The ECCOE Micro-Credentials Implementation Guidebook

How to make Digital Credentials and Micro-Credentials work at your institution

July 2022

ECCOE Project Report on Intellectual Output 5

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Introduction

Universities are embracing the trend towards Micro-Credentials and Digital Credentials. Micro-Credentials offer learners greater choice, more flexibility and wider specialisation opportunities in their degree programmes. They have the potential for inclusive learning and for an intercultural, collaborative learning approach. Digital Credentials could allow recognition processes to be scaled up to much larger numbers, providing consistent and well-justified recognition decisions based on the rich data embedded in the credential.

In the ECCOE project (European Credit Clearinghouse for Opening up Education), a group of Higher Education Institutions (HEIs) partnered with associations and specialists in the field to explore how these (and more) promises can be turned into reality. They share the vision of creating a pool of shared online and blended learning opportunities, in which learners from all partner institutions can enrol and interact. Towards this end, the project partners developed meaningful descriptors and quality criteria for digital credentials, based on the standard of Europass Digital Credentials for Learning (EDC). To facilitate inter-institutional collaboration and the integration of partner institutions' Micro-Credentials into their own curricula, they developed a Model Credit Recognition Agreement. A prototype of an Online Catalogue of Learning Opportunities demonstrated how a pool of shared learning opportunities could look like. The project partners set out to issue their own Digital Credentials based on EDC.

The collection of How-to-Guidelines presented in this publication is a summary of our learnings and experiences from the ECCOE project. Even though the technologies and the approaches to Micro-Credentials are still rapidly evolving, we hope that by sharing our own experiences with the community we can support others on their own journey.

Please feel free to contact us at https://eccoe.eu/contact/ for further information on the topics in this publication.

1. Target Audience

Higher Education Institution staff, such as
- Teaching Staff
- Examination Office Staff
- Learning Technologist or Academic Support Staff
- Programme Director
- Administrative Staff

2. Summary

An institution or sectorial organisation wants to issue digitally signed credentials for a specific learning opportunity to all learners who complete their learning activities and reach the required competences as per the Learning Opportunity description.

3. Expectations

1. You want to issue EDC Europass Digital Credentials for Learning to your learners on behalf of your organisation.
2. By issuing digitally signed credentials, you want to ensure that learners have full control of their learning achievements, described in human and machine-readable format, which in addition are tamper-evident.
3. You want to create interest from learners at partner institutions about digitally signed credentials and their broader recognition.
4. You want to improve the visibility of your own and your partners' quality learning offerings, and the potential for easy inter-institutional recognition.
5. You want to describe learning opportunities and corresponding credentials using the same standardised and accepted open EU standards.
6. You might also want to offer a digital credentialing services to other organisations.

4. Prior Knowledge

1. Information available about the institutions' learning offerings leading to digitally signed credentials should be included in the learning opportunity description.
2. eSeal: Your institution needs a qualified or advanced electronic seal (see the official European Commission approved list[1] and the guide to getting an eSeal[2]; all details on how to obtain it are available on the EDC interoperability pages[3]).
3. Java Runtime Environment support: To be able to issue digitally signed credentials, you need to have installed a Java runtime environment[4] to ensure a proper functioning of the whole issuing process.
4. NexU: To be able to issue digitally signed credentials, you need to have NexU[5] installed to ensure a proper functioning of the whole issuing and signing process.
5. You need to have the information available that should be included into the digitally signed credential.

5. Description of the Activity

1. You select which of the means available (Online Credential Builder or Excel method) is better suitable for creating the credential. Check this tutorial to get all steps needed.
2. You prepare the template for your credential.
3. Once the template for the credentials is ready, you can issue the credentials as explained in the tutorial[6].

6. Description of the ECCOE system functionality

1. This part of the ECCOE system relies on the European Digital Credentials for Learning Infrastructure.

7. Description of the Result

1. Digitally signed credentials are awarded to learners who successfully completed their learning.
2. Learners receive their digitally signed credentials via email and/or direct wallet deposit.

8. Useful Links

Tutorial: How to issue ECCOE credentials
https://eccoe.eu/wp-content/uploads/sites/28/2022/07/How-to-issue-ECCOE-credentials.pdf

European Learning Model
https://github.com/european-commission-empl/European-Learning-Model/blob/master/Learning%20Opportunities/Learning%20Opportunities.md

European Digital Credentials for Learning
https://webgate.acceptance.ec.europa.eu/europass/edci-issuer/#/home

Europass Standardised Vocabularies
https://op.europa.eu/en/web/eu-vocabularies/europass

European classification of Skills, Competences, Qualifications and Occupations (ESCO)
https://ec.europa.eu/esco/portal

Official European Commission approved list of providers
https://esignature.ec.europa.eu/efda/tl-browser/#/screen/home

How to Prepare Your Data | European Digital Credentials for Learning
https://europa.eu/europass/en/preparing-credentials-european-digital-credentials-learning#3243

