

12 Green skills Micro-credentials

WP4- PILOT ACTIONS FOR TESTING OF MICRO-CREDENTIAL
POLICY METHODOLOGY

DELIVERABLE D4.1



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Document Summary

This deliverable is produced under the Erasmus+ Forward Looking project. MASTERY Micro credentials reliability unleashing green economy (GRANT AGREEMENT Project 101132845 ERASMUS-EDU-2023-PI-FORWARD). It presents 12 micro-credential courses designed for EQF Level 4, 5, 6 training in green skills for SMEs and companies' needs. Each course is developed following ESCO referencing, EQAVET framework indicators, and EQF Recommendation principles. The collection incorporates mandatory and optional data elements from the EU micro-credentials approach. MASTERY courses are structured as integrated pathways linking industry needs with policy vision, delivered through blended methodology. The LMS of MASTERY Microcredential courses is available at <https://mastery-microcredentials.academy>. The catalogue will be produced on the project website and will represent as an online gateway for enrollment and training delivery, with digital certification issued upon completion of both online and in person training.

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1. Introduction

This document introduces the so-called "Mastery Training Catalogue"¹, foreseen in the approved project as Deliverable D4.1- MASTERY Collection of the 12 Green skills Micro-credentials, Deliverable D4.1 is described as follows: *"the collection presents the products of the microcredit packages developed according to the criteria agreed with the social partners, ready to be rolled out. The collection will be a **catalogue that can be consulted online, as a gateway to the enrolment and delivery of training pathways**. At the end of the training pathway, the micro-credit certification phase will be mainly digital. If the delivery of the micro-credit requires a hands-on activity (WBL), the online training pathway will be complemented with the in-presence component"*

On a wider perspective, this deliverable represents **the result of a co-creation process carried out by the MASTERY Consortium to develop advanced-specialised training opportunities based on the MASTERY need analysis for green skills enabling the sustainability innovation in productive sectors (D2.1), and on the micro-credentials methodology (D3.1)**. The development of the 12 training programmes, in fact, has followed the on eight essential elements the Mastery Methodology highlights, (so-called " 8 visions"), for the design, delivery, and issuance of micro-credentials, **aligned with, both the European reference framework and labor market demands**, to guarantee timely recognition of achievements related to a set of green innovative competencies, identified as "enabling" through a multilevel research -based activity carried out in WP2-Green skills and knowledge needs in industry and policy context for responding to them. The research delivered in the first stage of the project's implementation, through desk research, interviews with local companies in the different partner countries and multistakeholder Focus groups. This multilevel approach has allowed partners to detect in **depth the skills needs of economic operators**, especially with reference to some of the core sectors on which grounds the EU economy, Manufacturing, Wood and Furniture, Agri Food and Building and Construction,

The MASTERY catalogue is accessible online as a portal for course enrolment and training delivery. Micro-credential certification is conducted primarily through digital platforms upon course completion. Since, according to the overall MASTERY Training approach, practical work-based learning (WBL) components or, at least, situated learning experiences are required, online training will be complemented by in-person sessions (blended learning approach).

Partners will test the set of 12 MASTERY courses during the project's life cycle, and this testing phase aims at involving different target groups (VET and University students, workers, entrepreneurs, public servants, VET professionals), according to the missions and vocations of the participating organizations. The pilot phase will be monitored and evaluated, and all data collected, nourishing a Final report on the testing phase (D4.2), which will be used to verify the overall consistency of the training catalogue and the design methodology adopted, and for their consequent finetuning. Moreover, the pilot experience will be shared with stakeholders during the WP5- Roll out the policy recommendation (M27-M36), starting in 2026, as a basis for exploitation of the MASTERY methodology (systemic approach to skills detection, training design, certification through MCs), and also this sharing process will collect hints for further improvements of the MASTERY Training courses.

In terms of structure, the Deliverable D4.1- MASTERY Collection of the 12 Green skills micro-credentials has been developed through a twofold directory:

- Introduction and description of the set of 12 green skills courses, explaining the overall methodological approach followed in the design process, and to prepare the "catalogue" for the piloting.
- Presentation of the competence certification process adopted to release micro-credentials for Learning.

¹ The MASTERY project has an overall duration of 36 months. It started on 01/01/2024 and will end on 31/12/2026

2. Methodological Approach

This chapter presents the development of the 12 MASTERY training courses, detailing the methodological framework applied for the design and delivery of micro-credential programmes. The analysis addresses the following methodological questions:

- Which enabling green skills have been identified through the needs analysis conducted in WP2?
- What are the components of the MASTERY training model and how was it structured?
- How have EQAVET quality assurance principles been integrated into the course design process?
- What procedures have been established for the certification and issuance of MASTERY micro-credentials?

Each section examines the alignment between policy objectives and the implemented MASTERY solutions, demonstrating how the project responds to current European frameworks for micro-credentials and green skills development.

The MASTERY enabling green skills

In agreement with the findings of the research-based activities foreseen in the WP2 *“Green skills and knowledge needs in industry and policy context for responding to them”*, the set of 12 Green Skills courses has been co-shaped through a strong collaboration among partners, who joined efforts to adapt the MASTERY Framework to the peculiarities of their respective local context (their activities, their targets, their local economic ecosystems and national regulations). The ED Tech partner was defined in Learning Digital, which supported the MASTERY consortium in elaborating the LMS.

The above-mentioned set of Enabling Green Skills has been identified as crucial for the transition to circular economy business models and the sustainable competitiveness of companies and ecosystems, thus, enabling innovation and capacity building. The key skills identified are a mix of sector-specific skills and transversal skills, as reported below.

Table 1: 12 MASTERY Enabling Green Skills²

No. of the Green Skills	Skill Label	Macro category	Reuse level	Green skill preliminary description
GS1	Select sustainable resource efficient approaches through the entire agri-food value chain	Production	Agrifood Sector-specific	Study and assess the potential impact of natural resource utilization throughout the entire production process, protect the resource conservation, estimate the resource need and choose the most suitable solutions to achieve a circular approach

² The MASTERY Deliverable 2.2 *“Research Report on the Micro-Credential Solutions to Boost the Green Skills Match for Industry”* is available online https://mastery-microcredentials.eu/wp-content/uploads/MASTERY_Research_Report_D2.2_compressed.pdf

GS2	Select environmentally friendly materials and components for buildings	Advisory Procurement/Design	Construction Sector-specific	Identify and select environmentally friendly materials and components for buildings, considering circular economy principles.
GS3	Design energy- and resource-efficient machines and systems for manufacturing processes	Production	Manufacturing Sector-specific	Develop design specifications to create or renovate manufacturing machines and systems that ensure efficient use of raw materials and energy.
GS4	Cradle to Cradle Design	Production	Wood&Furniture Sector-specific	Integrate circular economy, industrial symbiosis, cradle to cradle approach principles, waste management strategies to reduce the carbon and environmental footprint of products.
GS5	Reduce waste and material outputs	Production	Cross-sector Sustainability management	Coordinate the operations of a facility or organisation to prevent waste generation and promote reuse.
GS6	Advise on sustainability certifications and standards	Advisory	Cross-sector Sustainability management	Provide guidance on obtaining sustainability certifications and ensuring compliance with relevant standards
GS7	Measure and report sustainability performance	Reporting	Cross-sector Sustainability management	Monitor and document key sustainability indicators to evaluate organisational performance in alignment with the Sustainable Development Goals (SDGs) and international sustainability reporting standards (e.g., GRI and ISO 26000), including analysing data, preparing detailed reports, and providing actionable insights to support strategic decision-making and regulatory compliance.
GS8	Ensure compliance with environmental legislation	Compliance - EHS	Cross-sector Sustainability management	Ensure that the processes are compliant with environmental regulations and best practices. Monitor activities and perform tasks ensuring compliance with standards involving environmental protection and sustainability, amending activities in the case of changes in environmental legislation.
GS9	Educate on environmental sustainability concepts	Education and Communication	Cross-sector Sustainability management	Deliver education and training to organisations and individuals on key sustainability concepts, promoting a shared understanding of environmental principles, while fostering engagement in sustainable practices, both within organizations and in wider communities, to encourage environmentally responsible behaviours and actions.

GS10	Implement circular, green and socially responsible procurement	Procurement/Supply Chain	Cross-sector Sustainability management	Use procurement as a strategic tool to achieve sustainability goals.
GS11	Develop and implement joint sustainability initiatives	Procurement/Supply Chain	Cross-sector Sustainability management	Envision, plan, and develop collaborative strategies for companies and organisations aimed at achieving different shared sustainability goals, including creating new markets, enhancing resource efficiency, and upgrading equipment and infrastructure to align with sustainability objectives.
GS12	Evaluate sustainable investment opportunities	Advisory	Cross-sector Sustainability management	Integrate environmental, social and governance (ESG) considerations when making business or investment decisions, leading to increased longer-term investments into sustainable economic activities and projects.

From identifying green skills to designing micro-credentials

The consortium adopted a methodological framework aligned with the EU Council Recommendation on micro-credentials (2022/C 243/02)³, incorporating the following key elements:

- The purpose and needs alignment: micro-credentials are designed to enable "the targeted and flexible acquisition of knowledge, skills, and competencies to meet new and emerging needs of society and the labor market, enabling individuals to address skills gaps in rapidly evolving environments, without replacing traditional qualifications." The 12 MASTERY micro-credentials directly respond to priority needs identified during the WP2 analysis phase. **Each course defines specific learning outcomes that constitute a coherent package of knowledge, skills, and competencies corresponding to an identified enabling green skill.**
- Duration: a comparative analysis of regulatory frameworks across MASTERY partner countries revealed mandatory duration requirements only in Finland (27 hours minimum for micro-credential certification). No comparable limitations were identified in other participating countries. Consequently, **MASTERY micro-credentials have been standardized within a 24–27-hour range, deemed appropriate for achieving the defined learning outcomes** while maintaining the short-course characteristic of micro-credentials.
- The complementarity with existing qualifications: MASTERY micro-credentials are positioned as complementary to existing qualification frameworks, providing added value without substituting complete initial education and training programmes. None of the developed micro-credentials replace formal professional qualifications. Instead, **they target skills updating for current workforce members and recent VET system graduates requiring immediately applicable workplace competencies.**
- In line with EU guidelines allowing for the presence of different micro-credential providers in formal, non-formal and informal learning contexts, MASTERY involved VET providers operating

³ EU Council Recommendation on micro-credentials (2022/C 243/02) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627\(02\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627(02))

mainly in formal learning contexts, with proven sectoral specialisation: CETEM (wood and furniture sector), Cleantech Bulgaria (construction), Ahlman (agri-food), SFC (manufacturing) and SSSA (sustainability management). The courses have been developed using a collaborative model that involved relevant employer associations and research bodies (AMUEBLA, KRIB, PIJ, Confindustria, ACR+) as project partners, ensuring that the training content was aligned with the specific needs of the sector's labour market.

