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Craft Revitalization Action
for Future-proofing the Transition
to Innovative Technologies
for Sustainable Development

Deliverable D6.1.
Learning ecosystems/Hubs report interim

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Executive Summary

This intermediate report (deliverable D6.1) details the activities of the whole consortium in **WP6—Skills and learning communities across fashion and related CCSI** and clarifies each activity within this work package and the role of partners. It indicates the preparations and the planning, as well as the presentation of learning services and outcomes to be delivered by the end of the project. This document provides partners with necessary instructions for implementing WP6 activities, describing in detail what has been done (achievements and outcomes), what should be done (tasks) and how to do it (methodology) for performing activities and reporting results. This report is based on standard tools such as templates, the grid for collecting data, recommendations for organising and reporting on the training workshops, etc.

The CRAFT-IT4SD project seeks to create a sustainable learning community that bridges the skills gap in the creative, crafts, and related industries. The community will cover four main areas: innovative business models, sustainability in wardrobes, empowering consumers and communities, and the intersection of crafts with emerging technologies. It aims to provide lifelong learning through peer-to-peer exchanges, knowledge transfer, and collaborative pathways. The project targets a broad audience, including artists, designers, and future students, and will continue to operate beyond the project's duration. An integrated online space at https://www.linkedin.com/company/craft-it4sd/, leveraging LinkedIn's networking capabilities and a dedicated resource repository, will support discussions and sharing, creating a dynamic learning environment. The community is built on inclusivity and collaboration, with moderators and content creators ensuring active participation and sharing relevant resources. Networking opportunities and collaborations will be encouraged, facilitating engagement with professionals and mentors. The project's goals will be met through continuous feedback, knowledge exchange, and practical activities across different groups within the community, ensuring the creative sector's growth and competitiveness.

Training or innovation workshops in WP6 will gather expertise from inside and outside the consortium to experiment towards identifying future pathways and recommendations to overcome barriers in CCSI education by integrating emerging technologies with a significant impact on stimulating creativity and preserving craft heritage. The training workshops will exploit European know-how, creative traditions, and values as represented by the CRAFT-IT4SD consortium and particularly the project's four pilot ecosystems and aim to develop cross-sectoral skills and multidisciplinary collaborations among students, education experts, SMEs, micro-companies, start-ups & entrepreneurs, crafts communities and artisans, designers and technology developers as well as local CCSI clusters. The CRAFT-IT4SD training workshops will also target and be presented to the experts of the Advisory Board.

The CRAFT-IT4SD project is designed to develop Learning Ecosystems/Hubs for fashion and related Cultural and Creative Sectors and Industries (CCSI) through a progressive, step-by-step approach. The project involves:
1. **Setting up Learning Ecosystem Teams (LET)** to build capacity.
2. **Elaborating and validating the LET Capacity Building Procedure.**
3. **Developing and executing Action Plans (AP)** in Innovative Business Models, Sustainability, Consumer Empowerment, and Emerging Technologies.

These ecosystems aim to foster local and regional excellence in education, support CCSI's adaptation to climate transitions, and create a knowledge-based, sustainable economy. They are based on quadruple-helix partnerships, focusing on cross-sector mobility and applied innovation in education. The Action Plans incorporate new areas, such as Learning for the Triple Transition with Emerging Crafts and Creative Professions.

Key components of the Learning Ecosystems include:

- **Building Capacities** in areas such as micro-credentials-based curricula and digital learning technologies like the metaverse and serious gaming.
- **Integration of skills development**, upskilling, and re-skilling for sustainable growth.
- **Creating micro-credentials** to align with industry needs, combining technological innovations and tailored learning pathways.

Micro-credentials are competency-based recognitions that allow learners to showcase specific skills. They are flexible and can be integrated into formal education, offering significant value in lifelong learning and employability. The project emphasises **collaborative learning**, practical, real-world applications, and integrating sustainability and cultural heritage into fashion and crafts education.

The curricula for micro-credentials in the CRAFT-IT4SD project incorporate:

- **Sustainable business models** and empowering consumers.
- **Craft techniques and digital innovation**.
- **Collaborative learning** through group projects and real-world collaborations.

Overall, the CRAFT-IT4SD project seeks to integrate sustainability, craftsmanship, and innovation into fashion and related industries, focusing on creating dynamic and adaptable learning experiences that meet current and future industry demands.

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1   CRAFT-IT4SD Project Overview

1.1   Aim and Objectives of the Project

CRAFT-IT4SD aims to activate the **Cultural and Creative Sectors and Industries (CCSI)** towards the green transition by building on rich cultural heritage and strong creative traditions. To achieve this aim, the consortium acts to:

- revitalise knowledge, practices, and traditional crafts as shared cultural resources for sustainability by combining techniques and skills associated with emerging digital technologies and data analytics processes and services;
- explore cross-sectoral CCSI innovation through a new ecosystem approach and with four pilot clusters (DK, ES, FI, RO), where regional governance, public-private partnerships, entrepreneurial living labs, learning communities, and consumer-engagement approaches support shared experimentation towards the green transition.
- adopt a new ecosystem approach to facilitate co-creation between traditional craft stakeholders, the fashion industry, SMEs by designers, artisans, and artists through immersive media technologies.
- to replicate insights, learnings and tangible results leading to a CCSI-driven green transition.

1.2 Objectives and Tasks of WP6
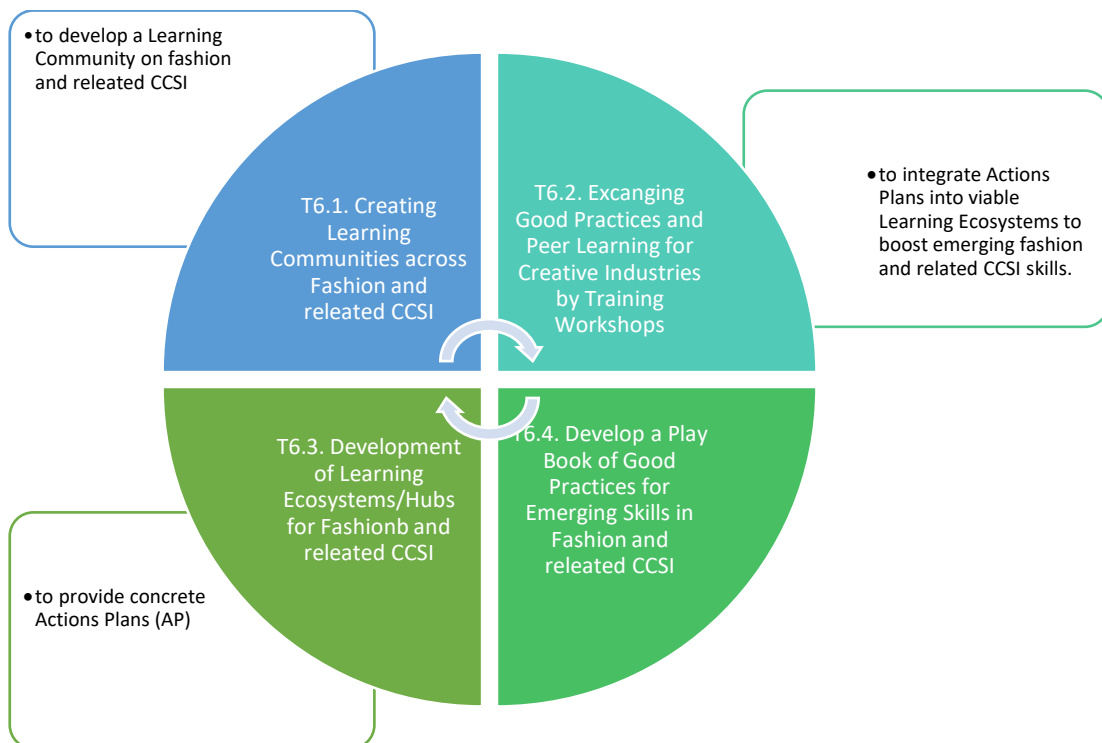
Figure 1 Overview on objectives and tasks of the project

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1.3 Deliverables and Milestones

WP6 supports the development of CCSI cross-sectoral learning ecosystems by delivering interactive open education resources (OER) for up-and-reskilling, which are tested and implemented in the pilot sites and across pilots for intra pilot communication. Three deliverables (6.1, 6.2, 6.3) and intermediate milestones (MS16, MS17, MS18 and MS19) are planned to be delivered.

Deliverables/Associated Milestones from the handbook (D1.1)	Title	Due Date (month)	Means of verification
MS 6.1/ MS15	Create a learning community across fashion and related CCSI	12	A collaborative virtual learning community is established.
D6.1	Learning ecosystems/Hubs report interim for Stakeholder validation	14	A learning service that integrates members of a learning community, providing interactive content-based training methods structured into micro-credentials-based curricula allowing creative blended learning.
MS 6.2/ MS16	Submit the Reports on Training workshops to exchange good practices and peer learning for CCS	26	Training workshops completed (T6.2); creative business people, innovation leaders, stakeholders and pilot partners attended.
MS 6.3 / MS17	Set up teams and develop action plans for capacity building of the Learning Ecosystems	10	Developed methodology applied for each of the four Learning Ecosystems
MS 6.4/ MS18	Release the first draft of the Learning Ecosystems	20	The draft Learning Ecosystem has been released.
D6.2	Learning ecosystems/Hubs report final	26	Learning ecosystems/Hubs report final.
MS 6.5/ MS19	Release the first draft of the playbook	28	Playbook of best practices for emerging skills in CCSI - first draft.
D6.3	Playbook of good practices for emerging skills in fashion and related CCSI	29	An interactive, game-based playbook presenting the project's core processes and good practices, skills-related results, experiences and lessons learnt from the piloting along with concrete action plans.

1.4 Partners

Ten partners acting as beneficiaries and one associate partner work together to implement the tasks distributed over the four tasks.