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1 https://esignature.ec.europa.eu/efda/tl-browser/#/screen/home
2 https://ec.europa.eu/digital-building-blocks/wikis/display/ESIGKB/How+can+I+create+an+advanced+or+qualified+electronic+seal
3 https://webgate.acceptance.ec.europa.eu/europass/edci-issuer/#/home
4 https://java-runtime-environment.en.softonic.com/download
5 https://github.com/nowina-solutions/nexu/releases/download/nexu-1.22/nexu-bundle-1.22.zip
6 https://eccoe.eu/wp-content/uploads/sites/28/2022/07/How-to-issue-ECCOE-credentials.pdf

All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

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How to obtain an eSeal
in order to authenticate a digital credential on behalf of your organisation
July 2022
A Practical Guideline developed by the ECCOE project team.
Alessandra Antonaci, Deborah Arnold, Jochen Ehrenreich, Ada Giannatelli, Mykolė Lukošienė, Ildiko Mazar, Carmen Padrón Nápoles, Timothy Read, Beatriz Sedano, Airina Volungevičienė. For more details, see https://eccoe.eu/partners/.

1. Target Audience

Higher Education Institution staff, such as
- Legal Representative or the LR's Personal Assistant
- Examination Office Staff
- Learning Technologist or Academic Support Staff
- Programme Director
- Administrator

2. Summary

Europass Digital Credentials for Learning are standardized electronic documents, which use an encrypted key called an eSeal to ensure the authenticity of the issuer and to prevent tampering. This short guide explains how you go about obtaining such an eSeal.

3. Expectations

1. Your organisation wants to issue European Digital Credentials for Learning.
2. To authenticate the credentials on behalf of your organisation, your organisation needs to acquire an eSeal.
3. Understand why you need an eSeal for authenticating ECCOE digital credentials.
4. Know where to look to find a Trusted Service Provider in your country who can issue your organisation with an eSeal.
5. Learn from other organisations about the process they went through.
6. Obtain your own eSeal so that you can issue authenticated digital credentials clearly showing your organisation's name and legal identity.

4. Prior Knowledge

1. Your organisation should have a concrete plan to issue digital credentials, which recognise learners' achievements. These digital credentials could be for a whole course (such as a Bachelors or Master's degree) or for short courses and learning paths such as MOOCs.
2. Someone in your organisation should be aware of the steps required to issue and authenticate a digital credential. Examples of such roles are learning technologist, programme director, academic support staff.

5. Onboard

1. As the obtention of an eSeal requires documentation, which engages the responsibility of the legal representative of your organisation (e.g. President, Rector, Chief Executive Officer…) this person needs to be fully informed, as well as authorised and willing to provide the documentation. This legal representative and/or the finance officer also needs to know that there is a cost for the eSeal - often a one off cost for obtaining the physical encrypted USB key, and then an annual cost based on the number of documents to be sealed. Remember that, like a rubber stamp, the eSeal can be used for much more than authenticating digital credentials, so the investment can be worthwhile.
2. The actual steps of obtaining the eSeal may of course be delegated to a trusted staff member, such as the legal representative's Personal Assistant. This is the role chosen for the explanation of the activity.

6. Description of the Activity

You are the Personal Assistant to the legal representative of your organisation, charged with obtaining an eSeal. The difference between an electronic signature and an eSeal is this: An electronic signature is personal - it engages the person signing. An eSeal is the digital equivalent of the rubber stamp of your organisation - it engages the responsibility of the organisation as a legal entity.
These are the steps you need to follow:
1. Try and find out the exact term in your own language, which will help you in the next steps. See section 11 below for selected translations.
2. Once this is clear in your mind, you need to look for a Trusted Service Provider in your country. See the official European Commission approved list and select your country.
3. Look at the list of Trusted Service Providers (TSP for short) for your country and identify those which issue a QCert for eSeal. You may already deal with a particular TSP for electronic signatures (which, remember, are not the same thing). If this TSP also issues QCerts for eSeal it is well worth contacting them first as they will know your organisation.
4. Select the TSP or TSPs you want to contact. Sometimes it is not easy to find the contact information so be prepared to spend some time on this. And from experience it is advisable to make contact by phone in order to explain what you need and why. eSeals are quite new, and some providers may try to sell you something which isn't what you need.
5. You may need to contact several TSPs before you find the one who can meet your needs, and it's always advisable to compare costs.
6. Once you have made your decision, the TSP will explain to you the process and the documentation you need to provide. The following sections provide examples from different EU member states.

7. Possible Barriers

Example: UNED
The main barrier to the use of the E-seal in Spain is that there is already an official digital certificate for all academic purposes produced by the Spanish National Agency FNMT (Fábrica Nacional de Moneda y Timbre), part of the Ministry of Finance and Public Function. This certificate is used by all Spanish universities, and public administration, and has been used for several years.

8. Useful Links

EU approved list of trust service providers
https://esignature.ec.europa.eu/efda/tl-browser/#/screen/home

Example page of Trust Service Providers for Ireland
https://esignature.ec.europa.eu/efda/tl-browser/#/screen/tl/IE

EDCI Europass Digital Credentials for Learning - instructions for issuers
https://webgate.acceptance.ec.europa.eu/europass/edci-issuer/#/home

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Explanation of the difference between advanced and qualified eSeal

https://europa.eu/europass/en/preparing-credentials-european-digital-credentials-learning#3243

9. Example A: Obtaining an eSeal in France

AUNEGe, the French Digital University for Economics and Management, and coordinator of the ECCOE project, decided to obtain an advanced eSeal to be able to issue and sign Europass Digital Credentials for Learning on behalf of its members, who are largely Higher Education Institutions themselves.