An additional methodological component supporting the development of the 12 MASTERY micro-credentials is the operationalization of the eight policy visions established in the MASTERY Policy Methodology (D3.1).

MASTERY's 8 Policy Visions for implementing micro-credentials

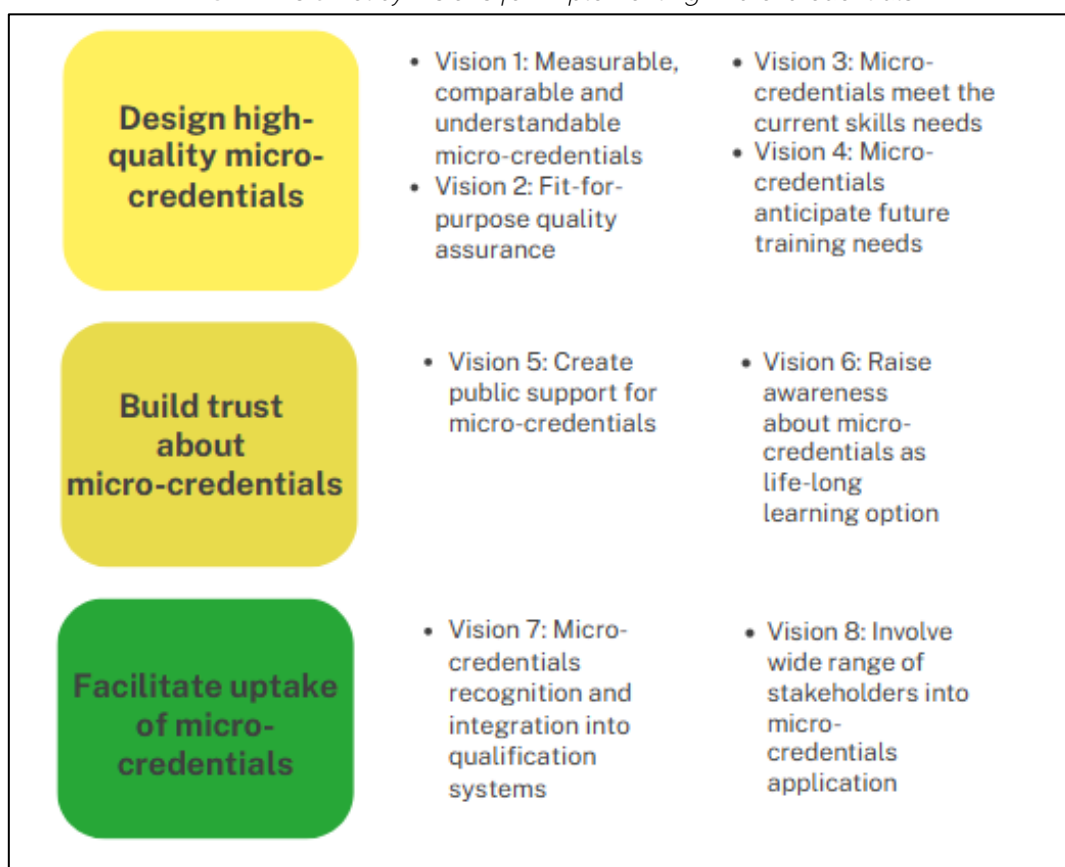


Fig.1 – Source: D3.1 Microcredential Policy Methodology⁴

Specifically, visions 1 to 4, which concern the development phase of micro-credentials, have been integrated into the micro-credential design process, while the other visions are more related to the implementation phase of micro-credentials.

The following table summarizes the methodological decisions implemented for each policy vision during the micro-credential development phase.

⁴ D3.1 Micro-credential Policy Methodology report - https://mastery-microcredentials.eu/wp-content/uploads/D3.1_MASTERY_Policy_Methodology.pdf

Table 2: MASTERY's visions and micro-credential development criteria

Visions	MASTERY micro-credential development criteria adopted
Vision 1: Measurable, comparable and understandable micro-credentials:	The design process integrates the following procedural framework: 1. ESCO: each of the 12 MASTERY micro-credentials is referenced to the European Skills, Competences, Qualifications and Occupations classification system. This ensures the use of standardized competence-based datasets and common descriptors across Europe, laying the foundations for mutual recognition and adopting a common standard from a perspective of certification through micro-credentials. 2. EQF compliance: learning outcomes are formulated according to principles specified in the EQF Recommendation (2017/C 189/03). Courses tailored to EQF levels 5 and 6: (advanced-specialised): since, according to the MASTERY approach, customization to the country-specific VET context is allowed, to maximise the expected positive impact of the testing phase, the EQF level for the courses piloted in Finland (by PJI), has covered the EQF level 4 (intermediate) as well, thanks to the cooperation with local VET providers specialised in the agrifood sector. 3. Digital certification system: the micoo https://micoo.io/ platform has been selected to manage the issuance of MASTERY digital micro-credentials. The platform supports MASTERY's requirement for digital certification infrastructure, enabling learners to demonstrate acquired green skills to employers through verifiable, tamper-proof digital badges that communicate specific competencies achieved through the 12 training pathways. This contributes to achieving comparability and interoperability with EU platforms and education stakeholder systems, aligned with the European Education Area principles for data portability and recognition.
Vision 2: Fit-for-purpose quality assurance	The EQAVET - European Quality Assurance in Vocational Education and Training framework indicators are adapted to MASTERY requirements. Implementation of these indicators supports adoption of common quality standards and promotes continuous improvement culture in training delivery through business-education partnerships, stakeholder engagement mechanisms, trainer capacity building, personalized learning provision, and systematic feedback loops for timely updating of training offers and support services. More in details, during the planning phase of the micro-credential, the key EQAVET descriptors incorporated into MASTERY methodology include: <i>Social partner and stakeholder participation in setting VET goals and objectives:</i> the extensive cooperation with stakeholders during the MASTERY needs analysis made it possible to outline the enabling characteristic of green skills, accelerating the definition of training priorities. <i>Established mechanisms for identifying labor market and societal training needs</i> MASTERY implements a "glocal approach", where courses are conceived to answer a set of core common skills need at EU level, to be localised to meet the peculiarities of the different ecosystems and target groups, in a delivery perspective. <i>Defined standards for recognition, validation, and certification of competences:</i> short courses designed by the partners use common tools (: 1) training syllabus templates 2) set of training materials templates, 3) design and implementation guidelines 4) reporting template programme). During the development of the training programmes, partners were advised to specify what results were expected to be achieved after participation in the training. Each course provides clear descriptions of the skills that students are

expected to achieve, thus allowing for the articulation of different validation tools for the recognition of acquired skills. The standardisation of certification has been consolidated both for the online training part (issuing a digital badge for correct answers to multiple-choice tests) and for the face-to-face and practical training part (practical tests, training through project work, etc.).

VET qualifications described using learning outcomes microcredential courses designed, by identifying and describing clear learning objectives, clear learning outcomes and well-structured assessment methods, to guarantee quality and transparency. Each partner oversees the design of the short training, according to the assignment, by defining LOs, training topics, assessment methods and tools for a proper evidence-based evaluation process, crucial for competencies' certification through micro-credentials.

Flexible VET program design responsive to changing labor market needs: taken into consideration in the design phase for future delivery, to allow participation to people having different needs (workers, entrepreneurs, students, VET professionals), according to a tailored approach to training.

Vision 3: Micro-credentials meet the current skills needs

To ensure alignment between the training offer and labour market needs, the bottom-up approach used by each partner to define training needs and direct communication between industry and training institutions are a distinctive feature of the MASTERY methodology. During the pilot phase, MASTERY implements pilot course performance indicators and satisfaction surveys targeting different stakeholder profiles. This process provides useful information for effective collaboration between companies and education providers in designing micro-credentials that meet current and future skills needs, while establishing sustainable partnerships.

Vision 4: Micro-credentials anticipate future training needs

Each MASTERY micro-credential is based on the validation of emerging skills as enablers of future scenarios for production systems, in which sustainability could become central to the production choices of the various sectors involved. The method used for this initial definition of the 12 MASTERY skills was consultation through national focus groups involving stakeholders and organisations representing industry, public skills intelligence systems

Furthermore, the methodological guidelines underlying the development of MASTERY micro-credentials include the following principles:

- Overall, a **blended approach to training was privileged** and considered one of the pillars of the MASTERY Training framework because the combination of online training, (through asynchronous e-learning), with onsite training can guarantee, on one side, flexibility and on the other side, can allow knowledge sharing among participants, cooperative learning and reinforcement of relationships and networking.
- **Inclusivity:** fostered thanks to a blended delivery mode and a variety of methodologies applied between online and onsite training (lessons/reading materials, tests/quizzes, hands on activities, case study analysis, problem and project-based learning sessions, content didactic videos, teamwork, etc., to meet different learning styles and maximise the accessibility to training for all.
- **Gender-sensitiveness in design:** gender-inclusive approach followed during the overall design of the training courses, by proposing female role models in the field of green innovation (e.g. interview to Rold representative in GS5 - Course, "Reduce waste and material outputs to support the green transition of local ecosystems, use of gender balanced examples in the development of the reading materials (online learning), etc.