Nº	Acronym	Partner	Country	Role
1	AU	AARHUS UNIVERSITET	DK	COO
2	VIA UC	VIA UNIVERSITY COLLEGE	DK	BEN
3	VTT	TEKNOLOGIAN TUTKIMUSKESKUS VTT OY	FI	BEN
4	3WALKS	ORTEGA NUERE MARIA CRISTINA	ES	BEN

5	FIC	FAINCE AB	SE	BEN
6	TUIASI	UNIVERSITATEA TEHNICA GHEORGHE ASACHI DIN IASI	RO	BEN
7	REGINNOVA NE	ASOCIATIA REGINNOVA NE	RO	BEN
8	OAMK	OULUN AMMATTIKORKEAKOULU OY - OULU UNIVERSITY OF APPLIED SCIENCES	FI	BEN
9	MODACC	AGRUPACIO CATALANA DEL TEXTIL I DE LA MODA	ES	BEN
10	ECBN	STICHTING EUROPEAN CREATIVE BUSINESS NETWORK	NL	BEN
11	EIT C&C	EIT CULTURE & CREATIVITY GMBH	DE	AP

2. Creating a Learning Community across Fashion and Related CCSI (Task 6.1)

2.1. Goals and Objectives

The CRAFT-IT4SD project aims to initiate a **Learning Community** that acts in the following **four** areas:
- **Innovative Business Models, Life Cycle Assessment and Circular Economy;**
- **Wardrobe for Sustainability;**
- **Empowering Consumers and Communities;**
- **Crafts and Emerging Technologies.**

In addition to these directions, each of them will benefit from the learning support of the consortium partners for **Transitioning with Emerging Crafts and Creative Professions.** Therefore, the CRAFT-IT4SD collaborative learning community will live beyond project termination to continue bridging the skills gap in CCSI within the triple transition: **green**, **digital**, and **social.** A virtual environment supports the learning community CCSI stakeholders in sharing results, exchanging ideas, and creating new collaborative pathways for impact.

2.2. Target Audience and Their Needs

The virtual learning community acts as an experimental space to enable new business models for creative industries and engage emerging technologies and sustainable innovations to stimulate through peer-to-peer skilling/re-skilling and knowledge transfer. Thus, the project builds a space where crafts manufacturing wisdom and authentic heritage values can be inherited and passed down from generation to generation, from artists and designers to innovation leaders and business communities, from actual creative professionals to future prospective students. The Learning Community has the potential primarily for a cross-sectoral merge of learning and training towards producing sustainable products that combine high creativity with digital, social and green transformation.

2.3. Expected Outcomes for Participants

By sharing good practices and experiences, the CRAFT-IT4SD learning community actively contributes to valuing the creative potential and bridging regional innovation gaps. Furthermore, this community co-creates new strategies

and learning/training action plans to increase the competitiveness of the creative sectors in Europe and give future learning and training systems an extended reality.

2.4. Select an Appropriate Online Platform for Hosting Discussions, Sharing Resources, and Collaboration

Traditional learning platforms are facing a significant overhaul in the rapidly evolving education landscape. While effectively delivering educational/training content, they often fail to facilitate the dynamic connections and professional growth necessary for success in today's workforce. The CRAFT-IT4SD Learning Community intends to integrate the networking capabilities of a large-scale available platform (for example, LinkedIn) with the resource management strengths of a dedicated website file repository. This hybrid model offers significant advantages over conventional (stand-alone) community learning platforms by effectively bridging the gap between academic learning and professional development. Leveraging LinkedIn's globally recognised professional network, this approach provides a powerful platform for collaborative learning communities to bridge skills gaps and gain valuable insights from stakeholders and relevant actors of CSSI thought leaders and showcase their evolving skill sets. What sets LinkedIn apart is its already well-established community of specialists across various fields. Participants benefit from direct access to these professionals and become part of a thriving community where real-world knowledge and industry trends are continuously shared and discussed.

Complementing LinkedIn's networking strength, the website file repository is a central hub for all course-related materials, ensuring seamless access and organisation. This unique combination ensures that all members are equipped with the necessary academic resources and actively engaged in a professional community that enhances their learning experience and career readiness.

By leveraging LinkedIn's extensive network and the organisational capabilities of a file repository, this approach cultivates a holistic learning environment that empowers participants to build professional connections, collaborate with peers and experts, and transition smoothly from academic study to professional practice. It will also detail these advantages, showcasing how this integrated model surpasses traditional e-learning platforms in preparing students for the challenges and opportunities of the modern workforce.

In summary, this approach harnesses the strengths of collaborative platforms, offering users a comprehensive peer-to-peer learning experience and preparing them for an immediate knowledge-acquiring goal accomplished by fostering their professional growth. However, it is essential to note that implementing this approach requires careful planning and management to address potential drawbacks.

2.5. Members of the Learning Community

Participation, including expected behaviour, respect for other's opinions, and rules for sharing content, is based on encouraging inclusivity, diversity, and constructive criticism. The LinkedIn Professional Community Policies (https://www.linkedin.com/legal/professional-community-policies) are applied to the CRAFT-IT4SD community.

2.6. Moderator, Content Creator and Collaborators

The project's LinkedIn page is https://www.linkedin.com/company/craft-it4sd/. On this project page, 4 sections (GROUPS) are created, one for each community group. Each group was appointed as a team consisting of a Moderator, a Content creator, and Collaborators. The groups correspond to the 4 pilots in the partner countries so that each group's moderator and content creator are members of the project team from the partner responsible for that pilot. Collaborators are project team members but can be from other partners; this role is assigned according to their experience and expertise in the field.

Group of the Learning Community	Link with WP4 (PILOT), WP5 and WP7	Partner	Moderator	Content Creator	Collaborators
Innovative business models	*Guiding the adaptation of Micro companies and SMEs to the new legal, sustainable and digital framework in the textile and fashion sector* *https://craft-it4sd.eu/pilot-cases/pilot-3-modacc/* *Climate impact assessment of current business models in the pilot sites*	MODACC	Juliana Penagos	Lidia Morcillo	David Garcia, Clara Nuria Solé Annu Markkula, Päivi Petänen, Hannamaija Tuovila, Silvia Forin,
Wardrobe for sustainability	*Traditional knowledge meets tomorrow's wardrobe for sustainability* *https://craft-it4sd.eu/pilot-cases/pilot-2-oamk/*	OAMK / OULU	Katarina Rauhala	Liisa Ronkainen	Tommi Karjalainen, Jan Julin, Outi Räsänen
Empowering consumers	*Combining craft with digital technologies for sustainability in garment design and consumer approaches* *https://craft-it4sd.eu/pilot-cases/pilot-4-via/*	VIA & AU	Rune Clausen	Anne Louise Bang	Malene Harsaae, Pia Hansen, Tine Hjort
Crafts and emerging technologies	*Additive manufacturing and 3D printing for sustainably crafted capsule collections* *https://u1h.c7f.myftpupload.com/pilot-cases/pilot-1-tuiasi-reginnova/*	TUIASI	Ionesi Dorin	Aura Mihai, Mariana Costea, Radu Firicel	Reginnova – Ecaterina Ailiesei
	Learning for the triple transition with emerging crafts and creative professions	ECBN, 3Walks (NL), EIT C&C (DE)	Herman Bashiron (ECBN)	Arkaitz Celaá (3Walks)	Cristina Ortega (3Walks)

Figure 2. CRAFT-IT4SD LinkedIn page https://www.linkedin.com/company/craft-it4sd/

INNOVATIVE BUSINESS MODELS

WARDROBE FOR SUSTAINABILITY

Figure 3. Visuals for the Learning Community groups

The MODERATOR facilitates the group and iterates on the community structure, content, and activities based on feedback and evaluation results. The moderator also informs the group members on the project's progress, results and outcomes, and best practices to keep the learning community content relevant and valuable. The groups will foster a continuous learning culture among community members. The tasks of the CONTENT creators and COLLABORATORS are:

- to gather relevant resources, articles, case studies, and multimedia content related to the focus areas. These materials are developed in the framework of the CRAFT-IT4SD project;
- to encourage members to share their insights, experiences, and relevant news articles;
- to create announcements and invite members/ large audiences to attend webinars, training workshops, and expert sessions with industry professionals to provide valuable insights and updates on the project results.

2.7. Networking and Collaboration

Each consortium partner will inform their collaborators and colleagues and invite them to follow the project page, particularly the community they would like to contribute to. Each group will facilitate networking opportunities for members to connect with peers, mentors, and experts in their field. Dedicated channels for specific topics will be initiated and conducted to foster focused discussions and collaboration. Members and followers will also be encouraged to collaborate on projects, share best practices, and provide feedback to one another.

2.8. Tasks and Timeline

The role of each group in the CRAFT-IT4SD Learning Community is to communicate the results obtained in the different stages of development of the project in a format that is accessible to the academic and business

community but also to people interested in the creative, craft and heritage industries. In this regard, each subgroup carries out the following activities:

- contribute to implement the guidelines and initiate collaborative learning communities;
- conduct activities in the learning communities (share results, exchange ideas, and create new collaborative pathways, peer-to-peer skilling/re-skilling and knowledge transfer);
- share good practice and learning activities among members.

The consortium regularly assesses the effectiveness of the CRAFT-IT4SD learning community in meeting its objectives. Every 6 months, the moderators of each group receive feedback from the consortium members regarding their experience, satisfaction, and suggestions for improvement. Moreover, the administrator of the project page (WP7) applies analytics and surveys to measure engagement, participation, and knowledge exchange.

2.9. Conduct activities in the learning community

Each group in the Learning Community carries out specific activities and periodically communicates results and ideas using the group page created on the project's LinkedIn page. https://www.linkedin.com/company/craft-it4sd/. The responsible partners prepare and publish short articles /blog posts /podcasts on topics that they explore and experiment on in the context of the piloting activities (WP4), WP5 and Dissemination (WP7). Contributing partners are AU, VIA UC, VTT, FIC, TUIASI, REGINNOVA, OAMK, MODACC, ECBN, 3WALKS, EIT C&C. These topics could be more extensively developed in training workshops, training contents, the manual or playbook, and scientific articles with which the partners will participate in various international events (WP7—Disseminations).

The titles, editorial plans for publishing the articles, and the responsible partner and group are bellowed.