Cost:
- Year 1: 480€+50€ for the physical encrypted key
- then: 480€ per year

To obtain an eSeal, AUNEGE took the following steps:
1. The financial and administrative officer checked the list of TSPs for France.
2. She selected four TSPs, which were listed as issuing QCert for eSeal.
3. The first contacts were unfruitful, but one TSP (ChamberSign) understood the context and was able to meet our needs.
4. The process entailed collecting and sending a series of documents to prove the legal identity of AUNEGe (a non-governmental association), including the national ID cards of the legal representative (the President of AUNEGe), the finance officer as recipient of the physical key, and of the ECCOE project coordinator as delegated user.
5. The delivery of the encrypted USB key could only be done in person at the Chamber of Commerce in Lyon. As the legal representative was not able to go in person, an official letter of delegation was signed in order to authorise the financial and administrative officer to go and collect the key.
6. The financial and administrative officer then sent the physical key to the ECCOE project coordinator by registered post to ensure safe delivery into the hands of the person who would actually be using the key to authenticate the digital credentials.

10. Example B: Obtaining an eSeal in Lithuania

Vytautas Magnus University, being a partner of the ECCOE project, decided to obtain a qualified eSeal to be able to issue and sign Europass Digital Credentials for Learning.

1. The study department officer checked the list of TSPs for Lithuania.
2. From the provided list of TSPs there was only one institution - State Enterprise Centre of Registers - which would issue QCert for eSeal (others only could issue QCert for eSignature or validate qualified eSeal).
3. After contacting the selected TSP (State Enterprise Centre of Registers) it was found that there are several options for a university to have an eSeal. The first option was to have an encrypted USB key; the other option was to have an eSeal which is integrated.

11. Terminology Translations

English	Qcert for eSeal (qualified certificate for electronic seal)
French	"cachet numérique" (support cryptographique de type EuroComercio NG avec clé oberthur v7)
Lithuanian	Kvalifikuotas elektroninio spaudo sertifikatas
German	Qualifiziertes elektronisches Siegel
Italian	sigillo elettronico qualificato
Dutch	Elektronisch zegel
Spanish	Certificado digital "eSeal"

All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

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1. Target Audience

Higher Education Institution staff, such as
- Teaching Staff
- Examination Office Staff
- Programme Director
- Administrator

2. Summary

A Higher Education Institution gets an application to recognise a credential.

3. Expectations

1. Understand the principles for credential recognition.
2. Know the steps to take and the process for a clear and quick recognition.
3. Share and adapt the good practices of clear credential recognition processes.

4. Prior Knowledge

There are two scenarios: one if there is an ECCOE Model Credit Recognition Agreement (MCRA) between partners; and another, for individual recognition.

1. If your institution is not an ECCOE network partner and / or does not have a Model Credit Recognition Agreement (MCRA), there should be a set of rules and processes for the recognition of a credential. A person or institution is advised to be extremely familiar with the procedures and regulations.
2. An institution should clearly identify steps for recognition - regulatory and procedural - for accommodation of credential recognition, such as institutional units or persons responsible, workflow, possible hurdles and solutions. The steps and procedures may differ if the credential is issued as part of an existing agreement or if it is presented for recognition without any existing agreement between institutions or student and institution.
3. An institution should inform their staff about the recognition process to shorten bureaucratic procedures and make recognition more agile, such as clear guidelines and instructions. Many of those procedures are clarified in the Model Credit Recognition Agreement (MCRA). In preparation for individual recognition, it is advised to have a clear sense of bureaucratic procedures and regulations in order to make the process of credential recognition more agile.
4. It is suggested to discuss the possible scenarios (different credentials, different organisations, different study systems) to prepare yourselves for quick decisions.
5. It is suggested to accumulate the anonymised information about the recognition cases, such as institutions, grading schemes, and important aspects in order to quicken the forthcoming recognition.

5. Description of the Activity

You are the person, representative of your organisation, who received an application to recognise a credential.
These are the steps you should follow:

1. Analyse and understand well the process of academic recognition, the processual steps you have to follow in your institutions, the people or units responsible for the whole or segments of the recognition workflow. Be prepared for the standard process before the application is received.
2. If there is one, consult the existing Model Credit Recognition Agreement your institution has with the partnering institution, what is decided in the agreement, what steps are discussed. If there is no Model Credit Recognition Agreement, consult the existing regulation about the recognition in your institution.
3. The credential provided for the recognition should have all the necessary data fields that are important for clear recognition.
4. Depending on the steps of the institution, the recognition should include steps such as, reception of the (micro)credential details for recognition, review and analysis of the credential data, focus being set on the learning outcomes and competences gained and formalising the recognition by including eventually the learning opportunity in the diploma supplement as part or in addition to the study program.
5. Some institutions include more, some less steps and consultations in the recognition process, make sure you get all the parties acquainted with the MCRA and clauses in the agreement if there is one, and try to mitigate the recognition process, ensuring the agility of the process at the same time as abiding the necessary regulations.