- **Scalability:** each micro credentialled short course is self-consistent, but, at the same time, very much interconnected with others of the MASTERY CATALOGUE, to guarantee diversifies upskilling opportunities to targeted individuals, also in a perspective of further exploitation after the piloting foreseen in WP4.
- **Sector-specific courses** designed by partners having extensive expertise and coming from countries having a territorial vocation for those sectors, as visualised in Fig. 2

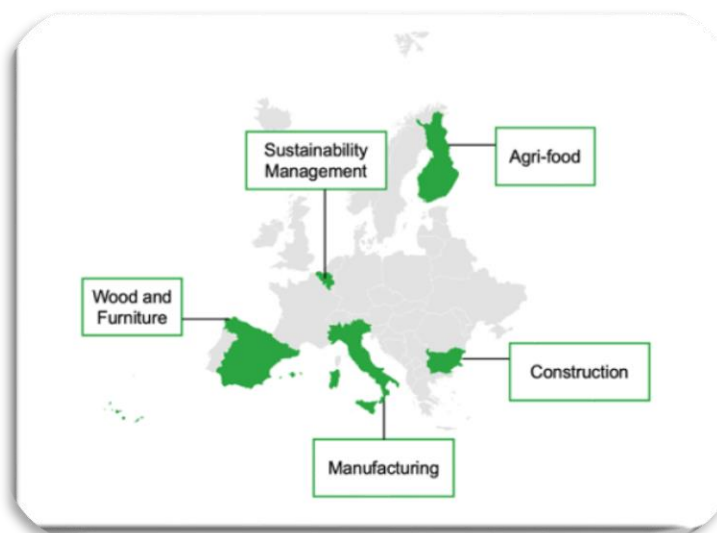


Fig.2 MASTERY Sectoral vocations of territories for training design

MASTERY 12 micro-credentials, with reference to the above-reported EQF levels, are short courses sized between the 24 to the 27 hours in total. Overall duration, as well as combination of online and onsite part, can be considered flexible and to be customised to the contexts and target groups, (Students, workers/adults, entrepreneurs/consultants/VET professionals).

In case of a training of 24 hours, n. 8 hours should have been delivered online, with related training materials accessible on the LMS, and 16 hours have should have been delivered face-to-face. Flexibility in the face-to-face training amount would allow high customization/localization to the various country-specific contexts.

3. Green Skills Training Syllabi

For each Green Skill, partners developed a short, specialised training course, as stated above, **EQF levels from 4 to 6**. The first step of the design phase was focused on the syllabi preparation, according to a common template partners developed and adopted. That template has been structured following the ECVET criteria, with the aim of counting on harmonised language, and descriptors within the overall MASTERY training framework, facilitating mutual understanding, testing and future replicability and transferability of the courses. Regarding the structure of the common template to describe the short courses, its main files are the following:

- **Training initiative title:** this field is devoted to entitling the course, with reference to the related Mastery Enabling Green Skill.

EQF Level: from 4 (intermediate) to 6 (specialised): the differentiation to the European Qualification Frameworks helps comparability among Education systems and supply chain, facilitating mutual recognition of competencies and credits

Proficiency level (foundation/basic, intermediate, advanced, high specialized level): this field gives information on how and at which extent of deepening level, the different training topics are faced

- **Expected learning outcomes:** this field is crucial to describe the achievements after the attendance of the course, in term of skills and capacities. According to the MASTERY strategic approach, the training design phase must respect quality criteria, first through the identification and definition of clear learning objectives and learning outcomes, second, and consequently, to define clear evaluation methodologies, tools to be used and assessment criteria. This rigour is foundational both for tailored and responsive training, and for the design/identification of Measurable, comparable and understandable micro-credentials (MCs) to be realised after attendance and assessment.
- **Overall duration/training time (in hours):** as stated above, the suggested duration of the MASTERY courses was 24-36 training hours, meaning a sufficient duration to face advanced-specialised topics related to green innovation, in agreement with the core needs expressed by companies and stakeholder engaged in the WP2 research. Through discussion, partners decided to leave this overall duration flexible, introducing this statement in the syllabi *"This overall duration might be adapted to the rules and standards for the release of Micro credentials in force in the different EU countries."* In fact, in the Table 2 below, reporting the whole set of the MASTERY course with reference EQF level and duration, it is possible to see that most of the courses have a duration of n. 24 hours, but some of them, specifically the one to be piloted in Finland, have a duration of n. 27 training hours, to respect the national rules on release of credentials. Moreover, some other courses have a duration of n. 25 training hours, namely the one developed and tested by Scuola Superiore Sant'Anna – SSSA (IT), due to the unit of measure equal to 25 hours for the assignment and recognition of ECTS. In short, this variability in duration is expression of a MASTERY methodological choice to design, develop and test a common training framework, with a high level of customization to local context and education supply chain requirements.
- **Training Methodologies:** as mentioned before, the adopted approach in MASTERY, considering the typology of Green Skills to be acquired by prior beneficiaries and in light of the expected target groups (VET professionals, entrepreneurs, University/HIGHER VET students, workers in need of upskilling) and the proficiency level of the courses (from intermediate to specialised), is to privilege experiential learning and problem-based learning (PBL). This helps to engage participants, starting from their own

previous expertise/experience, facilitate knowledge sharing and positive learning processes, especially in face-to-face training settings, where it is possible to cooperate and learn from peers. Moreover, in the case of workers, entrepreneurs, and VET professionals, PBL implies focusing the learning activity on complex problem solving, maximising an "hands on learning experience". Moreover, still in a delivery perspective, companies can offer learning experiences to learners, e.g. through challenge-based activities, hosting study visits and/or sharing laboratories/virtual laboratories for project-based learning or work-based learning. The strict cooperation with business and labour market operators is another essential pillar of the MASTERY framework, not only because the courses represent, as said, a concrete answer to detected prior skills demanded by companies to be able to ground the so-called "green transition", but also because a direct collaboration with these stakeholders guarantee the overall responsiveness of the training offers themselves. Finally, strong business-education partnerships will allow a continuous adaptation of the MASTERY Catalogue to the emerging needs of the reference sectors also after the project's life.

- **Mode of Learning:** as stated in the previous section, the mode of learning in MASTERY is blended, to combine asynchronous learning through the LMS and collaborative learning through the face-to-face sessions. This integration of different settings has been considered the most suitable to maximise effectiveness of training in delivering. Moreover, it responds to the MASTERY policy methodology recommendations (D3.1), assuming that microcredential courses develop according to a long-life learning perspective, boosting upskilling and reskilling processes among targets and individuals, thus, prioritization of blended training will allow to maximise flexibility in delivery, meeting the needs of the different targets, to tailor training opportunities themselves and be able to timely validate achievements and certificate competencies. The prioritization of hybrid modes must be designed in the development phase of the courses to integrate methodologies, contents, timing and integrate the different settings. With reference to training materials, this means to conceive a set of multichannel supports (e.g. presentations, videos, quizzes, etc.), then can be organically accessed through a customised Learning Management System (LMS). In term of duration of the online training part (asynchronous e-learning) its might be variable from 4 to 8 hours. Partners decided the overall amount with their trainers and experts, to better customise the courses to their contexts. As general principle, since the online part has been conceived in the MASTERY framework as self-consistent, but introductory to the topics and "preparatory" to the in-person training part, partners balanced the duration of the online training accordingly.
- **Assessment:** a summative evaluation has been adopted, in coherence with the blended approach followed and with the different methodologies applied. Moreover, to release Micro-credentials, it is essential to establish an evidence-based assessment: competence to be evaluated needs to be seen in action, so, practice is crucial to be able to evaluate and recognise competencies (not only knowledge). This evidence-based evaluation must be designed in the conception step of each training course/opportunity. Moreover, it is worthwhile to confirm, that business-education partnerships are essential for MASTERY, since the design phase of the training courses.
- **Certification and recognition:** The adopted certification scheme is the one of Micro credentials for Learning in agreement with the EU standard and recommendations. Thanks to the above-mentioned evidence-based assessment, the MASTERY LMS, integrated with the MICOO PLATFORM (see section 4 of this document), will release MCs through a specific procedure that guarantees coherency and impartiality. To facilitate recognition of achievements and certification of competencies valid at the EU level, the expected learning outcomes of each course have been linked to the ESCO descriptors, for "Measurable, comparable and understandable micro-credentials" as recommended by the Eu Commission and in agreement, again, with the MASTERY Policy methodology (D3.1).
- **Targets:** the MASTERY overall training framework is aimed to support upskilling processes so workers, entrepreneurs, VET professionals and HVET/University students. During the testing phase of the

framework, each partner organization, collaborating with local stakeholders, will recruit the target groups and organise the pilot delivery of around n. 2 courses per so-called "pilot site".

- **Delivery language:** the online training partes of the courses accessible through the LMS in asynchronous e-learning, have been developed in English, being the vehicular language of the project. Some content videos can have subtitles in English if realised in national language. All the training and supporting material for the delivery of the face-to-face training part will be available in English, stored in a dedicated area of the LMS. During delivery at local level, partners will choose, according to the needs of their target groups if delivering in English or in national language to respect, once again, the methodological principles of tailorisation and flexibility.

The list of the courses is reported in Table 3:

Table 3: MASTERY Green Skills Courses- EQF reference levels and overall duration

MASTERY Green Skill courses	EQF level
GS1: Select sustainable resource efficient approaches through the entire agri-food value chain (sector-specific skill: Agri-food)	EQF 4, 27 hours
GS2: Select environmentally friendly materials and components for buildings (sector-specific skill: Construction)	EQF 5, 24 hours
GS3: Design innovative, energy- and resource-efficient machines and systems for manufacturing processes (sector-specific skill: Manufacturing)	EQF 5, 24 hours
GS4: Cradle-to-cradle design (sector-specific skill: Wood and Furniture)	EQF 5-6, 24 hours
GS5: Reduce waste and material outputs (transversal skill)	EQF 5, 24 hours
GS6: Advise on sustainability certifications and standards (transversal skill)	EQF 6, 25 hours
GS7: Measure and report sustainability performance (transversal skill)	EQF 5, 24 hours
GS8: Ensure compliance with environmental legislation (transversal skill)	EQF 5, 16 hours
GS9: Educate on environmental sustainability concepts (transversal skill)	EQF 4-5, 27 hours
GS10: Implement circular, green, and socially responsible procurement (transversal skill)	EQF 5-6, 25 hours

GS11: Develop and implement joint sustainability initiatives (transversal skill)	EQF 5, 24 hours
GS12: Evaluate sustainable investment opportunities (transversal skill)	EQF 6, 24 hours

For a detailed (even concise) presentation of all the training syllabi, one per course, please see the ANNEXES s section.

