a previous quality assessment on**
      - clarity in the definition of the expected learning objectives;
      - transparency in assessment methods
      - correspondence of the assessment to the learning levels defined by the National Qual Fram - NQF;
      - certification of competences at the end of the program

Pedagogical and didactic – Key Points

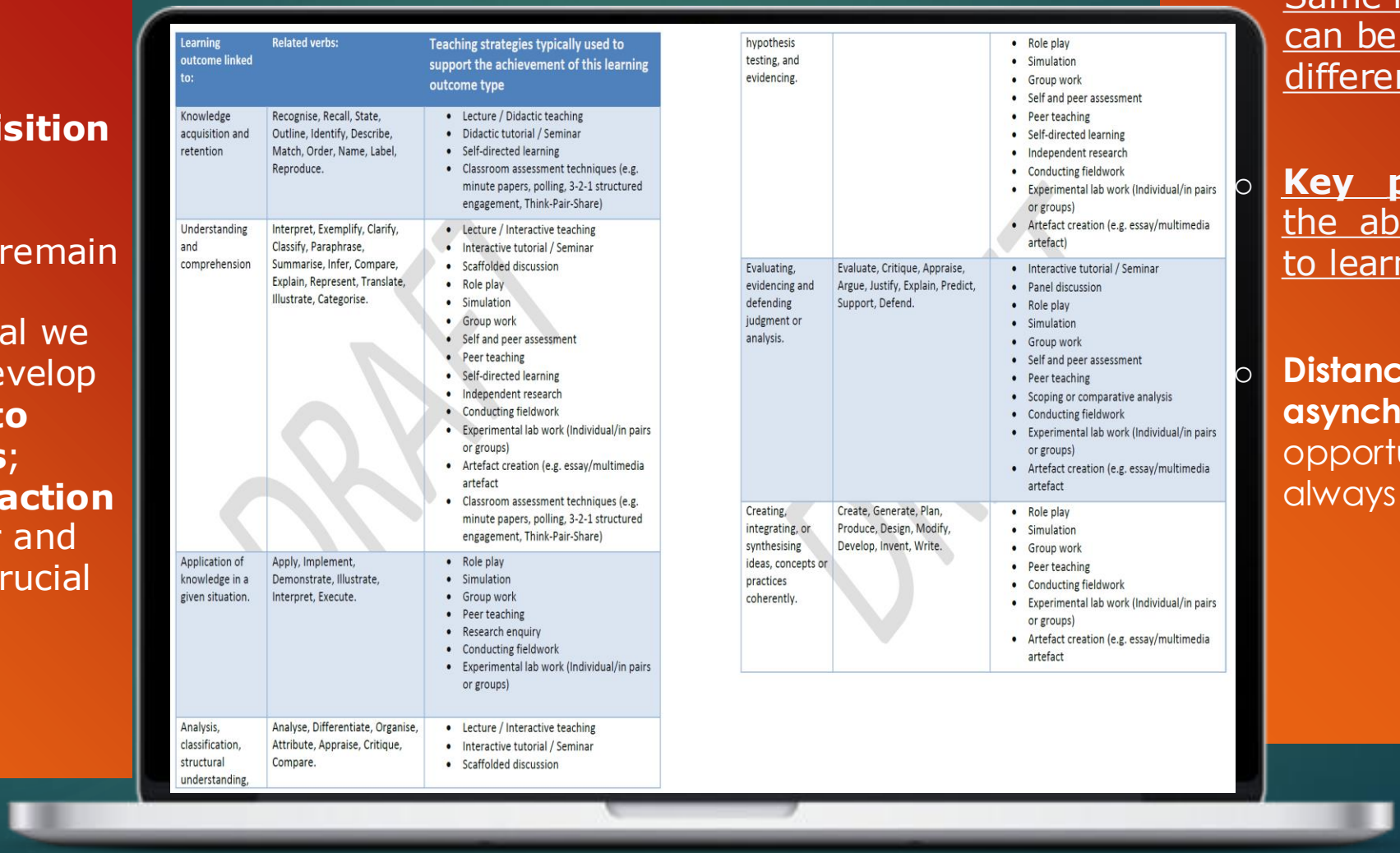
Learning outcomes

- **Microbol** ("*Micro-credentials linked to the Bologna key commitments*")
  - Microbol proposed a definition of micro-credentials according to which they must have **final results associated with a QF-EHEA/NQF** (*qualification framework-European higher education area/national qualification framework*) **level**.
    - ***NQF*** facilitates to perform analysis and (above all) comparability of qualifications in different systems, covering the entire education pathway of a student.
      - Also for micro-credential central role is played by the use of **ECTS credits**
- Qualifications also differ from one another because of the **different learning outcomes**
  - ***The Dublin Descriptors***, largely used to define learning outcomes, and built on various elements
    - *Dublin Descriptors* do not represent a minimum requirement, which the learner must achieve, but aim to **identify the nature of the qualification**.
      - They are not related to a specific academic or professional field, and can be used transversally.
      - They overcome limits imposed by differences between the various national systems.
  - **Microbol project considers the use of Dublin descriptors necessary** for the offer of a micro-credential, since they can:
    - **enable** potential learners **to perceive** more clearly the **objectives** of a specific micro-credential;
    - **favour the comparison**, on an objective basis, of that micro-credential offer;
    - **ensure the recognition** of the learning experience in a broader space.
- **Microcredentials** fall within the concept of **student-centredness**, introduced by the Bologna Process,
  - means the **involvement of the student in the decisions** that determine the **consistency of his or her educational pathway**