6. Description of the ECCOE system functionality

1. Credentials and courses are recognised based on the pre-existing agreement among institutions, and also based on the learning agreement between a student and the two institution representatives. The MCRA in this case is a pre-existing agreement between partner universities or institutions.
2. A student submits a credential, for example transcript of records with the required information to his faculty and International Cooperation Department.
3. Every faculty has several study programme committees and recognition curators that confirm the recognition of the courses according to the learning agreement and programme requirements.
4. The faculty administrator fills the form that is signed by the faculty curator and the studies department officials, and courses are recognised, submitted and finally 'end up' in the diploma supplement.

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7. Description of the Result

The credential is recognised as part of the study programme.

8. Useful Links

Lisbon Recognition Convention (Convention on the Recognition of Qualifications concerning Higher Education in the European Region)
https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=165

European Area of Recognition Manual
http://ear.enic-naric.net/emanual/

European classification of Skills, Competences, Qualifications and Occupations (ESCO)
https://ec.europa.eu/esco/portal

How to recognise qualifications held by refugees
https://www.enic-naric.net/recognise-qualifications-held-by-refugees-individuals.aspx

ECTS User guide
https://op.europa.eu/en/publication-detail/-/publication/da7467e6-8450-11e5-b8b7-01aa75ed71a1

European Convention on the General Equivalence of Periods of University Study (ETS No. 138)
https://www.coe.int/en/web/conventions/full-list?module=treaty-detail&treatynum=138

All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

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1. Target Audience

Higher Education Institution staff, such as
- Head of international mobility (and staff)
- Vice-Rector for Teaching (and personal assistant)
- Dean, Head of department, Programme Director
- Examination Office Staff
- Teaching Innovation Unit
- Learning Technologist or Academic Support Staff
- Administrator

2. Summary

Your organisation issues a micro-credential for a course (e.g. a MOOC), and would like this credential to be easily recognisable by other Higher Education Institutions (HEI). This short guide explains how to streamline this process through a specially developed tool, the Model Credit Recognition Agreement (MCRA). For example, the MCRA can complement inter-institutional agreements by identifying eligible courses before individual learning agreements are set. The MCRA is available for you online in the ECCOE website, but you can also download it as a Microsoft Word template.

3. Expectations

Explore an agile way to establish cross-institutional agreements between HEIs on micro-credentials offered in their institutions:
1. Explore the potential of micro-credentials for students' mobility (physical and/or virtual) in HEIs.
2. Create visibility for a particular micro-credential (or more) offered in an HEI.
3. Open up learning pathways providing flexible training opportunities for people with more disadvantaged socio-economic status.

4. Prior Knowledge

You need to know the process / current practices (and people responsible / accountable / informed) to issue and recognise courses and micro-credentials within your unit or department.
1. Someone in your unit (typically: administrative staff) needs to be aware of the steps required to set up a specific learning agreement to be complemented with the MCRA
2. The head / reference person of the unit needs to be informed
3. The new documentation (e.g. MCRA template) and process workflow need to be made available within the knowledge base of the unit
4. Before initiating the process, you should explore / find out what the steps are in your institution:
   - types of recognition and agreement
   - objective(s)
   - what needs to be done by both institutions to turn a template into a final agreement (institutional steps and conditions)
   - who will be responsible for filling the MCRA template
   - who will be responsible for signing the MCRA in both institutions, etc.

You can use the [Microsoft Word downloadable template](7) or the online [MCRA tool on the ECCOE website](8) ([registration here](9)) and decide which one will be used. To create the MCRA with the online tool you need to have a login and the password.

5. Onboard

Two types of recognitions are contemplated:
- (Unidirectional) Your Higher Education institution (HEI-A) wants to generate an agreement (the MCRA) with another institution (HEI-B) to recognise credits for a micro-credential (or more) Note: The purpose can be that the HEI-B recognise credits for HEI-A's micro-credential or that HEI-A recognise credits for a micro-credential issued in HEI-B.
- (Bidirectional) Your HEI and another HEI want to sign an agreement (the MCRA) with each other to recognise a micro-credential (or more) issued in the other institution to recognise credits.

Notes:
For MCRA recognition examples see the "[MCRA User Guide](10)". The MCRA has been designed to be as generic as possible, permitting a wide range of cross-institutional agreements to prepared, but the **four most common types of MCRA** that are expected to be prepared are
- unidirectional cross-institutional recognition of a course
- bidirectional cross-institutional recognition of a course
- unidirectional cross-institutional recognition of several courses
- bidirectional cross-institutional recognition of several courses

The ECCOE MCRA template contemplates **four types of recognition** that are the most common:
- Faculty level Formal Learning, such as courses and modules within curricula (in person / blended / totally online)
- Faculty level Non-Formal Learning, such as MOOCs
- Institutional level Formal Learning, such as courses and modules within curricula (in person/blended/totally online)
- Institutional level Non-Formal Learning, such as MOOCs

6. Description of the Activity

1. A person from an institution initiating the recognition selects a particular micro-credential (or more) to be recognised in another HEI.
2. This person needs to explore the MCRA template in order to set the previous steps above mentioned and decide which option of MCRA o use.
3. This person prepares the MCRA, completing all sections step-by-step (see detailed explanation and instructions in the "MCRA User Guide" available in Section 6).
4. Once the MCRA is completed and revised by both parties, the MCRA will be signed and shared on the ECCOE project website.