4. MASTERY certification framework: release of micro credentials for learning (MCS)

According to the European Commission, a *micro-credential* "is a record of focused learning achievement verifying what the learner knows, understands or can do; includes assessment based on clearly defined standards and is awarded by a trusted provider, has standalone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning; and meets the standards required by relevant quality assurance".

Under the framework of the MASTERY PROJECT and in agreement with the **D3.1- Micro-credential Policy Methodology**, after piloting of the training courses and evidence-based assessment of achievements gained by attendees, MCs will be released through a digital platform (MICOO) which dialogues with the MASTERY LMS and will support the collection of valuable evidence for the assessment. More precisely:

- After attendance to the online training part, learners, passing the evaluation steps (i.e. tests/hands on activities and quizzes), will obtain a **badge**, validating and proving the new achieved knowledge
- After attendance to the face-to-face training part of the course, positive evaluation from practice (exercises, project-based activities, etc.) and validation of achievements, learners will receive **MCs**. To release MCs, evaluation of competencies, is requested. MCs will be realised through the MICOO platform, properly customised to MASTERY, by the Ed – Tech provider, Learning Digital. See Figure 4 and 5 below.

The reference standards for evaluation and certification of achievements (competencies), are the ones of the ESCO Data Base. Since the design phase of the course, paraters, besides the conception of Learning Objectives, contents and expected outcomes, liked them with the ESCO descriptors as visualised in the example below (extracted from GS5 Course, "Reduce waste and material outputs to support the green transition of local ecosystems):

Table 4 Connection with the ESCO Data Base

Modules	Learning Outcomes	Link to ESCO
Module 1	• Define waste typologies across economic sectors and theories (e.g. concept of waste in lean manufacturing) • Describe the differences between linear economy and circular economy, the principles/pillars of CE and the benefits for communities and environment	Waste classification systems (K) "Knowledge of categories (e.g. industrial, electronic, chemical) and their environmental hazards (e.g. toxicity, GHG emissions)." Circular Economy (K): The circular economy aims to keep materials and products in use for as long as possible, extracting the maximum value from them while in use and recycling them at the end of their life cycle. It improves resource efficiency and helps to reduce the demand for virgin materials.

4.1 Evidence-based assessment

During the delivery of each training course, partners are asked to assess the achievements of the learners, coherently with the trained topics and the adopted methodologies. To this purpose, from the design phase of the training, partners are asked to define, besides clear learning outcomes, also the ways/approaches to be followed to evaluate them.

Through a **summative approach to evaluation**, crosscutting to the whole training path, partners are asked to collect evidence of achievements that will be uploaded on the MASTERY PLATFORM in the case of on-site learning sessions and directly generated by the LMS in the case of tests after the asynchronous e-learning. Once collected, the set of evidence will be analysed by a "pool of MASTERY experts", properly trained, identified by partners with the support of Learning Digital.

The picture below shows both **the training badge for self-paced e-learning and MCs released by the MICOO platform**, dependently on the results of the evidence-based assessment. The MICOO Platform is connected to the ESCO Database and suggest Competence descriptors accordingly.



How a Mastery badge and microcredential will look like?



Figure 3- MASTERY Badges and Microcredentials

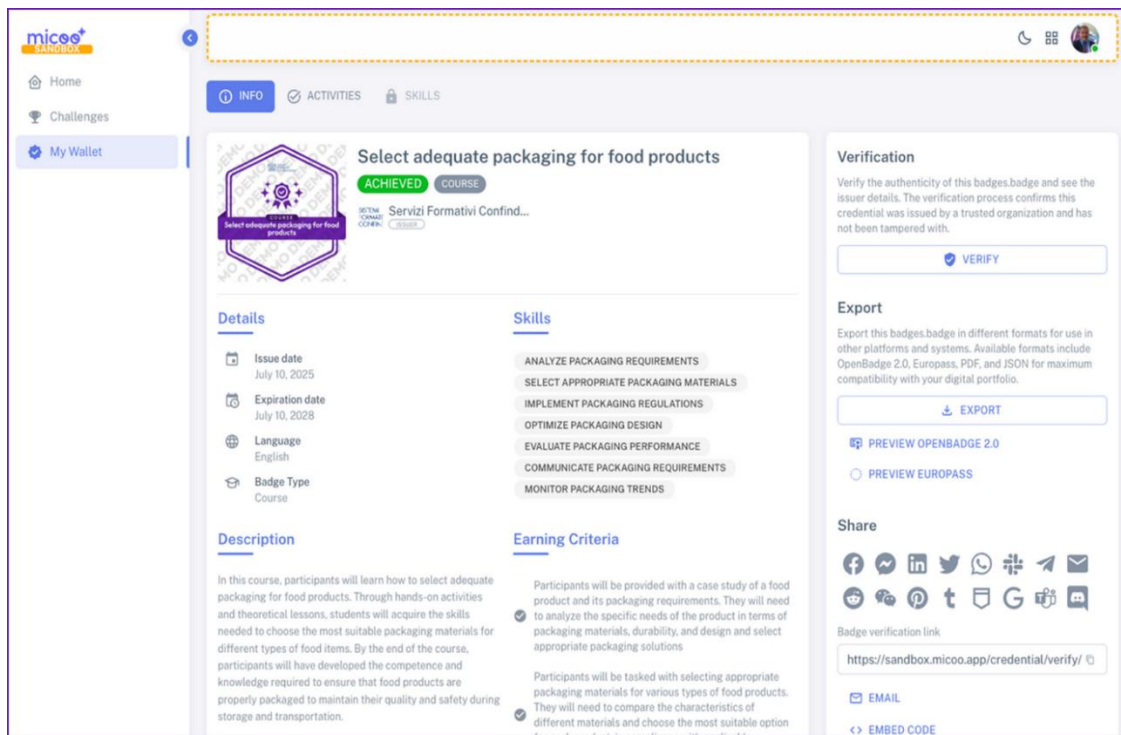


Figure 4- MICOO Platform

4.2 Release of Micro credentials (MCs): endorsement framework

To guarantee impartiality in the overall micro credentials issuing process, the MASTERY project follows the endorsement framework foreshadowed by the **World Alliance for Micro credentials (WAM)**, which plays a pivotal role in shaping global standards for micro credentials by serving as an endorsing body rather than an awarding body. While awarding bodies confer formal qualifications, endorsing organisations validate the credibility, quality, and industry relevance of learning pathways, ensuring alignment with evolving workforce demands. By adopting this approach, WAM strengthens trust among stakeholders, fosters collaboration across sectors and enhances the recognition of micro credentials as a vital component of lifelong learning and professional development.. The endorsement process visualized below (fig. XXX), is able to guarantee issuers' integrity and governance, together with continuous check and evaluation, together with verification of curricula responsiveness and quality.

The principles followed for the recognition and release of micro-credentials to guarantee international validity, recognition and alignment, are, respectively:

(Microcredentials),

- Are transparent, with well-defined learning outcomes linked to recognized qualification frameworks.
- Follow rigorous assessment and verification methods for credibility.
- Enable stackability, supporting progression within formal qualification systems.
- Maintain cross-border portability and comparability, ensuring international validation.
- Responding to industry demand, demonstrating relevance in emerging and extant skill areas.

Fon more details concerning overall governance, structure and integrity of MCs certification process, check **Annex 1 – Integrated Quality Endorsement Framework**.



Figure 5- Impartiality in the recognition of MCs adopted in MASTERY

5. The MASTERY Learning Management System (LMS)

The MASTERY LEARNING Platform is accessible for all potentially interested stakeholders and users from the following domain: [Mastery – Education](#)

The picture below (Figure 7), shows the overall development process and quality check management followed by the MASTERY Consortium for the preparation of the learning management Systems and the finalisation of the set of 12 short micro credentialled courses.:

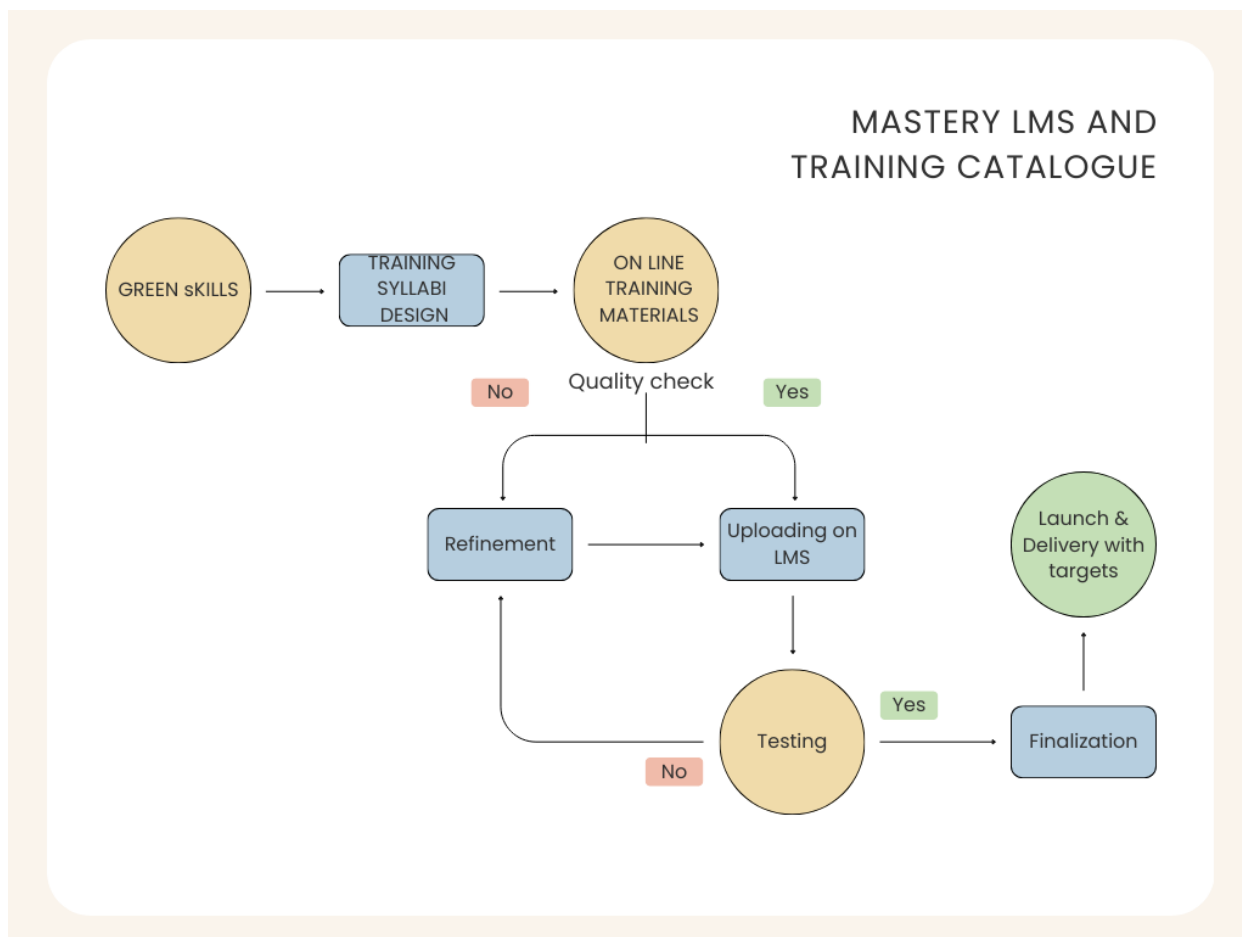


Figure 6- MASTERY LMS and Training Catalogue _ development process and quality checks

As regards the overall design criteria of the LMS, the Mastery Training Platform respected the following:

- **User-friendliness:** the whole virtual environment has been developed to guide learners step by step and make courses and resources as much accessible as possible. By enrolment, each learner will receive personal credentials to access the set of courses and to select them, accordingly, will creating a personal training dashboard.
- **Open Access:** The Platform is a customization of Learn Press, open access platform for e-learning courses.
- **Respect of the MASTERY Visual Identity:** the LMS is self-standing but connected with the MASTERY web site (see "project label from the main menu).
- **Digital scaffolding:** the overall organization of the training contents have been displayed to have self-explanatory training, also considering the asynchronous e-learning methodology adopted (learner alone attending the different training sessions, self-managing time slots and evaluation

steps). Moreover, the LMS suggested complementary courses, to stimulate further upskilling (see Fig. 10 below). With regard to the typology of learning resources, the MASTERY courses have the following:

In the Table 3 following, the set of training resources per typology, peculiar to the MASTERY courses, are reported:

Table 5 – The training resources of the MASTERY courses

RESOURCE	DETAILS
Video Introduction	There might be two types of introductory videos: • Teaser: a very brief, engaging video introducing each module's key topics, shortly providing context, aimed at marketing the course and stimulating curiosity • Advance Organizer Model (AOM): a slightly longer video, made by the author and/or scientific coordinator of the course, setting the tone for the learning journey, explaining the context, highlighting the key elements and learning outcomes of the course • Quantity: 1 teaser, 1 advanced organizer per course
Content Videos	• These are short, focused videos delivering core concepts, theories, and practical insights related to each key course subject matter. These videos promote an overall comprehensive understanding of the key concepts. • Quantity: at least n. 1 content video per course
Reading Material	• Core of the training contents subdivided into learning units. Possible integration of the created content with external resources such as books, articles, or research papers that deepen understanding, offering supplementary insights beyond video content for a well-rounded exploration • Quantity: around n. 5 learning Units of around n. 5 pages each
Additional Resources	Supplementary materials, such as TED Talks, case studies, or webinars, as well as tutorials showcasing existing tools, examples and solutions, providing further exploration avenues for those interested in delving deeper into specific topics covered in the module
Hands-on Activities	Practical exercises or assignments designed to apply theoretical knowledge, fostering active learning and skill development through real-world applications. Evaluation has a formative focus

RESOURCE	DETAILS
Test	Assessments, typically quizzes, evaluating understanding of module content, reinforcing key concepts and ensuring participants grasp essential information. b. Evaluation has a summative focus, and it is automated


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Project

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Connect with us   

Figure7- MASTERY LMS – Home Page

Registration/Access

Teaser (Intro video)

Short presentation of the course

Key info on the course and "start now" button

Advanced organizer, a video providing key info on the course

Organization of the contents per module and learning unit and activity

References and deepening materials

Final Evaluation through quizzes with randomized questions and formative feedback

Figure 8- Course Lay out

Courses you might be interested in



Sustainable Practices In Green Environments

This training covers ecology basics, The Sustainable Environmental Construction (KESV) criteria, native plants, legislation, sci...

[▶ Start Learning](#)



Design Innovative, Energy- And Resource-Efficient Machines And...

This advanced course is designed to explore the fundamentals of smart and sustainable manufacturing and better understand how to adopt clear...

[▶ Start Learning](#)



Reduce Waste And Material Outputs

The advanced course aims at facing the foundational concepts and implications of the circular transition, namely the transition from linear...

[▶ Start Learning](#)

Figure 9- The Platform suggests further upskilling opportunities on the MASTERY CATALOGUE

6. The **MASTERY Training piloting: integration between online and onsite training**

As specified above, in the previous sections of this document, MASTERY recommends a blended approach to training delivery under WP4, to increase attractivity and flexibility, considering the potential target groups of participants (workers, VET Students, University students, Entrepreneurs, VET professionals).

The face-to-face training might have variable extension, depending on the overall duration of the training courses (from 16 to 27 hours). As described above, this variable duration (see Table 2), represents an answer of the project to the local context needs: for example, for Finland, that will test courses referred, respectively to Green Skills n. 1 and 9,, the duration of the course to be tested is 27 hours, due to the mandatory national standards to release Micro-credentials for Learning – MCs. Moreover, since, across to the different MASTERY partner countries the regulatory framework can vary as well and partners might have diversified needs in delivery, also the in-person training part might have diverse duration. Besides, to make the face-to-face training much responsive as possible, from the design phase, partners have worked assuming the following:

- the online training part should be conceived empowering and preparatory to the face-to-face part.
- The face-to-face part should be aimed at going in depth with the core concepts and contents, offering learners the opportunity to practice according to the different topics, (see Fig. 11 below)..
- The MASTERY TRAINING COURSES should bring learners to achieve Microcredentials for learning (MCs), releasable only after checking their possession of competencies, meaning to foresee an evidence-based and practice-based assessment,

Given these premises, the face-to-face training part of the MASTERY COURSES provides an essential contribution to reach the training goals and the identified EQF levels (5 and 6). Being EQF 4-6 level short course, namely intermediate-specialized initiatives aiming at making learners achieve competencies they will immediately mobilize and apply in different contexts after the end of the courses themselves, an [experiential learning approach](#), is suggested.

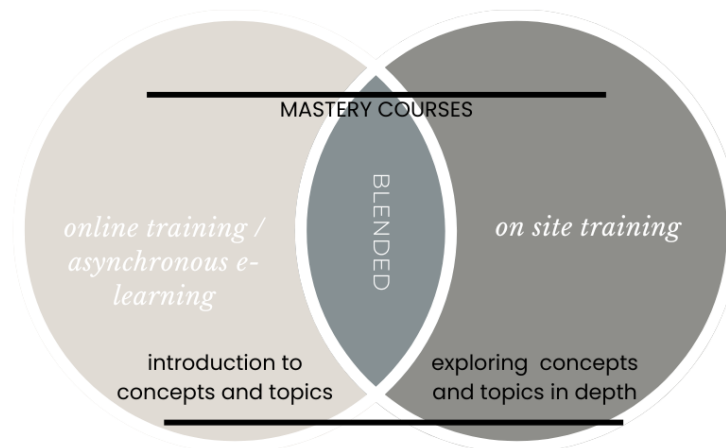


Figure 10- Different focus of online and onsite training in the MASTERY approach

Furthermore, **foundational principles of adult learning** inspire the face-to-face training sessions, namely:

- **Focus on Relevance:** Adults are motivated to learn when the content is immediately applicable to their work or goals. Theory overload, to be avoided, stay focus on real-world applicability
- **Co-creation on experience:** Participants bring valuable knowledge from their own contexts. Mobilize and exploit their own experience as part of the learning process.
- **Self-direction:** Adults prefer to decide their learning. Trying to engage them in the process, Top-down approaches, to be avoided.
- **Stay problem-centred, not content-centred:** Adults engage in solving problems more than memorizing or discussing theoretical concepts.

In terms of suggested training methodologies, in accordance with the privileged Experiential learning approach, they might be the following (not exhaustive list)

- **short presentation/lesson:** they can be useful to introduce concepts or to share theoretical hints with the learners, to introduce the topic of the day/of the session/s.
- **Brainstorming/guided discussion:** this methodology can be useful to introduce the training day/session and the topic, also before sharing a short presentation, as warming up activity. Guided discussion can be also used to animate discussion, going in depth of a key topic.
- **Case analysis/study:** this methodology is essential to share good or bad practice in relation to a topic/theme to be faced. Direct connection with real case studies reinforces the applicability of

achievements and increases engagement of participants, while stimulating self-reflection and knowledge sharing. Depending on the target groups, a possible powerful variant of this methodology is the **self-case**, where one participant shares his own experience as material to be studied, for example an entrepreneur.

- **Group exercise/simulation:** This methodology to adopt a complex problem-solving approach to real world cases. This grounds the learning experience to immediately following applicability and transferability of achievements in work environments.
- **Project-based learning/challenge-based learning:** It is a hands-on educational approach where people gain knowledge and skills by working for an ongoing, extended project to investigate and respond to a complex question, problem, or challenge. The main phases of a PBL process are: 1) question, 2) need to know-research 3) further investigation/enquiry 4) collaborative work 5) sharing and feedback collection 6) further improvement and finalization.