Group of the Learning Community	Partner	Title of the Article	Publishing date
Innovative business models - Guiding the Adaptation of Micro companies and SMEs to the new legal, sustainable and digital framework in the textile and fashion sector	MODACC	How can environmental regulations shape the fashion industry?	April 25
	MODACC	On the spotlight: the role of certification and labelling in sustainable fashion	June 25
	MODACC	Digital transformation as a catalyst of change for micro companies and SMEs	Aug 25
	MODACC	Optimising your sustainable business model by using data analytics: a short guide for SMEs.	Oct 25
	MODACC	From compliance to integration: Value creation through legislation adoption.	Dec 25
Business models and pathways for sustainable fashion - Life Cycle Assessment and Circular Economy	VTT	Future development aspirations and alternatives in sustainable fashion business models	March25
	VTT	The market environment of sustainable fashion business models	May 25
	VTT	Sustainable fashion business models and customers	June 25
	VTT	Life Cycle Assessment: Analysing the climate impacts of SME fashion business models	Sept 25

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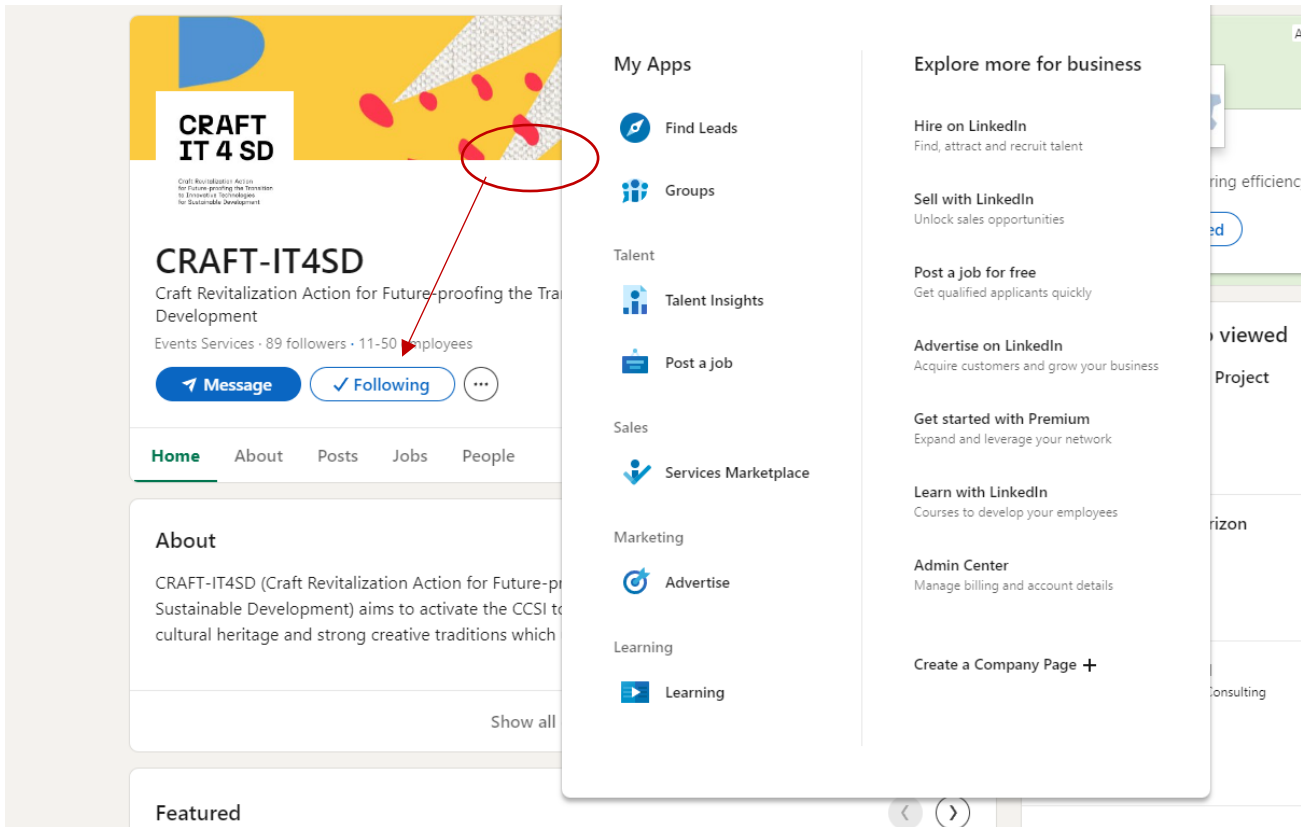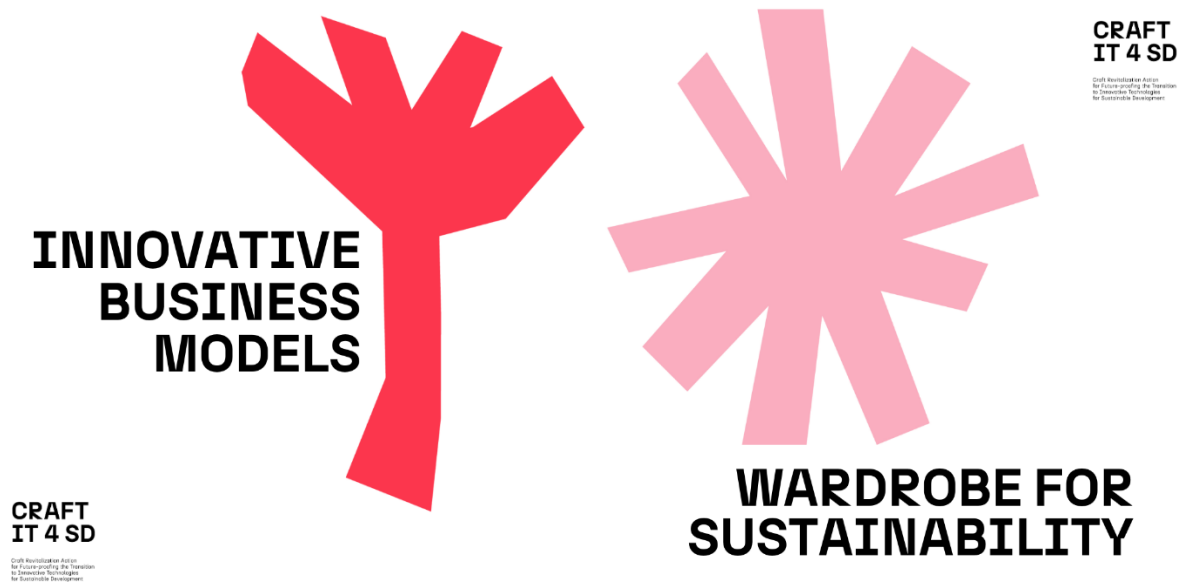|	VTT	New business models and pathways for sustainable fashion	Nov 25
Wardrobe for Sustainability - Traditional Knowledge Meets Tomorrow's Wardrobe for Sustainability	OAMK	Explore how traditional garment-making techniques can be integrated with sustainable fashion, fish skin, and fishnet fabric.	April 25
	OAMK	Sustainable wardrobe revolution: blending traditional knowledge with fashion trends/ Sustainable wardrobe innovation by reviving traditional knowledge through gamification	June 25
	OAMK	How do we integrate traditional crafts to ensure responsible garment production?	Aug 25
	OAMK	Innovations for the sustainable wardrobe of the future	Oct 25
	OAMK	Let's focus on the slow fashion movement!	Dec 25
Empowering consumers **Combining Craft with Digital Technologies for Sustainability in Garment Design and Consumer Approaches**	VIA/AU	The thing from the future: craft, culture and digital technologies	March 25
	VIA/AU	Value creation with AI	May 25
	VIA/AU	Value creation with digital carriers	July 25
	VIA/AU	Value creation with design sprints with micro-companies	Sept 25
	VIA/AU	Value validation through biometric methods	Nov 25
Crafts and emerging technologies **Additive manufacturing and 3D printing for sustainably crafted capsule collections**	TUIASI	Reviving authentic crafts with emerging technologies	March25
	TUIASI	Can we train future artisans to bring sustainable solutions to creative communities?	May 25
	TUIASI	Reimagining cultural heritage through sustainable approaches using 3D printing technologies/Case study on how 3D printing is reshaping traditional crafts and arts	July 25
	REGINNOVA	From tradition to innovation by integrating 3D printing and sustainable craft development	Sept 25
	TUIASI	How open are traditional artisans in embracing digital innovation for sustainability?	Nov 25
Crafts and emerging technologies **CCSI Green, Social, and Digital Skills (WP7)- Up- & reskilling for emerging crafts and creative professions**	3WALKS/ECBN	**Empowering the future: up- and re-skilling in emerging crafts and creative professions for the triple transition** Focus: this article will provide a broad overview of how the triple transition (green, social, digital) influences upskilling and reskilling needs in crafts and creative professions.	April 25
	3WALKS/ECBN	**The role of green, social, and digital skills in transforming the creative and cultural sectors** Focus: this article will discuss the systemic transformation occurring in CCIs due to green, social, and digital advancements.	June 25
	3WALKS/ECBN	**The role of green, social, and digital skills in transforming the creative and cultural sectors**	Aug 25

		Focus: this article will focus on the specific skills gap within creative and cultural professions.	
	3WALKS/ECBN,	**Triple transition in the creative economy: how up- and re-skilling is shaping emerging professions** Focus: this article will look at new job roles emerging within the creative economy due to the triple transition.	Oct 25
	3WALKS/ECBN,	**Future-proofing creativity: developing green, social, and digital competencies for the next generation of crafts and creative industries** Focus: this article will take a policy and strategic approach to ensure creative industries remain resilient and future-proof.	Dec 25

3. Exchanging Good Practices and Peer Learning for Creative Industries - Training Workshops (Task 6.2)

Training or innovation workshops will gather expertise from inside and outside the consortium to experiment towards identifying future pathways and recommendations to overcome barriers in CCSI education by integrating emerging technologies with a significant impact on stimulating creativity and preserving craft heritage. The training workshops will exploit European know-how, creative traditions, and values as represented by the CRAFT-IT4SD consortium and particularly the project's 4 pilot ecosystems and aim to develop cross-sectoral skills and multidisciplinary collaborations among students, education experts, SMEs, micro-companies, start-ups & entrepreneurs, crafts communities and artisans, designers and technology developers as well as local CCSI clusters. The CRAFT-IT4SD training workshops will also target and be presented to the experts of the Advisory Board.

3.1. Guidelines for Training Workshops

This section aims to provide the best methodology to carry out the training workshops predicted for the project, appropriately and suitably close to the target groups defined in the project proposal. The referred task is **T6.2 Exchanging Good Practices and Peer Learning for Creative Industries - Training Workshops,** with subtasks:

- T6.2.1   Prepare the guidelines and run 18 workshops/training sessions (6 partners x 3 iterations, every 6 months during piloting) in DK, FI, SE, NL, RO and ES that will facilitate the networking of stakeholders across the pilots. Min. 20 participants per session.
- T6.2.2   Regular Reporting- each organising partner will submit a workshop report (no later than 1 month after the activity is completed) integrated with the pilot iteration report (WP4) and based on guidelines prepared by the lead partner (AU).

3.2. Rationale for Organising CRAFT-IT4SD Training Workshops

The project proposes a multilevel training workshop scheme, introducing innovative content and tools to implement in the learning environment. These workshops will address the expertise of the Advisory Board and also expertise found outside the consortium to identify future pathways, actions and recommendations that will

contribute to overcoming barriers in CCSI education by assimilating emerging technologies with a significant impact on stimulating creativity and preserving craft heritage.

The training workshops conducted during and by the end of each of pilot iteration rely on the excellence in good practices developed during piloting and provide peer learning from and across the WP4 piloting activities, thus activating the total CRAFT-IT4SD learning community. Each pilot (RO, ES, FI, DK), as well as WP5 and WP7, will run 1 training workshop targeting specific project activities and results (see below) during each pilot iteration (6 workshops per pilot iteration, 18 workshops in total across the piloting period).