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7 https://eccoe.eu/wp-content/uploads/sites/28/2022/05/MCRA-UNED-TEMPLATE.docx
8 https://eccoe.eu/outputs/io2/mcra-etemplate/
9 https://eccoe.eu/login-2/
10 https://eccoe.eu/wp-content/uploads/sites/28/2020/12/MCRA-User-Guide.v.1.4.pdf

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All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

How to establish a Model Credit Recognition Agreement (MCRA)

July 2022
A Practical Guideline developed by the ECCOE project team.
Alessandra Antonaci, Deborah Arnold, Jochen Ehrenreich, Ada Giannatelli, Mykolė Lukošienė, Ildiko Mazar, Carmen Padrón Nápoles, Timothy Read, Beatriz Sedano, Airina Volungevičienė. For more details, see https://eccoe.eu/partners/.

7. Description of the ECCOE system functionality

1. Review and recognise the validity of the generated MCRA document.
2. Consider for extension to one's own HEI, based upon the implicit quality present due to the agreement.

8. Description of the Result

1. You obtain a draft for a Model Credit Recognition Agreement (MCRA) to be validated and signed by the respective HEI authorities from this process.
2. The MCRA will be shared on the ECCOE website.
3. If the micro-credential recognised in the MCRA is linked to a course / learning opportunity listed in the ECCOE Online Catalogue of Learning Opportunities (OCLO), the recognition options are listed in the OCLO. In this way, students can see this information and it can help them to select the appropriate learning opportunity.

9. Useful Links

Model Credit Recognition Agreement (MCRA) tool on the ECCOE website
https://eccoe.eu/outputs/io2/mcra-etemplate/
registration here
https://eccoe.eu/login-2/

You can also access the MCRA via a Microsoft Word template:
https://eccoe.eu/wp-content/uploads/sites/28/2022/05/MCRA-UNED-TEMPLATE.docx

An example of a fictional MCRA can be seen here:
https://eccoe.eu/wp-content/uploads/sites/28/2020/11/MCRA_Fictional_Agreement_Example.pdf

Link to the "MCRA online tool User Guide" here:
https://eccoe.eu/wp-content/uploads/sites/28/2020/12/MCRA-User-Guide.v.1.4.pdf
(MCRA recognition examples in section 3.1. of the user guide above)

Reference website for Online Learning Agreements
https://www.learning-agreement.eu/

All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

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How to link the learning outcomes of a course / MOOC to skills recognised at European level (ESCO)
July 2022
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1. Target Audience

Higher Education Institution staff, such as

- Vice-Rector for Teaching (and personal assistant)
- Teaching Innovation Unit
- Teaching Staff
- Examination Office Staff
- Learning Technologist or Academic Support Staff
- Programme Director

2. Summary

Your organisation plans to issue digital credentials which recognise learners' achievements in a learning opportunity: this short guide explains how to reference the Learning Outcomes (LOs) related to these achievements against the EU classification of skills.

3. Expectations

1. Comply with the European reference framework for skills (ESCO - European Skills, Competences, Qualifications and Occupations)
   - to increase transparency and recognition of learning,
   - to support transnational and virtual mobility.
2. Use the ESCO skills pillar as a lever for innovation to fine-tune the learning outcomes of the course, be they of a whole study programme (such as a Bachelor's or Master's degree) or for short courses and learning paths such as MOOCs.

4. Prior Knowledge

Your organisation has a concrete plan to issue digital credentials, which certify learners' achievements.

Whether your institution's governance bodies have already decided to take formal actions or not, you do want to become familiar with defining learning outcomes according to the European standard in terms of classification of skills: your aim is to prepare the ground for the issuing of digital credentials, thereby increasing the transparency and interoperability of the information describing the learning opportunity.

5. Onboard

1. You identify a learning opportunity (let's say a MOOC) that might potentially issue a digital credential
2. According to the European Learning Model you have to describe its properties and, among them, the achievements and the related learning outcomes, referencing the skills in the European classification which identifies and categorises skills, competences, qualifications and occupations relevant for the EU labour market and education (ESCO).

6. Description of the Activity

You can start exploring the ESCO skills pillar by entering the keywords of your MOOC into the new ESCO Skills pillar available at https://esco.ec.europa.eu/en/classification/skill_main, which articulates skills into:
K - knowledge
L - language skills and knowledge
S - skills
T - transversal skills and competences

You search for a suitable match with each of the MOOC Learning Outcomes by scrolling through the structure of the taxonomy and /or with a keywords search: consider that the new version of ESCO (1.1) improved the mapping of digital, green, transversal skills and skills for researchers.

You link each MOOC Learning Outcome to the appropriate skill(s) by using the respective URI(s), that is Unique Resource Identifier, a persistent and machine-readable string of characters, which identifies each ESCO skill. It also points to suitable translations, as ESCO is multilingual. For each skill or competence, you can find the URI at the bottom of the respective ESCO web page. As a rule of thumb, each Learning Outcome can be referenced against 1 to 3 ESCO skills. Caveat: consider only skill whose status is "released" (and NOT "obsolete").