The above-mentioned variety of methodologies helps maintain attention of participants, and support different learning styles, while guaranteeing inclusivity. Moreover, this kind of active/experiential methodologies can bring participants to produce works representing evidence of their achievements and proving their competencies in a perspective of validation and certification through MCs, according to the procedure described above.

7. Reference links

- MASTERY Platform: [Mastery – Education](#)
- List of the available courses: [Courses - Mastery](#)
- MASTERY WEB SITE: [Mastery – Micro-credentials Empowering Sustainable Skills](#)
- MICOO Platform: [micoo - microcredential made simple - micoo](#)
- [MASTERY_Research_Report_D2.2_compressed.pdf](#)
- [MASTERY Policy Methodology](#)

8. Annexes – 12 MASTERY micro-credentials syllabi

GS1 - Sustainable practices in green environments

Training initiative (title) <i>(ex. Expert in eco-design for circular economy in the textile and fashion industries)</i>	Sustainable practices in green environments The Sustainable Practices in Green Environments training (EQF Level 4, basic/intermediate) lasts 27 hours and covers basic ecology, The Sustainable Environmental Construction (KESY) criteria, native plants, legislation, soil food web, and practical case studies. Learners gain knowledge, skills, and competencies for sustainable design, work independently or in teams, and receive micro credentials upon evidence-based assessment.
EQF Level	4-5
Proficiency level <i>(foundation/basic, intermediate, advanced, high specialized level)</i>	Intermediate-advanced
Expected learning outcomes <i>(By the end of this course, the learners will acquire</i>	Knowledge: Understand the basics of ecology and know how to apply them in a built environment. Know the key KESY (Sustainable Environmental Construction) criteria, the principles of using natural plants, legislation concerning green environments, and the basics of the soil food web. Skills: Can identify the most common forest and green environmental habitats and/or vegetation and assess their suitability for different environments. Able to recognize interactions between species and understand the importance of soil microbes for the functioning and well-being of green environments. Competence: Able to follow instructions in accordance with the principles of sustainable development in the design and maintenance of green environments. Able to perform work tasks independently or as part of a work group and apply what they have learned in practical situations.
Overall duration/training time (in hours)	27 hours
Training Methodologies	• Self-learning • Case-based learning • Moderated discussions
Mode of Learning <i>(Blended, online, onsite)</i>	Blended, onsite and online
Assessment	Evidence-based course completion and feedback
Certification and recognition	Micro credentials for learning (MCs).
Targets	Students, citizens and professionals in landscaping industry
Delivery Language/	Finnish/English

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	Pre-assignment	1,5
MODULE 2	Basics of ecology and their application in built-up areas, KESY criteria in practice. Legislation governing activities, diverse forests, use of natural plants: Rauma case study and Riihimäki case study	20
MODULE 3	Online self-study material to support learning, Soil Food web	4
MODULE 4	Evidence-based course completion and feedback	1,5

GS2 - Select environmentally friendly materials and components for buildings (sector-specific skill: Construction)

Training initiative (title) (ex. <i>Expert in eco-design for circular economy in the textile and fashion industries</i>)	Sustainable construction materials selection
EQF Level	EQF 5
Proficiency level (<i>foundation/basic, intermediate, advanced, high specialized level</i>)	Advanced
Expected learning outcomes (<i>By the end of this course, the learners will acquire</i>)	After attendance on the short course, learners will be able to: • Understand the difference between linear and circular economy • Understand the principles of sustainability and circular economy in the context of the construction industry • Understand the principles of green and circular buildings • Differentiate environmentally (eco) friendly construction materials and components • Understand the framework of eco-design • Define the principles of the Construction Product Regulation and the Digital Product passports • Explains the potential of digital tools for selection of environmentally friendly materials • Apply digital tools to support the selection of environmentally friendly materials and components. • Analyse suitability of construction materials in circular construction processes • Interpret information regarding cost, performance and sustainability of environmentally friendly materials
Overall duration/training time (in hours)	24 hours (4 hours online training, 20 hours onsite training)
Training Methodologies	• Theoretical inputs • Sectoral/cross-sectoral case studies and insights • Self-learning • Moderated discussions • Case-based learning
Mode of Learning (<i>Blended, online, onsite</i>)	Blended learning Through online modules 1 and 2 learners will acquire theoretical knowledge about sustainability and circular economy in the construction sector, principles of green and circular buildings and the fundamentals of product certification. The in-person modules 3, 4, 5 and 6 will build practical knowledge on the certification of building materials, the usage of digital tools for selecting environmentally friendly materials and through case-based learning and exploration.
Assessment (ex. <i>test</i>)	Summative evaluation • Tests, • Quizzes • Analysis of case studies

Certification and recognition	Micro credentials for learning (MCs). After attending the online training part (4 hours distributed in 2 modules), participants will: • Understand the principles of sustainability and circular economy in the context of the construction industry. • Differentiate sustainable construction materials and components. After positive evaluation of these achievements, participants will receive a badge. After attending the in-person training part (20 hours distributed in 4 modules), participants will: • Compare construction materials based on their product certifications • Recognize the potential of digital tools for selection of environmentally friendly materials • Apply digital tools to support the selection of environmentally friendly materials and components. • Analyse suitability of construction materials in circular construction processes • Interpret information regarding cost, performance and sustainability of environmentally friendly materials across the phases of the construction process After attendance and positive evaluation of the entire training path, participants will receive microcredentials.
Targets	• VET students, having an as a minimum an upper-secondary school degree, employees, entrepreneurs 1. Living in the country of delivery or in the EU Area 2. English Entry Level :B2
Delivery Language/	English During the implementation of the onsite training part, providers can evaluate the delivery in their national languages according to the needs of their target beneficiaries/groups.

GS3- Design energy and resource-efficient machines and systems for manufacturing processes

Training initiative (title) (ex. Expert in eco-design for circular economy in the textile and fashion industries)	Design energy and resource-efficient machines and systems for manufacturing processes
EQF Level	5
Proficiency level (foundation/basic, intermediate, advanced, high specialized level)	Advanced/specialized
Expected learning outcomes (By the end of this course, the learners will acquire	After attendance on the short course, learners will be able to: • Define and interpret the sustainable transformation of Advanced Manufacturing • Identify drivers and factors influencing company-specific sustainable manufacturing transformation processes • Oversee the design and development of green machines and systems compliant with the reference regulation in force • Cooperate to performance management analysis and evaluations at company level.
Overall duration/training time (in hours)	24 training hours (n. 8 hours e-learning, n. 16 hours face-to-face training). This overall duration might be adapted to the rules and standards for the release of Micro credentials in force in the different EU countries.
Training Methodologies	• Theoretical inputs • Sectoral/cross-sectoral case studies analysis and testimonies • Self-learning • Discussion/debate • Inquiry-based/problem-based learning
Mode of Learning (Blended, online, onsite)	Blended Through online learning learners will acquire a clear knowledge about • Foundational concepts of sustainable manufacturing, Smart Manufacturing and Green machines. • Reference regulation framework at the EU and national level boosting sustainable management of AM supply chain and the eco-design of manufacturing products.
Assessment (ex. test)	Summative evaluation • Tests, • Quizzes • Production (phenomena analysis, reporting, etc.)
Certification and recognition	Micro credentials for learning (MCs).

Targets	• Entrepreneurs, consultants, Higher VET students, professionals. • English proficiency level recommended: at least B2
Delivery Language	English. During the implementation of the onsite training part, providers can evaluate the delivery in their national languages according to the needs and the peculiarities of their target beneficiaries/groups.

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	The sustainable transformation of Advanced Manufacturing (AM)	8
MODULE 2	Design energy and resource-efficient machines and systems for manufacturing processes	16

GS4: Cradle-to-cradle design

Training initiative (title) (ex. Expert in eco-design for circular economy in the textile and fashion industries)	Cradle-to-Cradle design for sustainable furniture production
EQF Level	EQF 5–6 (intermediate to advanced)
Proficiency level (foundation/basic, intermediate, advanced, high specialized level)	Advanced (specialised skills in eco-design and circular economy for furniture)
Expected learning outcomes (By the end of this course, the learners will acquire	By the end of the course, the learner will be able to: • Understand the key principles and benefits of the circular economy and how industrial symbiosis fosters resource efficiency and waste reduction among collaborating industries. • Apply cradle-to-cradle thinking to product design, enabling easy disassembly and modularity to facilitate repair, reuse, and recycling. • Understand a basic life cycle assessment to evaluate the environmental impacts of a product or process from raw material extraction to end-of-life disposal. • Identify and assess innovative materials that enhance circularity by improving recyclability, durability, and sustainability in product design. • Utilize digital software and tools to support eco-design practices, including environmental impact analysis and optimization of resource use. • Recognize relevant standards and certifications that validate circular economy practices and ensure compliance with environmental regulations. • Identify business models that promote circularity.
Overall duration/training time (in hours)	24 hours (8 hours online + 16 hours onsite)
Training Methodologies	Online (asynchronous): video lectures, quizzes, case studies, theoretical content. Onsite workshops: practical exercises, theoretical content.
Mode of Learning (Blended, online, onsite)	Blended (online for theoretical knowledge + onsite for applied skills)
Assessment (ex. test)	QUIZ Multiple choice with single/multiple correct answers
Certification and recognition	Recognition and certification of achievements through Digital Micro credentials for learning (MCs schemes)
Targets	VET students (technical/industrial design) Furniture designers and manufacturers Sustainability officers in the wood/furniture sector English Entry Level: B2 Other requirements might be defined at local/national level by the provider, depending on the context reference rules.