The workshops – co-created across pilots and partners – serve to share knowledge, good practices and innovation capacity and will form the basis for the CRAFT-IT4SD open, flexible learning formats and micro-courses (OERs, summer schools, webinar series). Eventually, workshops will be iterated during the replication phase.

Each CRAFT-IT4SD training Workshop should attract min. 20 participants, with documented target audiences (e.g. SMEs and micro companies, local CCSI cluster organisations, crafts communities, artisans, designers, technology developers, students, consumers/users). Training workshops will be announced for the CRAFT-IT4SD Learning Community (LinkedIn: https://www.linkedin.com/company/craft-it4sd/posts/?feedView=all) and followed through the CRAFT-IT4SD communication channels. Communication of training workshops is facilitated by the learning communities' moderators, creators and collaborators (see above) in collaboration with WP7.

WPs/Pilots	Training workshops in WP6	Partner
Innovative Business Models (WP4)	Guiding the adaptation of micro companies and SMEs to the new legal, sustainable and digital framework in the textile and fashion sector	MODACC (ES)
	Climate impact assessment, sufficiency-based business models, and open connector platform in sustainable climate transition (in WP5)	VTT (FI) and FIC (SE)
Wardrobe for Sustainability (WP4)	Traditional knowledge meets tomorrow's wardrobe for sustainability	OAMK (FI)
Empowering Consumers (WP4)	Combining crafts with digital technologies for sustainability in garment design and consumer approaches	VIA (DK)
Crafts and Emerging Technologies (WP4)	Additive manufacturing and 3D printing for sustainably crafted capsule collections	TUIASI (RO)
CCSI Green, Social, and Digital Skills (WP7)	Learning for the triple transition with emerging crafts and creative professions	ECBN/3Walks (NL)/EIT C&C (DE)

The CRAFT-IT4SD workshops will provide an experimental learning space that aims to include stakeholders beyond the project partners by including target audiences in the pilot progression across iterations. Training workshops can

be conducted onsite or online, with CRAFT-IT4SD target audiences to facilitate the networking of stakeholders across the pilots and to generate data and documentation to be shared across pilots and project partners.

Training workshops are to be documented, in accordance with the CRAFT-IT4SD ethics framework (consent, GDPR, IPR), in (edited) recordings (for online workshops/webinars), in CRAFT-IT4SD YouTube format (with CRAFT-IT4SD in- and outro), and in case-reports (including images). Documentation from training workshops will be edited to become part of the CRAFT-IT4SD training material.

The series of workshops constitute an experimental space, following the pilots' progression and their various pathways for impact from the CCSI driving the green transition and circular economy in combining heritage techniques and local knowledge with new technologies, thus providing pathways for cross-sectoral learning and innovation. In this capacity, the CRAFT-IT4SD training workshops may also include expert webinars, which will provide data and documentation for research papers, conference presentations, policy papers, and recommendations.

3.3. Target Groups in Training Workshops

The CRAFT-IT4SD training workshops will share and engage in European know-how, creative traditions, and values, aiming to develop cross-sectoral skills and multidisciplinary collaborations among **students, education experts, SMEs and micro companies, start-ups & entrepreneurs, craftspeople and -communities, artists, designers and technology developers.** Apart from the invited creative business people and innovation leaders highlighting how the cultural and creative industries could contribute to a sustainable climate transition (e.g. members of the Advisory Board or Policy Board, or representatives from 'sister-projects'), each workshop will facilitate the networking of stakeholders across the pilots.

Partners will collect data from the pilots (WP4) and also from WP5 and WP7 and provide input to learning 'exercises and topics to be addressed. Targeted specifically are students enrolled with the partner universities and young professionals to work alongside other stakeholders from companies in the field of creative industries.

3.4. Schedule

The training workshops will be conducted at the end of each pilot iteration, featuring a preparation phase (based on selected best workshop practices conducted during the pilot iteration), an implementation phase, and a reporting phase (M15-18; M22-25; M26-29). The schedule for running the training workshops will be defined as the project progresses to take advantage of the experimental and iterative progress with the piloting activities in WP4, knowing that piloting will be reiterated every six (6) months. Each iteration of the piloting (WP4) will test different features related to skills and knowledge transfer, policies, co-design, methodologies, sustainability and circular economy, crafts and traditional industries, etc. That is why, in turn, the iterative training sessions (T6.2) with each partner will not repeat the same curriculum/training program. Therefore, the learning resources (developed in T6.3) will be available and synergistic across all training workshops and partners.

3.5. The Framework

The workshops test various training solutions, in this case resulting from the piloting (WP4), training materials and delivery strategy and tools on a small scale and limited in time, before introducing the solutions through micro-courses more widely and permanently into the partner organisations and towards various target-groups with specific needs and expectations. The training workshops will provide learning in various formats and receive feedback to analyse different target groups' reactions and uptake of the feasibility and usability of the pilot outcomes (WP4). The training workshops are designed to provide material and contribute to adjustments to the developed material in the Learning Ecosystems/Hubs for fashion and related CCSI (task 6.3). Each training workshop has correspondent sub-activities, and all contribute to an effective implementation.

3.5.1. Preparation of the Training Workshop Sessions
Participants should be recruited from each partner's ecosystem/network. Partners will be active in communicating during the preparation stage to widen the audience. Announcements and awareness campaigns will be organised in **DK, FI, SE, NL, RO, and ES** to help engage the participants. The lead partners of the Learning Communities are responsible for identifying 'trainees' to be engaged in the training sessions - a **minimum of 20 per workshop**, such as students, creative business people, innovation leaders, stakeholders, and pilot partners.

3.5.2. Agenda and Topics to be Addressed in the Training Workshop
As a result of the piloting activities (WP4), the pilot partners have identified the most sensitive and high-impact topics according to the purpose of each piloting action, as have the partners contributing the CRAFT-IT4SD traversal learnings (WP5; WP7). Based on these, an agenda is proposed for each training workshop to use the lessons learned during the WP4 pilots and transform them into learning paths in WP6.

3.5.3. Deliverable Format. Languages and Organising Partners
Training workshops can be planned in any format chosen by the organiser: face-to-face, online, or hybrid, and can be conducted in the language most suited to engage the audiences/target groups. Video-recorded documentation may be subtitled in English, and the reporting with images and other documentation will also be in English and thus ready for sharing across our multilingual community and with future users. The workshop's main organiser is the Learning Community's lead partner. Partners from the consortium, especially partners with practical knowledge and expertise, will participate as facilitators.

3.5.4. Implementing the Training Workshops
The aims of the training workshop in each partner country are to extend the piloting outcomes on a larger scale, both national and international, and to test the learnings from the pilot iteration in a real context, for which the participants will give feedback – also on the learning formats applied. Furthermore, teachers, trainers and coaches can be invited to take part as expert observers.

3.5.5. Evaluation of Training Workshops and Lessons Learned
Each organising partner conducts the evaluation using a standard feedback template, guiding partners and participants through the evaluation metrics and setting the templates for collecting feedback. After receiving pilot

reports (with workshop material and feedback) from partners, AU partner (WP4/WP6) compiles the information and produces the integrated report for each iteration (summarising report). For the 1st iteration, planned for February to May 2025, the structure of the training workshops is presented in the bellow table below.

TRAINING WORKSHOP NO. 1 (1st iteration)

Period: February- May 2025

LEAD Partner/ Main organiser partner/ Facilitator/partner and Country	Learning Ecosystem/ ACTION PLAN (in WP6)	Link with (WP4, WP5 and WP7)	Title, Objective and Agenda (topics) to be addressed in the Training Workshops	Participants		DATE and Format (face2 face, online or hybrid)
				Organisations (consortium partners+ stakeholders)	Target group. Number of participants	
MODACC ES-Spain	Innovative Business Models	Guiding the adaptation of micro companies and SMEs to the new legal, sustainable and digital framework in the textile and fashion sector	TITLE: Activation workshop Objective/Aim: Empower participants to drive and align their company with a systemic vision that integrates sustainability, circularity, and impact measurement, enabling them to lead change effectively and strategically. We also want to create a common language for sustainability among our networks. Specific Objectives: ● Identify key sustainability and circularity challenges and transform them into business opportunities. ● Develop actionable strategies to implement sustainable and circular solutions along the fashion value chain. ● Strengthen leadership skills by creating decision-making scenarios. Agenda/Topics: 10.00 - 10.30 Welcome and starting point 10.30 - 11.30 Life cycle vision 11.30 - 11.50 Break 11.50 - 12.10 Circular economy training capsule 12.10 - 13.00 Group ideation 13.00 - 13.30 Conclusions and closing	MODACC + INÈDIT (consultancy enterprise and partner of MODACC)	Micro companies and SMEs that are starting or on the way to transition towards more sustainable practices. Young professionals who are interested in acquiring sustainability skills. Target # of participants: 15 Total # of possible participants: 25 # of participants achieved:	20 of February 2025 Face2face
FIC SE - Sweden		BUSINESS MODELS (WP5) and pathways for sustainable fashion /Life Cycle Assessment and Circular Economy	TITLE: Collaboration/Cocreation Workshop (title TBC) Objective/Aim: Understand the legal requirements of the European Union's Digital Product Passport and beyond. Create a digital layer and explore new opportunities and user-based experiences for fashion brands and businesses. Agenda/Topics: Detailed agenda TBC - Introduction to upcoming global legislation, with a focus on regulations by the European Union and the Digital Product Passport - Partner with fashion designer from curated list to develop a new concept - Prepare concepts and present to group - Feedback - Q&A	FIC +FF	20 Targets: SMEs, business leaders, designers, entrepreneurs	May 2025 tbc