Let's explain that through an example: one of the Learning Outcomes of the MOOC titled "Managing Changes" is "Alter one's attitude or behaviour to accommodate modifications in the workplace". By searching among transversal skills and competences, you find "Adapt to change", that you can reference to your Learning Outcome on the MOOC presentation page through a URI such as, in this case, http://data.europa.eu/esco/skill/49de9958-2aa4-4eef-a89d-fe5d5bcd28c4, and so on for each of the course Learning Outcomes (but remember that you might not find an ESCO skill that matches your Learning Outcome!).

Remember also that the ESCO skills pillar can act as a lever for innovation so that you can revise your Learning Outcomes. Remember to use verbs that indicate what the learner will be able to do by achieving a Learning Outcome!

ESCO stands for European Skills, Competences, Qualifications and Occupations: you can explore Qualifications and Occupations to see the relevant skills required and get inspired for your MOOC intended Learning Outcomes!

7. Description of the ECCOE system functionality

ESCO skills can be specified in the ECCOE Learning Opportunity Catalogue (LOC).

8. Description of the Result

The output of this activity is a web page presenting the MOOC, where next to each Learning Outcome there is the link / pointer to the respective skill in the ESCO portal. See the example here: https://www.pok.polimi.it/
-> Managing changes
https://www.pok.polimi.it/courses/course-v1:Polimi+MANCHAN101+2021_M6/about

9. Useful Links

ESCO Skills
https://esco.ec.europa.eu/en/classification/skill_main

ECCOE online catalogue of learning opportunities (OCLO)
https://eccoe.eu/eccoe-catalogue-of-learning-opportunities/

Europass Digital Credentials
https://europa.eu/europass/digital-credentials/issuer/#/home

How to Prepare Your Data | EDC
https://europa.eu/europass/en/preparing-credentials-european-digital-credentials-learning#3243

Co-funded by the Erasmus+ Programme of the European Union

How to create a micro-credential module description
a) and a catalogue entry in the ECCOE Learning Opportunities Catalogue

July 2022
A Practical Guideline developed by the ECCOE project team.

Alessandra Antonaci, Deborah Arnold, Jochen Ehrenreich, Ada Giannatelli, Mykolė Lukošienė, Ildiko Mazar, Carmen Padrón Nápoles, Timothy Read, Beatriz Sedano, Airina Volungevičienė. For more details, see https://eccoe.eu/partners/.

1. Target Audience

Higher Education Institution staff, such as
- Teaching Staff
- Learning Technologist or Academic Support Staff
- Programme Director
- Administrator

2. Summary

An institution wants to offer a micro-credential learning opportunity to partners in the ECCOE system, and therefore needs to create a micro-credential / Learning Opportunity module description that is compatible with the Learning Opportunities Catalogue and the European Learning Model.

3. Expectations

1. Create interest from learners at partner institutions to participate in this micro-credential.
2. Create visibility for this micro-credential learning opportunity.
3. Increase the number of enrolments for this micro-credential.
4. Give and take: contribute an institution's modules to the pool of learning opportunities, and give the institution's own students more choice, with the possibility of enrolling in another partner institution's learning opportunities, to have their credits recognised.

4. Prior Knowledge

1. Institution needs to be an ECCOE partner (or member of the ECCOE network).
2. Person creating the micro-credential module description needs to have a login and editing rights to the Learning Opportunities Catalogue at https://eccoe.eu/wp-admin
3. If applicable, the institution's guidelines for creating a module description, and for describing learning outcomes, are followed.

5. Description of the Activity

1. Identify and analyse the Learning Opportunity (LOpp) using the Micro-credential module description template[11].

   This serves as a self-check.
2. After approval by the ECCOE steering committee (see below under point 6. "Description of the ECCOE system functionality"), log in to https://eccoe.eu/wp-admin, then go to the Learning Opportunities page[12] from the Catalogue (LOC) and fill in the fields, which provide controlled vocabularies and context-specific help as needed.
3. See instructions in the Learning Opportunities Catalogue Tutorial[13]
4. The module description contains the following groups of fields:

   - General information about the LOpp: [...]
   - Detailed Information about the LOpp: [...]
   - Learning Specification: [...]
   - Contact Information: [...]
   - Related learning specifications [...]

6. Description of the ECCOE system functionality

1. The ECCOE steering committee will review the proposed Learning Opportunity.
2. They either approve the Learning Opportunity for including in the catalogue, or consult with you to resolve any open issues.

7. Description of the Result

1. The Learning Opportunity is listed in the ECCOE Learning Opportunities Catalogue and students can then browse and enrol in it. Enrolment will be on the partner's website.
2. Additional information, such as new Model Credit Recognition Agreements (MCRAs) or information on where the credential is recognised, can be added as needed.