Delivery Language/	English
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Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	Fundamentals of Circular Economy and Industrial Symbiosis	3.5h (online)
MODULE 2	Cradle to cradle approach and design for disassembly and modularity	5h (onsite)
MODULE 3	LCA (Life Cycle Assessment) fundamentals	3h (online)
MODULE 4	Innovative materials in circular design	3h (online)
MODULE 5	Digital tools for eco-design	4h (onsite)
MODULE 6	Standards and certifications for circular economy	1.5h (online)
MODULE 7	Business models for circularity	4h (blended)

GS5 - Reduce waste and material outputs to support the green transition of local ecosystems

Training initiative (title) (ex. <i>Expert in eco-design for circular economy in the textile and fashion industries</i>)	Reduce waste and material outputs to support the green transition of local ecosystems
EQF Level	5
Proficiency level (<i>foundation/basic, intermediate, advanced, high specialized level</i>)	Advanced/specialized
Expected learning outcomes (<i>By the end of this course, the learners will acquire</i>)	After attendance on the short course, learners will be able to: • Describe impacts generated on socio-economic and environmental ecosystems by linear production systems and economy models • Describe the pillars of circular economy and its benefits for people, planet and communities compared to linear economy • Describe how digitalization of production processes can boost the green transition of companies and ecosystems • Foreshadow the steps to be followed to implement a waste management strategy at company level, in compliance with the law • Identify new recycling opportunities for industrial waste • Read and interpret the framework regulation for waste management and circular economy transition • Identify valuable sources of information to interpret dynamics of secondary raw materials and recyclables markets at EU and national level
Overall duration/training time (in hours)	24 training hours (n. 8 hours e-learning, n. 16 hours face-to-face training). This overall duration might be adapted to the rules and standards for the release of Micro credentials in force in the different EU countries.
Training Methodologies	• Theoretical inputs • Sectoral/cross-sectoral case studies analysis and testimonies • Self-learning • Discussion/debate • Inquiry-based/problem-based learning
Mode of Learning (<i>Blended, online, onsite</i>)	Blended [Through online learning learners will acquire clear knowledge about the circular transition (circular economy principles and circular business models implications). This will be achieved first through the first module, fully online. Through the online session of the second module (n. 4 hours in total out of the 20), learners will achieve a clear understanding of the EU waste hierarchy according to the EU Waste Framework and the fundamentals of circular design and LCA approaches].
Assessment (ex. <i>test</i>)	Summative evaluation • Tests, • Quizzes • Production (phenomena analysis, reporting, etc.)
Certification and recognition	Micro credentials for learning (MCs). After attending the online training part (n. 4 hours distributed through MODULE N. 1 AND MODULE N. 2), participants will: • Have a clear understanding of the socio-economic and environmental impact of linear business models

	• Have a clear understanding of the main differences between linear and circular economy models • Have a clear understanding of prior societal challenges concerning waste • Know waste management and reduction virtuous practices/case studies. After positive evaluation of these achievements, participants will receive a badge. After attendance and positive evaluation of the entire training path, participants will receive microcredentials.
Targets	• Entrepreneurs, consultants, Higher VET students, professionals. • English proficiency level recommended: at least B2
Delivery Language/	English. During the implementation of the onsite training part, providers can evaluate the delivery in their national languages according to the needs and the peculiarities of their target beneficiaries/groups.

Modules of the initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	The circular transition	4
MODULE 2	Digital circular economy and waste management strategies	20

S6: Advise on sustainability certifications and standards

Training initiative (title) (ex. Expert in eco-design for circular economy in the textile and fashion industries)	GS6: Advise on sustainability certifications and standards
EQF Level	EQF 6 (at least a bachelor's degree is required)
Proficiency level (foundation/basic, intermediate, advanced, high specialized level)	Advanced-specialised
Expected learning outcomes (By the end of this course, the learners will acquire	By the end of the course, the student will be able to: • Understand the differences between voluntary and mandatory certifications, the differences between product and process certifications, and the related objectives. • Understand the basic content of the main EMAS and ISO 14001 certification schemes and their business benefits. • Understand the content of the CSRD, ESRS, and ESG standards. • Understand the phases of a third-party environmental certification process, renewal procedures, and the principle of continuous improvement. • Understand the concepts of sustainability reporting and environmental footprint.
Overall duration/training time (in hours)	25 hours of training - 8 online and 17 in-person (of which 8 homework/project work)
Training Methodologies	Lectures, simulation of a certification process, group work
Mode of Learning (Blended, online, onsite)	Blended
Assessment (ex. test)	Online test (ongoing) Final test simulating a certification process
Certification and recognition	Recognition and certification of achievements through Digital Micro Credentials for learning (MCs schemes)
Targets	• VET students • Procurement officers • Entrepreneurs • Organisations' active workforce • Sustainability managers • Public administration staff • English Entry Level: B2 • Other requirements might be defined at local/national level by the provider, depending on the context reference rules
Delivery Language	English (Italian subtitles)

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	Environmental certifications	16
MODULE 2	Audit process	8

GS7 Measure and report sustainability performance

(NB: due to evolving reference legal framework at the EU level at the time of course design, this training, with specific reference to objectives and, contents and expected LOS, might be change during the project's life)

Training initiative (title) (ex. Expert in eco-design for circular economy in the textile and fashion industries)	Measure and report sustainability performance
Brief description	This course is aimed at developing the most critical competencies needed to start measuring and reporting sustainability performance in manufacturing organizations, focusing on CSRD compliance and practical implementation skills.
EQF Level	5
Proficiency level (foundation/basic, intermediate, advanced, high specialized level)	Advanced/specialized
Expected learning outcomes (By the end of this course, the learners will acquire	After attendance on the (online/in presence) short course, learners will be able to: • Know and list (at least 3 of) the CSRD/ESRS requirements and identify (at least 2 of) the mandatory disclosures for manufacturing • Describe metrics and evaluation methods for assessing the sustainability of various system components • Know how to apply and calculate fundamental ESG KPIs using standardized methodologies • Implement basic data collection systems for sustainability metrics • Prepare compliant sustainability report sections with proper documentation
Prerequisite-	• Working knowledge of manufacturing processes • Basic Excel/data analysis skills • Familiarity with quality management systems (ISO 9001 beneficial) • English proficiency level recommended: at least B2
Overall duration/training time (in hours)	24 training hours (n. 8 hours e-learning, n. 16 hours face-to-face training)
Training Methodologies	• Theoretical inputs • Sectoral/cross-sectoral case studies analysis and testimonies • Self-learning • Discussion/debate • Inquiry-based/problem-based learning • Project work
Mode of Learning (Blended, online, onsite)	Blended
Assessment (ex. test)	Summative evaluation • Tests, • Quizzes • Production (phenomena analysis, reporting, etc.)
Certification and recognition	Micro credentials for learning (MCs)

Targets	• Entrepreneurs, consultants, Higher VET students, professionals • Manufacturing professionals, quality managers, plant engineers, and consultants who need rapid competency development in sustainability reporting
Delivery Language/	English. During the delivery of the onsite training part, providers can evaluate the delivery in their national languages according to the needs and the peculiarities of their target beneficiaries/groups.

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	Sustainability reporting: foundation and regulatory framework	6
MODULE 2	Sustainability reporting: measures and implementation practices	18

GS8 - Circular economy policies and funding navigator

Training initiative (title)	Circular economy policies and funding navigator
Brief description	This course aims to enable public administration technicians and SME professionals to understand how main EU circular economy policies can enable and facilitate business model innovation and operational transformation, moving beyond compliance to leverage legal frameworks for competitive advantage.
EQF Level	5
Proficiency level	advanced
Expected learning outcomes	After completing this course, learners will be able to: - Analyze circular economy policies to identify business opportunities and innovation pathways - Map regulatory frameworks to specific business model transformation opportunities in SME contexts - Develop business cases for circular economy investments based on circular economy incentives and market mechanisms - Conceptualize transition strategies that leverage legislation to drive operational efficiency and circular practices - Develop business cases for circular economy investments based on regulatory incentives and market mechanisms - Advise SMEs on strategic positioning within evolving circular economy policy landscapes
Prerequisites	- Understanding of business model fundamentals and value proposition development - Basic familiarity with EU regulatory frameworks and directive structures - Basic knowledge of environmental concepts (beneficial but not mandatory) - English proficiency level: minimum B2
Overall duration/training time (in hours)	16 training hours (8 hours e-learning, 8 hours face-to-face)
Training Methodologies	- analysing EU circular economy legislation to identify business implications and opportunities - examining real company cases that have successfully leveraged/adapted to/been impacted by circular economy regulations - working through <i>what if</i> situations where SMEs face new regulatory requirements and need strategic responses - project work on opportunity assessments and recommendations for real or simulated SME cases
Mode of Learning	Blended (online; face-to-face workshop)
Assessment	- test and quizzes (summative assessment for the online part) - project work (workshop assessment)
Certification and recognition	MASTERY Micro-credentials for learning (MCs) - GS8 Circular economy policy navigator
Targets	- Public authority technicians facilitating circular economy initiatives - Business advisors and consultants supporting SME circular transitions - Regional development agency professionals - SME managers and sustainability coordinators

Delivery Language	English. During onsite training delivery, trainers may adapt content delivery to national languages according to local needs and target group requirements.
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Modules of the initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	EU circular economy policies landscape	3
MODULE 2	Key leverages of circular economy business model families	3
MODULE 3	Circular economy public funding landscape	2
MODULE 4	Sector focused circular funding and project development	8

GSg: Educate on environmental sustainability concepts

Training initiative (title) <i>(ex. Expert in eco-design for circular economy in the textile and fashion industries)</i>	GSg: Educate on environmental sustainability concepts (transversal skill).
EQF Level	Part 1: Level 4 (online course) Part 2: Level 5 (in-person learning)
Proficiency level <i>(foundation/basic, intermediate, advanced, high specialized level)</i>	Part 1: foundation/ basic Part 2: intermediate-advanced
Expected learning outcomes <i>(By the end of this course, the learners will acquire)</i>	By the end of this course the learners will acquire • Basic knowledge about core principles of sustainable development and planetary boundaries • Basic knowledge of the green transition and the policies guiding it. • What are the driving forces behind the need for a green transition • The recognition of the power of diversity in nature, culture, and knowledge, including recognizing the value of traditional and indigenous knowledge systems • The importance of adopting a holistic perspective that recognizes the oneness of all things, rather than the opposition between human beings and nature. • Skills and competences to view our planet systemically and identify impact, relationships and the interconnectedness between different actors and environments. • Skills and competences to identify opportunities to act for sustainability in their own environment • Skills and competences to evaluate own worldview and relationship to nature and the future Key concepts: Sustainable development, Agenda 2030, biodiversity, anthropocene, circular economy, Green Skills, Green competences, GreenComp,
Overall duration/training time (in hours)	8 hours
Training Methodologies	Reading, videos, quiz, reflection exercise
Mode of Learning <i>(Blended, online, onsite)</i>	Online
Assessment <i>(ex. test)</i>	Module-based quiz or reflection exercises
Certification and recognition	Microcredential
Targets	Upper secondary vocational degree students and the professionals in the workinglife
Delivery Language/	English