Dublin Descriptors

If the Outcome is "**knowledge acquisition and retention**"

- Main teaching strategies could remain **lectures**;
- In MicroCredential we always aim to develop skills → **ability to solve problems**;
- Guarantee **interaction** between teacher and learner remain crucial



Learning outcome linked to:	Related verbs:	Teaching strategies typically used to support the achievement of this learning outcome type
Knowledge acquisition and retention	Recognise, Recall, State, Outline, Identify, Describe, Match, Order, Name, Label, Reproduce.	• Lecture / Didactic teaching • Didactic tutorial / Seminar • Self-directed learning • Classroom assessment techniques (e.g. minute papers, polling, 3-2-1 structured engagement, Think-Pair-Share)
Understanding and comprehension	Interpret, Exemplify, Clarify, Classify, Paraphrase, Summarise, Infer, Compare, Explain, Represent, Translate, Illustrate, Categorise.	• Lecture / Interactive teaching • Interactive tutorial / Seminar • Scaffolded discussion • Role play • Simulation • Group work • Self and peer assessment • Peer teaching • Self-directed learning • Independent research • Conducting fieldwork • Experimental lab work (Individual/in pairs or groups) • Artefact creation (e.g. essay/multimedia artefact • Classroom assessment techniques (e.g. minute papers, polling, 3-2-1 structured engagement, Think-Pair-Share)
Application of knowledge in a given situation.	Apply, Implement, Demonstrate, Illustrate, Interpret, Execute.	• Role play • Simulation • Group work • Peer teaching • Research enquiry • Conducting fieldwork • Experimental lab work (Individual/in pairs or groups)
Analysis, classification, structural understanding,	Analyse, Differentiate, Organise, Attribute, Appraise, Critique, Compare.	• Lecture / Interactive teaching • Interactive tutorial / Seminar • Scaffolded discussion
hypothesis testing, and evidencing.		• Role play • Simulation • Group work • Self and peer assessment • Peer teaching • Self-directed learning • Independent research • Conducting fieldwork • Experimental lab work (Individual/in pairs or groups) • Artefact creation (e.g. essay/multimedia artefact)
Evaluating, evidencing and defending judgment or analysis.	Evaluate, Critique, Appraise, Argue, Justify, Explain, Predict, Support, Defend.	• Interactive tutorial / Seminar • Panel discussion • Role play • Simulation • Group work • Self and peer assessment • Peer teaching • Scoping or comparative analysis • Conducting fieldwork • Experimental lab work (Individual/in pairs or groups) • Artefact creation (e.g. essay/multimedia artefact
Creating, integrating, or synthesising ideas, concepts or practices coherently.	Create, Generate, Plan, Produce, Design, Modify, Develop, Invent, Write.	• Role play • Simulation • Group work • Peer teaching • Conducting fieldwork • Experimental lab work (Individual/in pairs or groups) • Artefact creation (e.g. essay/multimedia artefact

Same learning outcomes can be obtained using different teaching methods

- **Key purpose**: acquire the ability to learn how to learn
- **Distance learning** and **asynchronous mode** are opportunities but not always solutions

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Pedagogical and didactic – Key Points

The evaluation/assessment of learning

Looking at the final moment of the learning process **certification** is crucial and distinguish aspect for micro-credentials.