8. Useful Links

ECCOE Learning Opportunities Catalogue tutorial at https://eccoe.eu/wp-content/uploads/sites/28/2022/07/How-to-issue-ECCOE-credentials.pdf

Europass Learning Model
https://github.com/european-commission-europass/Europass-Learning-Model/blob/master/Learning Opportunities/Learning Opportunities.md

Europass Digital Credentials for Learning
https://webgate.acceptance.ec.europa.eu/europass/edci-issuer/#/home

Europass Standardised Vocabularies
https://op.europa.eu/en/web/eu-vocabularies/europass

European classification of Skills, Competences, Qualifications and Occupations (ESCO)
https://ec.europa.eu/esco/portal

ECCOE micro-credential module description template

https://eccoe.eu/wp-content/uploads/sites/28/2022/06/Micro-credential-Module-description-template.pdf

Course on how to create and award Europass Digital Credentials (requires registration)
https://lms.discovet.eu/course/view.php?id=4

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[11] https://docs.google.com/document/d/1ZQQHN84MAH_LQ_XXR2of-VA_EOHCzvlyc8M7vYy0XRQ/edit

[12] https://eccoe.eu/wp-admin/edit.php?post_type=loc_catalogue_item
[13] https://eccoe.eu/wp-content/uploads/sites/28/2022/07/How-to-issue-ECCOE-credentials.pdf

13   All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

Co-funded by the Erasmus+ Programme of the European Union

ECCOE

European Credit
Clearinghouse for
Opening up Education

How to create a micro-credential module description:
b) general principles for describing Learning Opportunities
July 2022
A Practical Guideline developed by the ECCOE project team.
Alessandra Antonaci, Deborah Arnold, Jochen Ehrenreich, Ada Giannatelli, Mykolė Lukošienė, Ildiko Mazar, Carmen Padrón Nápoles, Timothy Read, Beatriz Sedano, Airina Volungevičienė. For more details, see https://eccoe.eu/partners/.

1. Target Audience

Higher Education Institution staff, such as

- Teaching Staff
- Learning Technologist or Academic Support Staff
- Programme Director
- Administrator

2. Summary

An institution wants to offer a micro-credential learning opportunity and therefore needs to create a micro-credential module description that is compatible with the European Learning Model.

3. Expectations

1. Create interest from learners to earn this micro-credential.
2. Create visibility for micro-credential learning opportunities.
3. Increase the number of enrolments for this micro-credential.
4. Support the improvement of the way learning opportunities are described (harmonisation, clarity, details about learning outcomes, learning activities and assessment).

4. Prior Knowledge

1. Institution has an offering of learning opportunities (Short Learning Programmes, MOOCs, SPOCs or similar), and wants to issue Digital Micro-Credentials to recognise the achievements of learners.
2. Person creating the description of the learning opportunity has access to all the pedagogical and administrative information (learning outcomes, competences developed, learning activities, forms of assessment, fees, enrolment and admission procedures etc.)
3. If applicable, the institution's guidelines for creating a module description, and for describing learning outcomes, are followed.

5. Description of the Activity

1. Consult the ECCOE Learning Opportunities Catalogue for good examples of how to describe a Learning Opportunity https://eccoe.eu/eccoe-catalogue-of-learning-opportunities/
2. Compare with the way similar learning opportunities are described on your institutional website or MOOC platform.
3. Contact the people/team in charge of the training offer section of your institutional website or MOOC platform to explore possibilities and constraints to improve the way in which your learning opportunities are described.
4. Consult national websites and databases concerning national competency frameworks.
5. Consult the European classification of Skills, Competences, Qualifications and Occupations (ESCO) portal https://ec.europa.eu/esco/portal and map the knowledge and skills (learning outcomes) of your own learning opportunity to ESCO, if this has not already been done.
6. Download the ECCOE learning opportunity template[14] and complete it with your institutional information.

7. Optional: use your detailed Learning Opportunity to design a Digital Micro-Credential in order to recognise the achievement.
8. Publish your learning opportunity on your website / MOOC platform and on Europass if you wish.

6.   Description of the Result

1. The Learning Opportunity is listed on your institutional website and provides detailed information to support learners in identifying its relevance for them.
2. Optional: the Learning Opportunity is listed on Europass for additional visibility and to support mobility and employability.
3. Optional: additional information, such as the availability of a Digital Micro-Credential and where this credential is recognised, is provided.

7. Useful Links

ECCOE Learning Opportunities Catalogue
https://eccoe.eu/eccoe-catalogue-of-learning-opportunities/

Europass Learning Model
https://github.com/european-commission-europass/Europass-Learning-Model/blob/master/Learning Opportunities/Learning Opportunities.md

Europass Digital Credentials for Learning
https://webgate.acceptance.ec.europa.eu/europass/edci-issuer/#/home

Europass Standardised Vocabularies
https://op.europa.eu/en/web/eu-vocabularies/europass

European classification of Skills, Competences, Qualifications and Occupations (ESCO)
https://ec.europa.eu/esco/portal

ECCOE micro-credential module description template

https://eccoe.eu/wp-content/uploads/sites/28/2022/06/Micro-credential-Module-description-template.pdf

Course on how to create and award Europass Digital Credentials (requires registration)
https://lms.discovet.eu/course/view.php?id=4

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[14] https:\eccoe.eu\wp-content\uploads\sites\28\2022\06\Micro-credential-Module-description-template.pdf

ECCOE
European Credit
Clearinghouse for
Opening up Education

How to stimulate ECCOE collaboration between HEIs
and also with other learning providers
July 2022
A Practical Guideline developed by the ECCOE project team.
Alessandra Antonaci, Deborah Arnold, Jochen Ehrenreich, Ada Giannatelli, Mykolė Lukošienė, Ildiko Mazar, Carmen Padrón Nápoles, Timothy Read, Beatriz Sedano, Airina Volungevičienė. For more details, see https://eccoe.eu/partners/.