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
<i>Part 1 Online course (Module 1-4)</i>	Cultivating green skills for a sustainable planet, part 1	
MODULE 1	Core principles of sustainability	2 hours online
MODULE 2	The Green Transition: What is it and how can we make it happen?	2 hours online
MODULE 3	Policies guiding the Green Transition	1 hours online
MODULE 4	Finding agency for the Green Transition	3 hours online
<i>Part 2. In-person Learning</i>	Cultivating green skills for a sustainable planet, part 2	
MODULE 5	Envisioning sustainable futures: • futures literacy • skills needed for futures • futures literacy in professional expertise	3 hours in person
MODULE 6	Embracing complexity in sustainability and values guiding our choices • system thinking • critical thinking • supporting life and equity	7 hours in person
	Competence reflection exercise	3 hours independent reflection assignment
MODULE 7	From competencies to actions • how to harness competences into action for a sustainable future	3 hours in person

GS10: Implement circular, green and socially responsible procurement

Training initiative (title) (ex. Expert in eco-design for circular economy in the textile and fashion industries)	GS10: Implement circular, green and socially responsible procurement
EQF Level	EQF 5–6
Proficiency level (foundation/basic, intermediate, advanced, high specialized level)	advanced -specialised
Expected learning outcomes (By the end of this course, the learners will acquire	By the end of the course, the learner will be able to: • Understand EU, and Spanish or Italian regulatory frameworks on sustainable procurement. • Learn the principles of the EU, Spanish, Italian regulatory framework on sustainable public procurement • Apply circular economy and life-cycle costing approaches in procurement. • Integrate environmental, social, and governance (ESG) criteria in tenders and contracts. • Evaluate suppliers and contracts based on sustainability performance, also by using the environmental/social labels and certifications/registrations • Design procurement strategies aligned with EU Green Deal objectives and national green/social procurement plans.
Overall duration/training time (in hours)	TOT: 25 hours - 8 online and 17 in-person (of which 8 homework/project work)
Training Methodologies	Online (asynchronous): video, texts, lectures, quizzes, case studies, theoretical content, group work. Onsite workshops: practical exercises, theoretical content.
Mode of Learning (Blended, online, onsite)	Blended (online for general theoretical knowledge + on-site for specific applied skills)
Assessment (ex. test)	SELF-ASSESSMENT TEST Multiple choice with single/multiple correct answers
Certification and recognition	Recognition and certification of achievements through Digital Micro credentials for learning (MCs schemes)
Targets	• VET students • Procurement officers • Entrepreneurs • Organisations' active workforce • Sustainability managers • Public administration staff • English Entry Level: B2 Other requirements might be defined at local/national level by the provider, depending on the context reference rules.
Delivery Language/	English (Spanish/Italian subtitles)

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	Foundations of Sustainable, Green and Circular Supply Chain	2h (online)

MODULE 2	Principles of Sustainable Procurement	4h (2h online + 2h on-site)
MODULE 3	Supplier Engagement and Value Chain Collaboration	2h (on-site)
MODULE 4	Environmental and Social Certifications for Sustainable Procurement	3h (1h online + 3h on-site)
MODULE 5	Socially Responsible Procurement and Fair Trade	3h (1h online + 2h on-site)
MODULE 6	Overview of EU and National Policies for Sustainable, Green and Circular Procurement	3h (1h online + 2h on-site)
MODULE 7	Contract Management and Compliance Monitoring	1h (onsite)
MODULE 8	From principles to practice: Sustainable Public Procurement	6h (1h online + 5h on-site)

GS11- Develop and implement joint sustainability initiatives

Training initiative (title) <i>(ex. Expert in eco-design for circular economy in the textile and fashion industries)</i>	Joint sustainability initiatives – development and implementation
EQF Level	EQF 5
Proficiency level <i>(foundation/basic, intermediate, advanced, high specialized level)</i>	Advanced
Expected learning outcomes <i>(By the end of this course, the learners will acquire</i>	• Understand and explain sustainability concepts and global frameworks, and their cross-sector relevance. • Analyse key EU and Bulgarian sustainability laws (Green Deal, CSRD, Climate Change Mitigation Act). • Design cross-sector initiatives addressing environmental, social, and economic aspects. • Identify and compare collaboration models for joint sustainability efforts. • Conduct stakeholder analysis, create engagement strategies and facilitate dialogue. • Identify funding mechanisms for joint sustainability efforts. • Develop sustainability projects proposals based on strategic goals and aligned with funding requirements. • Adopt collaborative governance and risk management practices to coordinate joint initiatives between organisations. • Design a monitoring and evaluation framework, including project-relevant KPI's.
Overall duration/training time (in hours)	24 hours (20 hours onsite training, 4 hours online training)
Training Methodologies	• Theoretical inputs • Sectoral and cross-sectoral case studies and insights • Self-paced learning • Moderated discussions • Case-based learning
Mode of Learning <i>(Blended, online, onsite)</i>	Blended In Module 1 learners will acquire knowledge about sustainability frameworks (SDGs, ESG, circular economy principles) and the foundations of systems thinking (stocks/flows, feedback loops, leverage points), through readings and visualisations with knowledge checks in self-paced online format. The in-person modules (2, 3, 4 and 5) translate the foundational sustainability and systems thinking concepts into applied practice across legal compliance, stakeholder collaboration and funding, project planning with governance and risk management, and monitoring & evaluation through cross-sectoral case studies and discussions.
Assessment <i>(ex. test)</i>	Summative evaluation • Tests • Quizzes • Analysis of case studies
Certification and recognition	Micro credentials for learning (MCs)

Targets	• VET students • Employees, entrepreneurs, consultants Recommended English proficiency level: B2
Delivery Language/	English During the implementation of the onsite (in-person) training part, providers can perform the delivery in their national languages according to the needs of their target beneficiaries/groups.

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	Sustainability Concepts and Systems Thinking	4 (online)
MODULE 2	Legal Frameworks and Cross-Sector Relevance	4 (in person)
MODULE 3	Collaboration Models, Stakeholders and Funding	5 (in person)
MODULE 4	Project Planning, Governance and Risk Management	6 (in person)
MODULE 5	Monitoring and Evaluation	5 (in person)

GS12 Evaluate sustainable investment opportunities

Training initiative (title) (<i>ex. Expert in eco-design for circular economy in the textile and fashion industries</i>)	Sustainable investment opportunities
EQF Level	EQF 6
Proficiency level (<i>foundation/basic, intermediate, advanced, high specialized level</i>)	Specialised
Expected learning outcomes (<i>By the end of this course, the learners will acquire</i>)	After attendance on the short course, learners will be able to: Understand the principles of sustainable finance (Module 1) Understand the role and significance of ESG investments in financial performance (Module 1) Identify and interpret ESG challenges and risks (Module 1) Understand and explain the EU regulatory framework related to sustainable finance: EU Taxonomy Regulation and the Sustainable Finance Disclosure Regulation (SFDR) (Module 2) Understands the key categories and principles of the Eurosif methodology for assessing sustainability-related investments (Module 2) • Describe the structure, objectives, and impact of sustainable financial products (ESG mutual funds, green and social bonds, and sustainable alternative assets) (Module 3) • Practice with real-world case studies—analyse sustainable investment portfolios or green projects and evaluate their performance using ESG criteria (Module 3) • Analyse ESG data to propose and assess the impact of a socially responsible investment product and strategy (Module 3)
Overall duration/training time (in hours)	24 training hours (4 hours online training, 20 hours face-to-face training). This overall duration might be adapted to the rules and standards for the release of Micro credentials in force in the different EU countries.
Training Methodologies	Theoretical inputs Sectoral/cross-sectoral case studies and insights Self-learning Moderated discussions Debates Case-based learning
Mode of Learning (<i>Blended, online, onsite</i>)	Blended learning Through online module 1 learners will acquire theoretical knowledge about sustainable finance and its role in promoting responsible economic growth, ESG investments as key indicators for measuring investment sustainability and their impact on financial performance along with ESG-related risk The in-person modules 2 and 3 will build practical knowledge on sustainable investments within the EU regulatory framework, key categories of Eurosif methodology of assessing sustainability-related investments and ESG best practices across various financial sectors through case-based learning.
Assessment (<i>ex. test</i>)	Summative evaluation Tests, Quizzes Practical-based exercises
Certification and recognition	Micro credentials for learning (MCs). After attending the online training part (4 hours distributed in 1 module participants will:

	Understand the principles of sustainable finance. Understand the role and significance of ESG investments in financial performance Identify and interpret ESG challenges and risks. After positive evaluation of these achievements, participants will receive a badge. After attending the in-person training part (20 hours distributed in 2 modules), participants will: Understand and explain the EU regulatory framework related to sustainable finance: EU Taxonomy Regulation and the Sustainable Finance Disclosure Regulation (SFDR) Understands the key categories and principles of the Eurosif methodology for assessing sustainability-related investments. Describe the structure, objectives, and impact of sustainable financial products (ESG mutual funds, green and social bonds, and sustainable alternative assets). Practice with real-world case studies—analyse sustainable investment portfolios or green projects and evaluate their performance using ESG criteria Analyse ESG data to propose and assess the impact of a socially responsible investment product and strategy After attendance and positive evaluation of the entire training path, participants will receive microcredentials.
Targets	Entrepreneurs, consultants, Higher VET students, professionals. English proficiency level recommended: at least B2
Delivery Language/	English During the implementation of the onsite training part, providers can evaluate the delivery in their national languages according to the needs of their target beneficiaries/groups.

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1 (online)	Introduction to sustainable finance and ESG framework	4
MODULE 2 (Physical)	Sustainable investments in the EU regulatory framework	10
MODULE 3 (Physical)	Case studies of successful sustainable investments	10



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