OAMK FI-Finland	Wardrobe for Sustainability	Traditional knowledge meets tomorrow's wardrobe for sustainability	TITLE: Performance costumes from traditional fish skin are implemented in recycled fishnet fabric. Objective/Aim: To engage local CCSI and students in the traditional material of fish skin as well as the use of NFC tags. Agenda/Topics: To make gloves out of fabric and fish skin, which will be used as part of an Oamk dance show. The workshop will entail implementing NFC tags onto the gloves.	OAMK	20 targets in 2 workshops: SMEs, students, designers, entrepreneurs	March 2025
			TITLE: Using Gamification in garments to enhance awareness and skills Objective/Aim: To teach local CCSI how they could use gamification on their products to teach consumers news skills or enhance awareness on a certain topic Agenda/Topic: To demonstrate the making of the Fish to Wonder Game of Oamk's pilot 1 and give advice on game making in general	OAMK	15 targets: SMEs, students, designers, entrepreneurs	May 2025
VIA DK-Denmark	Empowering Consumers and Communities	Combining craft with digital technologies for sustainability in garment design and consumer approaches	TITLE: Digital Carriers and the Thing from the Future Objective/Aim: This workshop equips participants with the knowledge and skills to explore the potentials and challenges of digital carriers with a specific focus on NFC tags in future business and design scenarios. Agenda/Topics: Future Scenarios • Exercise developing future scenarios using the tool 'The Thing from the Future' NFC tags: introduction and content creation • Introduction to NFC technology • Understanding how to use NFC tags as digital carriers • Developing user relevant content for a digital platform	VIA	25 Students & Lecturers	Physical workshop May 2025
TUIASI REGINNOVA RO-Romania	Crafts and Emerging Technologies	Additive manufacturing and 3D printing for sustainably crafted capsule collections	TITLE: Additive manufacturing and 3D printing in sustainable fashion Objective/Aim: To introduce additive manufacturing and 3D Printing and to highlight its role in creating sustainable fashion collections Agenda/Topics: • Overview of sustainable challenges in the fashion industry/ Why are sustainability and innovation in fashion the key to the future? • Understanding 3D Printing in Fashion – types and materials used • How could 3D printing be integrated into the design process? • Integrating traditional craft with 3D Printing • Two case studies of sustainable capsule collections developed by TUIASI students: Cucuteni and Easter Egg • 3D printing of fashion accessories: handbags and shoes • Practical session- Hands-on demonstration of 3D design software and printing	-TUIASI -REGINNOVA -min.5 companies	20 Students, Artisans/Crafts persons, Experts from companies	May 2025, face2face

			• End-up session /Feedback. Challenges and QA			
ECBN /3Walks NL- Netherlands	CCSI Green, Social, and Digital Skills (WP7)	Up- & reskilling for emerging crafts and creative professions	**Title**: *To be discussed with ECBN team* Workshop at Creative Skills Week			22-26 sep. 2025 in Prague (TBD)
			Objective/Aim: t*o be discussed with ECBN team*			
			Agenda/Topics: t*o be discussed with ECBN team*			

3.6. Reporting

After conducting a training workshop, the organising partner will submit a workshop report integrated with the WP4-piloting report. (at the latest, 1 month after the pilot iteration has been completed). The workshop report will state the aim and methods of the workshop, how the workshop is connected to the pilot activities, and the overall CRAFT-IT4SD objectives. The pilot report will provide data, documentation, and interim results from the piloting activities and the workshops, as well as challenges encountered and suggested experimental ways forward; for workshops in M22-25 and M26-29, the report will also provide how the respective workshops connect to the overall iterative pilot/project progression. The report will also provide suggested communication/dissemination of the pilot results and the results from the training workshops beyond the training material delivered for the learning environment and the micro-courses (e.g. will the workshop be part of an existing or future study or training programme, will the results be part of a research paper or conference presentation etc.)

The documentation provided with the report includes 1) communication activities during preparation – blog posts, sharing across communities, stakeholders, and sister-projects, etc.; 2) documentation: e.g. online recordings, video documentation, images, testimonials, and feedback from workshop implementation and 3) a case-description as a follow-up/reflection activity. All documentation should come with consent to be edited and eventually published online with the CRAFT-IT4SD training material. Workshop participants are documented by the number and segments of target audiences (e.g. SMEs and micro companies, local cluster organisations, crafts communities, artisans, designers, technology developers, students and programme, consumers/users). Reports on Training workshops conducted will be summarised by the lead partner at the latest 1 month after receiving the individual reports. These summarising reports (for Training Workshops, all completed with MS 6.2; M26) will be presented to the Advisory Board and Policy Board, particularly to point towards policy recommendations. The timeline for preparing, running and submitting the workshop reports is presented here:

WP4 Pilots	Training Workshops	Preparation	Run	Extended report and pieces of evidence	Summarising report for publishing
1st iteration	Workshop 1: 6 training workshops in ES, FI, DK, RO, SE, NL	February 2025	February-May 2025	May 2025	June 2025
2nd iteration	Workshop 2: 6 training workshops in ES, FI, DK, RO, SE, NL	October 2025	November-December 2025	December 2025	January 2026
3rd iteration	Workshop 3: 6 training workshops in ES, FI, DK, RO, SE, NL	February 2026	March-April 2026	April 2026	May 2026

4. Development of Learning Ecosystems/Hubs for Fashion and Related CCSI (Task 6.3)

The CRAFT-IT4SD project aims to develop **Learning Ecosystems/Hubs** for fashion and related CCSI following a 'step by step', progressive and well-defined sequence:

- Set up 4 **Learning Ecosystem Teams (LET)**
- Elaborate and validate the **LET Capacity Building Procedure**
- **Develop Action Plans (AP).**
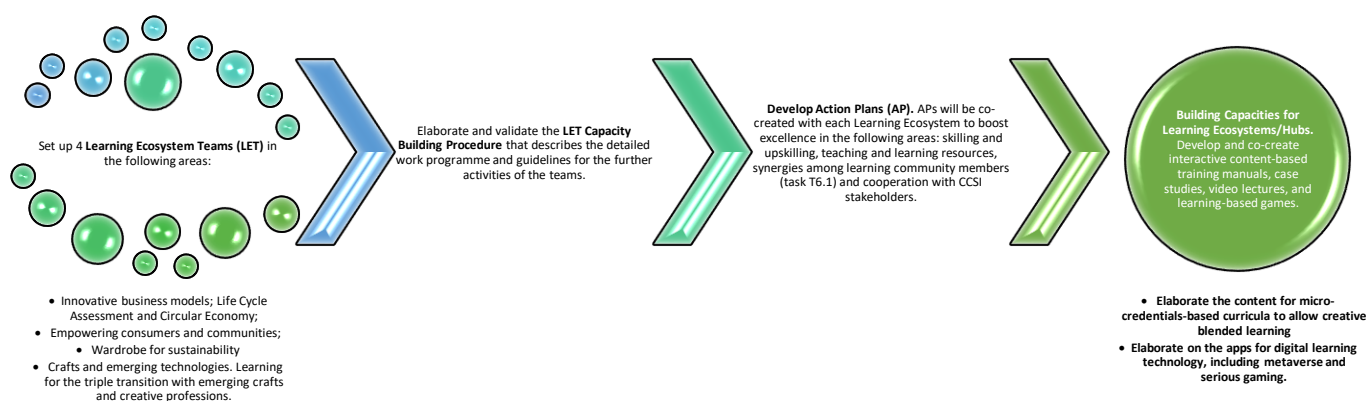- **Building Capacities** for Learning Ecosystems/Hubs.

Set up 4 **Learning Ecosystem Teams (LET)** in the following areas:

- Innovative business models; Life Cycle Assessment and Circular Economy;
- Empowering consumers and communities;
- Wardrobe for sustainability
- Crafts and emerging technologies. Learning for the triple transition with emerging crafts and creative professions.

Elaborate and validate the **LET Capacity Building Procedure** that describes the detailed work programme and guidelines for the further activities of the teams.

Develop Action Plans (AP). APs will be co-created with each Learning Ecosystem to boost excellence in the following areas: skilling and upskilling, teaching and learning resources, synergies among learning community members (task T6.1) and cooperation with CCSI stakeholders.

Building Capacities for Learning Ecosystems/Hubs. Develop and co-create interactive content-based training manuals, case studies, video lectures, and learning-based games.

- Elaborate the content for micro-credentials-based curricula to allow creative blended learning
- Elaborate on the apps for digital learning technology, including metaverse and serious gaming.

Figure 4. Craft-IT4SD methodology for capacity building of the Learning Ecosystems

The CRAFT-IT4SD consortium has created **four (4) Action Plans** that will go beyond the existing framework identified at the partner or local/regional level by co-creating new **Learning Ecosystems/Hubs** in the following areas:

- **Innovative Business Models. Life Cycle Assessment and Circular Economy;**
- **Wardrobe for Sustainability;**
- **Empowering Consumers and Communities;**
- **Crafts and Emerging Technologies.**

The new Learning Ecosystems/Hubs are built upon synergies and outstanding excellence in education in the partner countries. Local communities and stakeholders empower the knowledge and skills necessary to help European CCSI become better prepared to adapt to and contribute to the climate transition to a knowledge-based economy and a creative, digital and sustainable society. These innovative Learning Ecosystems/Hubs are based on quadruple helix partnerships, with partners collaborating and providing transregional and cross-sectorial mobility experiences and applied innovation in fashion and related cultural and creative education. To support inter and intra-pilot synergies,

the consortium decided to include a new area that each of the Action Plans will address, namely the **Learning for the Triple Transition with Emerging Crafts and Creative Professions.**

The advanced models for skills development, re-skilling and upskilling, pathways of running transnational training and mobility, and social issues referring to social responsibility, environmental and climate change will be integrated into these Learning Ecosystems/Hubs. Also, knowledge management of intellectual property rights (IPR) for the fashion and related creative sectors represents a distinctive section that complements these learning ecosystems/hubs. The consortium follows the same methodology for developing each of the four Learning Ecosystems:

- Setting up Learning Ecosystem Teams (LET)
- Developing Action Plans (AP) by each team
- Building Capacities for Learning Ecosystems/Hubs in the following two directions:
    - Elaborate the **content for micro-credentials-based curricula** to allow creative blended learning
    - Elaborate the **Apps for digital learning technology**, including metaverse and serious gaming.

4.1. Set up the Learning Ecosystem Teams (LET)

The leader, co-leader, and members of each Learning Ecosystem Team (LET) were nominated, with the support of project partners for development and stakeholders for validation. The result of this activity consists of a Capacity Building Procedure that describes the detailed work programme and guidelines for the teams' further activities.

4.2. Developing Action Plans (AP)

Action Plans (AP) are co-created for each Learning Ecosystem to boost excellence in the following areas: skilling and upskilling, teaching and learning resources, synergies among learning community members (task T6.1) and cooperation with CCSI stakeholders. These Action Plans will also take the transition of the findings of Lifecycle Assessments and New Business Models (WP5), as the added value of the piloting demonstrated in WP4, to the next level by designing and implementing the new Learning Ecosystems.

4.3. Building Capacities for Learning Ecosystems/Hubs

A Learning Ecosystem serves as a HUB consisting of two main components:

- **Core Team:** This team, known as the Learning Ecosystem Team (LET), is made up of members from the CRAFT-IT4SD consortium.
- **Stakeholders and Beneficiaries:** This group includes participants in activities, students, researchers and academics, artisans, and craft enthusiasts. These individuals enhance the Learning Ecosystem by sharing knowledge, skills, best practices, and more.