1. Target Audience

Higher Education Institution staff, such as
- Vice-Rector for Teaching and/or International Affairs
- Head of international mobility
- Teaching Staff or Programme Director
- Learning Technologist or Academic Support Staff

2. Summary

The ECCOE project has developed a range of tools, guides and services to help HEIs and other learning providers collaborate to support the take-up of Digital Micro-Credentials. This guide provides examples of successful collaboration during the project lifetime, which can serve as inspiration for others and showcases the ECCOE tools and services which can support this.

3. Expectations

1. A HEI is seeking to develop micro-credentials, either within an existing partnership (e.g. European University Alliance) or wishes to identify partners to develop a new project.
2. The HEI / learning provider / Alliance / project wishes to improve its portfolio of Learning Opportunities to offer more choice and specialisations to learners

4. Prior Knowledge

1. Awareness of micro-credentials and their potential
2. Knowledge about recognition/accreditation procedures in the institution and in partner institutions
3. Institutional strategy in line with micro-credentials
4. Funding opportunities or in-house financing

5. Description of the Activity

1. ECCOE partners reach out to identified HEIs or Alliances, or are contacted by them
2. HEIs or Alliances identify key people / roles
3. ECCOE partners offer advice on strategy, give demonstrations and produce mock credentials to generate interest and get HEIs/Alliances on board
4. ECCOE partners draw up a bespoke programme or contract to accompany the HEIs/ Alliances with different levels of support

6. Description of the ECCOE system functionalities

ECCOE provides templates and guidelines for
1. Issuing Digital Credentials in the form of EDC Europass Digital Credentials for Learning
   a. Model Digital Credential
   b. ECCOE Translations[15]
2. Model Credit Recognition Agreements (MCRA)
   a. MCRA tool (Google Sheets prototype[16])
   b. MCRA Wordpress Tool[17], Password: MCRA2020)
   c. MCRA User Guide[18]

3. A Directory of Learning Opportunities
   https://eccoe.eu/eccoe-catalogue-of-learning-opportunities/

7. Case Study Description

1. An association of HEIs wanted to develop a micro-credential offer to provide lifelong learning opportunities
2. The national ECCOE partner was invited to give a series of presentations to different groups of stakeholders from the Association and from their wider network
3. The presentations and demonstrations covered awareness raisin about micro-credentials from strategy to implementation,
4. The ECCOE partner produced mock credentials to show what they would look like to learners achieving them
5. The ECCOE partner also accompanied learning technologists and programme managers in improving the descriptions of specific fields such as learning outcomes, learning activities and assessment
6. A document was drawn up specifying the roles and responsibilities of each of the stakeholders: (1) the issuing organisation; (2) the organisation responsible for delivering the training and assessment; (3) the organisation repsible for sealing the credentials on behalf of the issuing organisation
7. A roadmap was drawn up to plan the work from conception to full implementation

8. Description of the Result

1. HEIs / Alliances implementing micro-credentials reach a broader spectrum of learners (lifelong, non-traditional)
2. HEIs / Alliances increase their network through implementing mutual recognition practices
3. HEIs / Alliances contribute to increasing student mobility by facilitating the recognition of achievements through micro-credentials
4. HEIs / Alliances support employability by providing learners with trustworthy, reliable and data-rich digital micro-credentials aligned with labour market and societal needs

9. Useful Links

ECIU University Micro-Credentials: a vision for European learners, values and priorities
https://www.eciu.org/news/presentation-of-the-third-eciu-university-micro-credentials-paper-a-vision-for-european-learners-values-and-priorities

https://assets-global.website-files.com/551e54eb6a58b73c12c54a18/62ab225477535859cb10972f_Paper%203%20ECIU_corrections.pdf

Adoption of European Council Recommendations on Individual Learning Accounts and Microcredentials
https://www.consilium.europa.eu/en/press/press-releases/2022/06/16/council-recommends-european-approach-to-micro-credentials/

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15 https://eccoe.eu/wp-content/uploads/sites/28/2022/07/ECCOE-Translations.xlsx
16 https://docs.**google**.com/spreadsheets/d/1qAlY_iT67gUC4m4PB8BET0q9c6bRtBLsduttoMQo700/edit?usp=sharing

17 https://eccoe.eu/outputs/io2/mcra_fp/
18 https://eccoe.eu/wp-content/uploads/sites/28/2020/12/MCRA-User-Guide.v.1.4.pdf

15   All ECCOE Guidelines are available at https://eccoe.eu/outputs/io5/

Co-funded by the Erasmus+ Programme of the European Union

About the ECCOE Project

The increasing unbundling of higher education and the availability of short learning programmes and online MOOCs have undeniable advantages to today's lifelong learners. These more agile means of education are more suitable to address quickly emerging new skills and competencies demanded by the labour market. However, some issues – such as concerns about data protection and privacy or the lack of validation and recognition mechanisms of digital credentials – cause a serious bottleneck to progress. The ECCOE project aims to present a solution to many of these problems with the perspectives of learners, Higher Education Institutions (HEIs) and employers in mind in equal measure.

For more information: visit https://eccoe.eu/