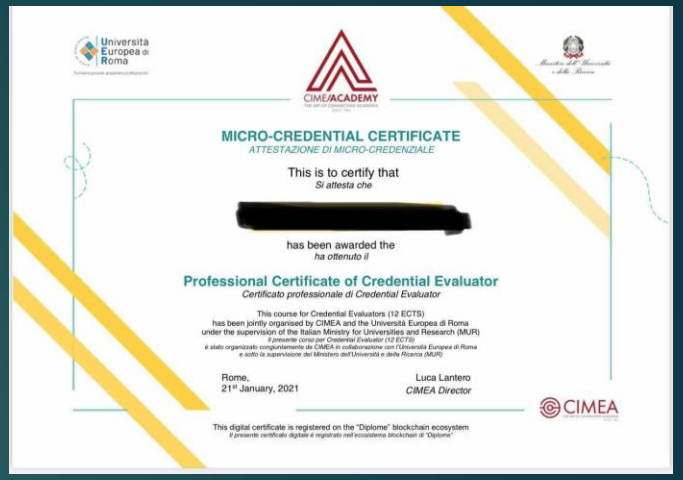
- The **real novelty of micro-credentials** is precisely in the possibility of providing a certification recognised by public and private entities.
- This aspect bring he need for **stronger regulation** and consistency of the final evaluation
  - Clear **methods of assessing** and measuring skills **move steps from** a severe work on the **identification of learning outcomes** using all the tools for "measuring" the experience (ECTS system; EQF, etc.).
    - If the expected outcomes are of a theoretical nature, then the evaluation techniques must be the traditional ones (abstracts, essays, oral examinations);
    - If, on the other hand, the programme has technical-practical objectives, then we need to look for more appropriate assessment methods (e.g. writing projects; making videos or computer programmes).
  - **Establish Transparent Standards**
    - **Objective criteria** or benchmarks used to assess what students have achieved of the learning outcomes.
      - These standards should be clear, objective, and easily understood by both educators and students.
      - They must always be known **at the beginning** of the course (and take into account the number of ECTS awarded)
      - They have to take into account the **mode of delivery** of the course:
        - if the didactics were **entirely on-line**, assessment in written modes but requiring critical thinking (NO multiple-choice answers) becomes absolutely necessary;
        - For **blended and face-to-face teaching**, it may be important to divide the assessment into several steps, through weekly assignments or the use of inter-course assessment tools.

Aimed at persons employed in HEIs, public administrations or elsewhere, where an understanding of academic systems and the rules and procedures related to the correct application of the Lisbon Recognition Convention are needed.

Entry requirements: to be accepted the learner must already have a first cycle degree (Laurea/Bachelor - Level 6 is required)

How to define level: In order to define competence levels, the project referred to the European Qualifications Framework as **Postgraduate Certificate** (Level 7). The course leads to a «Professional certificate on credential evaluation»

How to award credits: University Europea di Roma awarded 9 ECTS for 63 hours of teaching in presence, 160 additional study hours, on successful completion of the blended course.


MICRO-CREDENTIAL CERTIFICATE
ATTESTAZIONE DI MICRO-CREDENZIALE
This is to certify that
Si attesta che
[redacted]
has been awarded the
ha ottenuto il
Professional Certificate of Credential Evaluator
Certificato professionale di Credential Evaluator
Rome, 21st January, 2021
Luca Lantero
CIMEA Director

Microcredential supplement, verifiable and included in the learner's «electronic 'wallet' (using blockchain).


1 di 1
MICRO-CREDENTIAL SUPPLEMENT
1. **Name of the qualification:** Micro-credential certificate
2. **Name of the course:** Professional course for Credential Evaluators
3. **Name and status of awarding institution**: CIMEA – Italian ENIC-NARIC centre
4. **Level of Micro-credential**: Level 7 according to the European Qualifications Framework (EQF)
5. **Other qualification(s) awarded**: Diploma di corso di perfezionamento issued by the Università Europea di Roma
6. **Mode of study**: Online
7. **Language(s)**: Italian and English
8. **Length of the programme**: 4 months
9. **Workload**: 12 ECTS
10. **Final assessment:** Project work
11. **Quality assurance:** Academic Evaluation Committee of the Università Europea di Roma
12. **Learning outcomes:**

I. Deal with the challenges related to the evaluation of qualifications and recognition procedures
II. A thorough current and historical knowledge of all aspects of the issuing country's educational system, including traditional academic, vocational, technical, professional, and graduate education
III. Develop a knowledge of different models of countries' educational systems and competence in using the appropriate reference sources
IV. A thorough familiarity with and competency in using bibliographic and reference sources employed in credential evaluation, including Internet resources
V. A thorough current and historical knowledge of all aspects of the educational system to which the original credential is being compared
VI. A thorough knowledge of the methods and practices commonly used by international credential evaluators to conduct all aspects of a credential evaluation
VII. An ability to conduct thorough and professional communication with education officials at national and international level and being updated on the current reforms and latest news related to the internationalisation of higher education
VIII. Be capable of performing the functions of the role of international credential evaluator on an independent basis, but under the direct supervision of a senior evaluator

Verification of the certificate: in order to check the authenticity of the present Micro-credential, please ask the holder directly to proceed with sharing all the related documents through his/her "Diplome Wallet" on blockchain.

This Certificate is released in line with the EC European Approach to Micro-credentials

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The course is offered by an 'other provider' (CIMEA), designed and managed in conjunction with an HEI, in this case the European University of Rome.

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Accessibility

Microcredentials are often more affordable and can be completed **online**, allowing individuals to learn at their own pace and schedule.

Flexibility

Flexibility makes microcredentials particularly attractive to working professionals who may not have the time or resources to pursue a full degree program.

Qualification

Microcredentials provide course participants with a qualification that is **valuable in the job market**.

Innovation

Microcredentials can be quickly updated and adapted to **reflect changes in technology**, **industry trends**, and **job requirements**.

Conciseness

Unlike traditional degree programs, microcredentials can typically be earned in **a matter of weeks or months**.

Specificity

Microcredentials allow individuals to focus on acquiring the **precise skills needed for their desired career path**.

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Thank You

For Your Listening