Building Capacities for **Learning Ecosystems/Hubs** is based on the following key components: **People, Content, Learning Technology, Learning Culture** and **Strategy**. The CRAFT-IT4SD consortium will develop interactive content-based training manuals, video lectures and learning-based games following the above-mentioned principles. The

content will be structured into micro-credentials-based curricula to allow creative blended learning, where the role of the trainer/lecturer is supplemented by digital learning technology, including metaverse and serious gaming. A European learning platform will be, and the new training content will be uploaded. This activity will parallel the training workshops (T6.2), and the new training content will be enriched and validated throughout follow-up training sessions. Access to the developed content will be free, copyright protected as open source, based on registration credentials.

Each Learning Ecosystem Team (LET) elaborated on Building Capacities for Learning Ecosystems based on a common template for collecting the key components of the following **four (4) MICRO-CREDENTIAL BASED CURRICULA.**

Micro-credentials have emerged as a transformative force in higher education, offering flexible, targeted learning opportunities that align closely with industry needs and lifelong learning paradigms. This comprehensive overview examines the current state of micro-credentials, exploring their definitions, implementation strategies, benefits, challenges, and future directions, drawing exclusively from recent scientific literature[1]. In a time marked by fast-paced technological progress and changing workforce needs, higher education institutions must constantly adapt to promote lifelong learning and career flexibility. By recognising and certifying particular skills and competencies, micro-credentials can boost student motivation, engagement, and employability in an ever-evolving job market[2].

Technological innovations, such as AI and XR, are transforming the learning process by improving personalisation and interactivity. Micro-credentials are increasingly becoming a key component of formal education, offering tailored learning experiences and blurring the distinctions between formal and informal learning paths. In response to shifts in the labour market, Micro-credentials quickly adapt to meet new skill demands, helping to close skills gaps and improve employability. The concept of stackable credentials and credential portfolios is reshaping learning pathways, enabling learners to build a flexible and comprehensive skill set. Blockchain technology guarantees the credibility and transferability of micro-credentials, fostering trust in the digital era. Ultimately, the global spread of micro-credentials links learners across the world, creating a borderless educational landscape [3,4].

4.3.1. Defining Micro-Credentials

Micro-credentials are succinct, competency-based recognitions awarded for the mastery of specific skills or knowledge areas. They differ from traditional degrees by focusing on discrete competencies, allowing learners to showcase abilities pertinent to particular tasks or professions, also in a cross-sectoral environment. The European MOOC Consortium defines a micro-credential as a "sub-unit of a credential that confers a minimum of five (5) ECTS and could accumulate into a larger credential or be part of a portfolio"[5]. Micro-credentials offer targeted, in-depth

[1] Metaskills4TCLF project. (2024). Alliance for Cooperation on Digital and Circular Economy Skills for the TCLF sector across Europe, (101111842). Retrieved from https://www.metaskills4tclf.eu/

[2] Alenezi, M., Akour, M., & Alfawzan, L. (2024). Evolving microcredential strategies for enhancing employability: Employer and student perspectives. Education Sciences, 14(12), Article 1307. https://doi.org/10.3390/educsci14121307

[3] Ahuja, V. (2024). Microcredentials: Empowering learners for career advancement. In Global Perspectives on Micro-Learning and Micro-Credentials in Higher Education (pp. 29–45). https://doi.org/10.4018/979-8-3693-0343-6.ch003

[4] Boyer, N. R., & Griffith, M. L. (2023). Technology enablement of the skills ecosystem. International Journal of Information and Learning Technology, 40(4), 281–294. https://doi.org/10.1108/IJILT-12-2022-0229

[5] Varadarajan, S., Koh, J. H. L., & Daniel, B. K. (2023). A systematic review of the opportunities and challenges of micro-credentials for multiple stakeholders: Learners, employers, higher education institutions, and government. International Journal of Educational Technology in Higher Education, 20(13). https://doi.org/10.1186/s41239-023-00381-x

learning and acknowledge expertise or proficiency in particular skills[6]. The key stages for developing micro-credentials[7] are **Conceptualisation, Design, Testing and Refinement.**
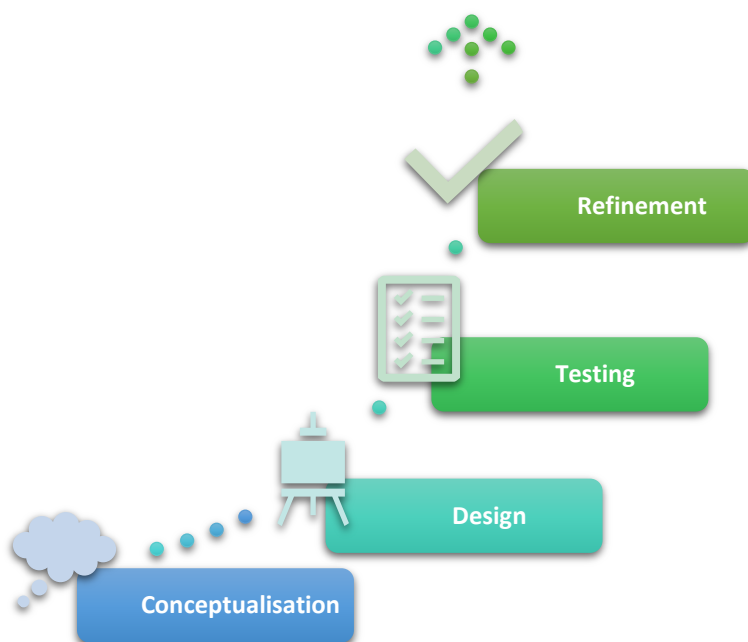

Figure 5. Craft-IT4SD steps for developing Micro-credentials courses (based on Design Thinking methodology)

Creating micro-credentials is an evolving, iterative process that requires thoughtful planning, active collaboration and co-creation, and a commitment to maintaining quality. By following a well-structured approach, developers can design micro-credentials that effectively connect education with industry, equipping learners with essential, market-relevant skills[8].

In line with EU micro-credential guidelines, a set of unified standards was developed for all collaborators involved in curriculum design. As noted in the literature, essential components of a micro-credential are crucial in ensuring that key stakeholders, including learners, employers, and educational institutions, fully understand the meaning and impact of these credentials (Cedefop, 2022)[9]. The components defining micro-credentials differ across formal and informal education and training systems and frameworks. However, the most frequently encountered elements include:

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[6] Moore, R. L., Lee, S. S., Pate, A. T., & Wilson, A. J. (2025). Systematic review of digital microcredentials: Trends in assessment and delivery. Distance Education. https://doi.org/10.1080/01587919.2024.2441263

[7] Clausen, J. M. (2022). Learning to fly: Development and design of a micro-credentialing system for an educator preparation program in the absence of a required educational technology course. TechTrends, 66(2), 276–286. https://doi.org/10.1007/s11528-021-00673-x

[8] Kaufman, J. H., Christianson, K., Wolfe, R. L., Tekkumru-Kisa, M., & Doss, C. J. (2023). Designing and implementing micro-credentials to support STEM teaching. RAND Corporation. https://www.rand.org/

[9] Cedefop (2022). Microcredentials for labour market education and training: first look at mapping microcredentials in European labour-market-related education, training and learning: take-up, characteristics and functions. Luxembourg: Publications Office. Cedefop research paper, No 87. http://data.europa.eu/doi/10.2801/351271

- Title of the micro-credential
- Learning outcomes
- Required workload for learning outcomes (ECTS)
- Level of qualification (EQF, QF, EHEA)
- Assessment strategies
- Ways to participate in learning activity
- Standardization and ensuring quality

4.3.2. Title of the Micro-Credential

The title of a micro-credential serves as a brief yet informative representation of the learning experience, indicating the specific skill or knowledge the credential signifies. A clear and compelling title is crucial for offering an immediate understanding of the learning outcomes it encompasses.

4.3.3. Learning Outcomes

Learning outcomes are the specific skills, knowledge, and competencies a learner is expected to acquire upon completing a micro-credential. They should be measurable, achievable, and relevant to the credential's purpose. Linking micro-credentials to clearly defined learning outcomes can support their integration into qualifications frameworks and affirm their strong relationship to the appropriate occupational profiles and qualifications (Cedefop, 2023).[10] The ESCO portal is a valuable tool for identifying knowledge/skills and adapting them to a new course (ESCO, 2024).[11]

4.3.4. Required Workload for Learning Outcomes

The required workload, often expressed in the **European Credit Transfer and Accumulation System (ECTS)**, quantifies the time and effort required to achieve the learning outcomes. The duration of learning experiences leading to micro-credentials varies considerably, depending on the provider and the intended purpose. Additionally, self-paced platforms such as Udacity, Coursera, and EdX further enhance flexibility by allowing learners to progress according to their availability (Cedefop, 2022).[12] The **European Credit Transfer and Accumulation System (ECTS)** is a standardised system used across the European Higher Education Area (EHEA) to facilitate the transfer and accumulation of academic credits. ECTS credits are designed to reflect students' workloads. One ECTS Credit typically represents 25 to 30 hours of total student workload. This includes all activities, such as lectures, independent study, laboratory/group/project work, research, exams, and assignments. The application of ECTS credits can vary slightly between countries or institutions, especially in terms of how work is distributed between lectures and independent study.

A **standard full-time academic year** (in many countries) usually consists of **60 ECTS credits**, meaning about **1,500 to 1,800 hours** of work across the entire year. For a micro-credential, the number of hours and credits would vary

[10] Cedefop (2023). *Microcredentials for labour market education and training: microcredentials and evolving qualifications systems. Luxembourg: Publications Office. Cedefop research paper, No 89. http://data.europa.eu/doi/10.2801/566352*

[11] ESCO (2024). *Skills and competencies. https://esco.ec.europa.eu/en/classification/skill_main*

[12] Cedefop (2022). *Microcredentials for labour market education and training: first look at mapping microcredentials in European labour-market-related education, training and learning: take-up, characteristics and functions. Luxembourg: Publications Office. Cedefop research paper, No 87. http://data.europa.eu/doi/10.2801/351271*

depending on its scope. For example, a micro-credential might be worth **5 or 10 ECTS**, meaning it would involve around **125 to 300 hours** of study in total. Compared to a study program, the micro-credentials reflect a smaller scope of work compared to full-degree programs. Moreover, a micro-credential aimed at developing particular/job-related skills or competencies could be structured as part of an training program designed to deliver focused and efficient learning outcomes that cater to the specific needs of learners (Cedefop, 2023; European Commission, 2020) [13],[14]

4.3.5. Level of Qualification Offered by a Micro-Credential
The level and cycle of a micro-credential indicate the degree of complexity and depth of the learning experience, often corresponding to frameworks like the European Qualifications Framework (EQF), the Qualifications Framework (QF), and the European Higher Education Area (EHEA). These frameworks serve as a guide for comparing qualifications across various educational systems. Additionally, aligning with such frameworks benefits both learners and employers by helping them understand the complexity of micro-credentials and their educational context, promoting recognition and transferability across borders[15].

4.3.6. Assessment Strategies
Efficient assessment is crucial for ensuring the credibility of micro-credentials. Competency-based evaluations that require learners to showcase the practical application of their skills are highly valued. Incorporating evidence, such as project work or hands-on demonstrations, within digital badges increases the transparency and reliability of the credentialing process. Nonetheless, inconsistencies in assessment methods and the absence of standardised practices present challenges to the dependability and acceptance of micro-credentials across various contexts.

Globally, a unified effort exists to integrate micro-credentials into existing qualification frameworks. The European approach focuses on aligning them with the European Qualifications Framework (EQF), to ensure consistency and portability across member states. These policy efforts highlight the growing recognition of the need for adaptable learning pathways that address the evolving demands of contemporary labour markets[16].

Typical assessment methods encompass quizzes and brief tests conducted periodically during the course to gauge learners' comprehension in real-time while offering instant feedback. Furthermore, hands-on exercises enable participants to put newly acquired knowledge into practice within structured settings, allowing them to track their development. Micro-credential evaluations should be closely tailored to the precise abilities and expertise the credential seeks to develop. Since many individuals pursuing micro-credentials are working professionals, assessments should be adaptable and easily accessible. Prioritising practical, real-world applications and prompt feedback, these evaluations differ from conventional academic assessments by concentrating more on competency-based and professional growth.

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[13] *Cedefop (2023). Microcredentials for labour market education and training: microcredentials and evolving qualifications systems. Luxembourg: Publications Office. Cedefop research paper, No 89. http://data.europa.eu/doi/10.2801/566352*

[14]*European Commission. (2020). Digital Education Action Plan 2021-2027. https://ec.europa.eu/education/sites/default/files/document-library-docs/deap-swd-sept2020_en.pdf*

[15] *Cedefop (2023). Microcredentials for labour market education and training: microcredentials and evolving qualifications systems. Luxembourg: Publications Office. Cedefop research paper, No 89. http://data.europa.eu/doi/10.2801/566352*

[16] Salmon, M. (2023). Drivers of the global push for microcredentials in higher education: Flexibility and employability in contemporary university systems. Perspectives: Policy and Practice in Higher Education, 27(4), 179–187. https://doi.org/10.1080/13603108.2023.2229767

4.3.7. Models to Participate in the Learning Activity

Engagement in educational activities for a micro-credential can take multiple forms, highlighting the adaptability and accessibility of these programs. Micro-credential structures, endorsed by the European Commission and numerous academic institutions, are crafted to address the varied needs of learners, offering diverse avenues for participation. Across Europe, standard modes of involvement in micro-credential learning include online education, blended (hybrid) learning, face-to-face instruction, workplace-integrated training, peer-to-peer interaction and collaboration, competency-driven engagement, interactive and gamified learning experiences, assessment-centred participation, recognition of prior learning (RPL), and open learning opportunities. Many micro-credential initiatives are designed flexibly, catering to a broad spectrum of learners, including working professionals. This inclusive methodology supports learning preferences and career aspirations, fostering practical, accessible, and forward-thinking educational experiences.

4.3.8. Standardisation and Quality

Micro-credentials need to follow well-defined standards and quality assurance procedures to gain broader recognition. According to the OECD (2021), it is vital to establish clear definitions and frameworks that guarantee the credibility and value of micro-credentials for both learners and employers[17].

4.3.9. Implementation in Higher Education

Micro-credential integration into higher education has accelerated, particularly in response to the necessity of more adaptable learning solutions. Universities are increasingly adopting micro-credentials to provide flexible, online learning experiences that cater to diverse student populations, including non-traditional and international learners. These credentials often utilise digital badges to visually represent acquired skills, enhancing their portability and recognition across digital platforms.

4.3.10. Benefits of Implementing Micro-Credentials

Learners	• Micro-credentials offer personalized learning pathways, enabling individuals to upskill or reskill efficiently. They provide tangible evidence of specific competencies, enhancing employability and career progression
Employers	• Micro-credentials allow employers to identify candidates with precise skills tailored to their organisational needs, facilitating targeted recruitment and professional development
Higher Education Institutions	• For educational providers, micro-credentials represent an opportunity to innovate curricula, attract a broader student base, and respond dynamically to evolving industry demands
Governments	• Policymakers view micro-credentials as tools to enhance workforce readiness and address skills gaps, contributing to economic development and competitiveness

Figure 6. Overview on the benefits of implementing a micro-credentials-based system

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[17] OECD. (n.d.). Quality and value of micro-credentials in higher education: Preparing for the future. OECD. https://www.oecd.org/

The implementation of micro-credentials depends significantly on digital platforms that facilitate their creation, issuance, and validation. Learning Management Systems (LMS) integrated with digital badging platforms are frequently used to distribute and showcase micro-credentials.

These systems enable the monitoring of learner progress and the consolidation of credentials into detailed portfolios. However, a notable gap remains in incorporating AI-powered tools for both formative and summative assessments within micro-credentialing programs[18].

4.3.11. Challenges and Considerations[19]

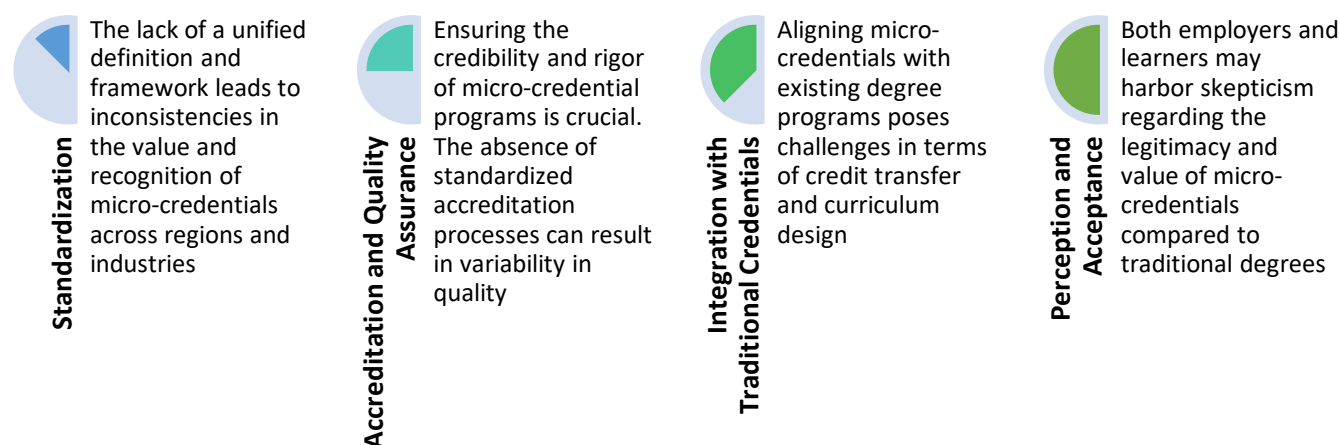| Standardization	Accreditation and Quality Assurance	Integration with Traditional Credentials	Perception and Acceptance
The lack of a unified definition and framework leads to inconsistencies in the value and recognition of micro-credentials across regions and industries	Ensuring the credibility and rigor of micro-credential programs is crucial. The absence of standardized accreditation processes can result in variability in quality	Aligning micro-credentials with existing degree programs poses challenges in terms of credit transfer and curriculum design	Both employers and learners may harbor skepticism regarding the legitimacy and value of micro-credentials compared to traditional degrees

Figure 7. Overview on challenges when implementing a micro-credentials-based system

4.3.12. Recognition in the Job Market and Employer Views

Designing effective micro-credentials involves a systematic and collaborative approach to ensure they meet the needs of learners, employers, and educational institutions. For micro-credentials to effectively boost employability, their recognition in the job market is essential. Employers are more likely to value credentials aligned with industry-specific standards and linked to job performance outcomes. Alenezi et al. (2024) emphasise that incorporating micro-credentials into traditional academic programs can improve employability for both students and employers, demonstrating mutual benefits[20].

Although micro-credentials offer many advantages, they face challenges in achieving widespread recognition. Inconsistent assessment approaches and the absence of standardised procedures can limit their acceptance in

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[18] Ifenthaler, D., Bellin-Mularski, N., & Mah, D.-K. (Eds.). (2016). Foundation of digital badges and micro-credentials: Demonstrating and recognizing knowledge and competencies. Springer Nature. https://doi.org/10.1007/978-3-319-15425-1

[19] Pouliou, A. (2025). Deepening the focus on microcredentials—Labour market sector relevance, quality, and inclusion: A critical commentary. Distance Education. https://doi.org/10.1080/01587919.2025.2453457

[20] Alenezi, M., Akour, M., & Alfawzan, L. (2024). Evolving microcredential strategies for enhancing employability: Employer and student perspectives. Education Sciences, 14(12), Article 1307. https://doi.org/10.3390/educsci14121307

different contexts. Pouliou (2025) highlights that while micro-credentials can expand learning opportunities, their success depends on addressing the labour market's sector-specific needs, quality assurance, and inclusivity[21].

The recognition of micro-credentials is a complex matter that requires aligning education with the workforce's needs, ensuring quality, and overcoming barriers to acceptance. Continuous research and stakeholder engagement are critical to enhancing the credibility and value of micro-credentials in the employment market.

4.4. Elaborate the Curricula of the CRAFT-IT4SD Micro-Credentials

The **CRAFT-IT4SD** project is focused on integrating **crafts, fashion, and sustainability.** To reflect the increasing demand for sustainable practices in the creative industries, the curricula for the **CRAFT-IT4SD micro-credentials** are aligned with the project's methodological approach. Thus, the following **KEY Knowledge** and **Skills** were included:

- o **Design Thinking** and **Problem-Solving** through hands-on design challenges, prototyping, and feedback sessions, allowing learners to solve real-world problems around sustainable fashion and crafts.

- o **Craft Techniques** and **Digital Innovation.** The CRAFT-IT4SD micro-credentials cover traditional craft techniques and the exciting realm of digital innovation. We blend craftsmanship with new technologies, such as digital tools and 3D printing, to push the boundaries of what's possible in sustainable fashion design. The new learning content explores how innovation in traditional craft techniques can be applied to modern sustainable fashion design, opening up a world of possibilities. Given the increasing role of digital technologies in fashion and creative industries, the CRAFT-IT4SD training workshops will demonstrate how to use design software or manage online businesses for crafts or fashion products, along with the ethical considerations for digital practices in sustainability.

- o **Business Models** and **Empowering the Consumers**: Understanding sustainable fashion and market dynamics is a key focus of this micro-credential. It's not just about learning, but about preparing learners for the industry's current and future challenges. This micro-credential is focused on understanding the new legislation and engaging with consumers who prioritise sustainability. New business models based on sustainable practices in craft and fashion include eco-friendly materials, reducing waste, circular economy, ethical sourcing, environmental impact, and how sustainability can be integrated into production processes.

- o **Collaborative Work.** A key feature of the CRAFT-IT4SD project approach is co-creation. Therefore, the curricula will include collaborative projects where learners co-create solutions, products, or designs. This will simulate a real-world craft and fashion design environment where collaboration with clients, artisans, and other designers is crucial.

- o **Cultural and Social Impact**. Incorporating the cultural heritage and social dimensions of crafts, fashion, and sustainability is not just an option, it's essential. The CRAFT-IT4SD micro-credentials

[21] Pouliou, A. (2025). Deepening the focus on microcredentials—labour market sector relevance, quality and inclusion: a critical commentary. Distance Education, 1–10. https://doi.org/10.1080/01587919.2025.2453457

include learning about the preservation of traditional crafts, the role of artisans in the community, and the social responsibility that comes with sustainable production practices. This holistic approach to sustainability considers not just the environmental impact but also the broader societal implications.

To ensure that the curricula align with the **design thinking** and **co-creation** methodologies, the four curricula for micro-credentials apply the innovative learning formats:

- o **Interactive Workshops** to allow participants to create, test, and prototype their ideas.

- o **Collaborative Learning**. Practical activities and exercises include group activities and projects encouraging peer-to-peer learning and collaboration.

- o **Iterative Learning**. The content of the micro-credentials is a "working-in-progress" activity based on design thinking's "build, test, and iterate".

- o **Real-World Applications** where the learners will work with real-world case studies, pilot projects, or collaborations with artisans and sustainable fashion brands.

For the CRAFT-IT4SD project, the micro-credentials curricula focus on integrating **sustainability, craftsmanship, innovation, and collaboration.** Emphasising design thinking and co-creation throughout the process will ensure that the curricula impart knowledge and enable its application in real-world contexts. It is important to incorporate flexibility in the design so that the curricula can evolve and improve based on feedback from pilot iterations. This approach will create a learning experience that is dynamic and responsive to the changing needs of the industry.

Based on the preparatory activities, the CRAFT-IT4SD consortium has started developing curricula for the following micro-credentials. As the project progresses, and the piloting and training workshops bring inputs, the curricula will be further enriched in the following areas:

- The red thread of sustainability – crafts, culture, and creativity driving regenerative actions for fashion and textile - international summer course
- Guiding the adaptation of micro companies and SMEs to the new legal, sustainable and digital framework in the textile and fashion sector
- Combining craft with digital technologies for sustainability in garment design and consumer approaches – part 1: the thing from the future
- Additive manufacturing and 3d printing for sustainably crafted capsule collections
- Sustainable Smart Textiles- Printed electronics for fashion and craft innovation

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The Red Thread of Sustainability – Crafts, Culture, and Creativity Driving Regenerative Actions for Fashion and Textile	
Developer partner	**AU; Aarhus University**
State of the Art	**The Red Thread Summer School is** offered in partnership with Herning Municipality, Sustainable Herning (Bæredygtig Herning), incubating business development for sustainability, and as part of the Horizon Europe-project, CRAFT-IT4SD (2024-26). The old Danish textile hub, Herning Ikast Brande, is the canvas for The Red Thread Summer School which will cover aspects of how connections between industry, art, crafts and culture formed the modern identity of the textile hub in the second half of the 20th century, creating lighthouse industrial and artistic environments, spilling over into regional and local placemaking, as can still be found in Herning with Birk Center Park's campus and innovation environment, the close-by HEART Art Museum and sculpture parks, the newly sustainably re-designed Højhuset (a cultural hospitality hub with communal dining and hospitality facilities), and Herning Textile Museum (with a particular focus on the female workforce in the textile industry). On the brink of a massive change towards a green and sustainable transition of our industries and environments, towards climate mitigation and mitigation of the bio-diversity crisis, the summer school, taking place in this old textile hub, will cover aspects of design for the planet and for nature, of the rights to reuse, repair and recycle on a local and an international scale, of how the digital and the green transition interconnect in creative ways, of how sustainable placemaking and urban studies may leverage these connections between art, craft, culture, creativity and industry to also engage citizens in the transformative DNA of their city and region. The focus of the summer school will be on how crafts, culture, and creativity may leverage industry and citizens for a green, sustainable and cultural transition, and how the summer school participants may bring the understanding of such challenges, put forward through Bæredygtig Herning, into the conceptualizing, development and production of creative recommendations for local partners – be it art and culture institutions, industry and companies, campus collaborations or public spaces and festivals. The Red Thread Summer School is offered in partnership with Bæredygtig Herning (Sustainable Herning), where the summer school will be taught on-site during July, and we will engage with Herning municipality, partners in CRAFT-IT4SD and local organisations and stakeholders to understand, collaborate and co-create red threads for sustainability.
Objective/Aim of the course	Students will be introduced to theories of sustainable design, fashion and textile, to theories of how old craft techniques interconnect with new technology, to urban placemaking and the integration of industrial heritage in urban regeneration and local identity.

<table>
<tr>
<td></td>
<td>Students will be introduced to field work, gain skills in design thinking, critical making, and critical design fabulation as well as competences in analysing and conceptualizing cross-sector sustainable innovation.

The summer school will additionally introduce participatory user and audience engagement, and to European and global textile and fashion strategies and actions. thinking, critical making, and critical design fabulation as well as competences in analysing and conceptualizing cross-sector sustainable innovation.</td>
</tr>
<tr>
<td>**Prerequisites for users to start the course**</td>
<td>The summer school is offered with an interdisciplinary approach.
Experience in design thinking, co-creation and team work is required,

We invite design and digital design students, students from environmental humanities, cultural and crafts studies, and anthropology.</td>
</tr>
</table>

Workload	Lectures	Seminars	Project Works	Laboratory Practice	Course assessments	Total
Teaching hours						
Individual study hours						
					Total hours	
					Total ECTS	**10**

<table>
<tr>
<td>**Learning Outcomes- Knowledge and Skills**</td>
<td>In the evaluation of the student's performance, emphasis is placed on the extent to which the student is able to:

Knowledge:
- Relate theoretical and analytical approaches to sustainable and regenerative design, sustainability in fashion and textile to local challenges, participatory design, and user/citizen interaction.
- Apply the key theoretical and methodological approaches of the course
- Critically reflect on their own oral and/or written products (and those produced by others) in relation to the academic and theoretical discussions of the course

Skills:
- co-create, conceptualise, test, prototype and present a solution, an intervention, or a recommendation to a challenge through a design thinking process
- Discuss the theme of the course in the foreign language in an academic context

Competences:</td>
</tr>
</table>

	• Reflect on one's own role as a researcher and innovator in the field and in experimental environments • Participate constructively in learning collaboration in a foreign language across educational and/or cultural backgrounds • Gain perspective on and compare the academic profile of the degree programme in relation to the subject areas of the humanities
Syllabus	The Red Thread Summer School consists of two parts: 1) a series of online sessions for introduction to and discussion of recommended readings (to be found on AU Brightspace) and scope, as well as for introduction to design thinking and making in workshop settings. During these sessions, the summer school challenges will be presented, stakeholders introduced, and participants will get to know one another (July 1-3) 2) a two-weeks onsite co-creation environment, in Herning, during which participants will work in facilitated and supervised project groups towards challenges put forward through Bæredygtig Herning, performing field work and documentation, and going through a design thinking process to produce a solution, an intervention or a recommendation. The onsite learning environment will be integrated with talks by researchers, artists, crafts masters, and with visits with local authorities, with industrial stakeholders, and other actors in the old textile area.
Learning/teaching delivery formats	☐ Workshops ☐ Seminars ☐ Talks ☐ Case studies ☐ Citizen and Stakeholder Engagement ☐ Project and Problem Based Learning (PBL) ☐ Stakeholder pitches ☐ Public Presentations and Exhibition
Type of assessment	As a part of the course, the student produces a portfolio of solutions for several assignments. The number of assignments, their form (individual and/or group-based, written, oral, product, reflection, peer feedback, set question or student's choice of question, etc.), their length and the deadlines for submission are announced in writing in Brightspace and orally by the teacher at the beginning of the course. The assignments can provide the basis for different forms of feedback and further development related to the teaching, but there is not a continuous evaluation of the individual assignments. All or a selection of these assignments can provide the basis for the student's exam.
Pathway for a Successful Learner	The summer school offers access to a strong, multihelix ecosystem around sustainable fashion and textiles and to the crafts history of an old textile region (since the 17th century). Through a challenge-based, real world approach, the summer school participants will experience working with local stakeholders and industry, while operating in a cross-disciplinary learning environment.

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GUIDING THE ADAPTATION OF MICRO COMPANIES AND SMES TO THE NEW LEGAL, SUSTAINABLE AND DIGITAL FRAMEWORK IN THE TEXTILE AND FASHION SECTOR**. BUSINESS MODELS AND PATHWAYS FOR SUSTAINABLE FASHION.**	
Developer partner	**MODACC - Catalan Association of Textile and Fashion**
State of the Art	The fashion industry is undergoing a significant transformation driven by three major forces: sustainability, digitalisation, and legislative compliance (McKinsey & Company, 2022). The first two pillars have been recently collectively termed Digitainability (Digitalization + Sustainability) by scholars (Brown et al., 2022) and are crossed transversely by legislative constantly changing imperatives. These forces are reshaping business models, supply chain structures, stakeholder roles, and strategic frameworks within the sector.
	Recent research highlights that companies adopting digital tools alongside sustainability practices achieve higher operational efficiency, reduced environmental

impact, and increased market competitiveness (Brown et al., 2022; Zhang & Li, 2021). Digitalisation is crucial in enabling transparency and traceability across the supply chain through technologies such as blockchain, AI-driven predictive analytics, and automated sustainability reporting (González et al., 2023).

Legislative frameworks, particularly in the European Union, also accelerate this transformation. Policies like the Corporate Sustainability Reporting Directive (CSRD) and Ecodesign for Sustainable Products Regulation (ESPR) require businesses to integrate sustainability metrics into their operations (European Commission, 2023). Compliance with these regulations ensures legal adherence and fosters brand credibility, customer trust, and long-term profitability.

The integration of digitalisation and sustainability within business models gives rise to innovative approaches that redefine value creation in the fashion industry. According to Smith (2021), sustainable innovation in supply chains allows businesses to transition from traditional linear models to circular economies, where waste reduction, recycling, and responsible sourcing are prioritised. Additionally, digital twins and smart manufacturing facilitate real-time monitoring and adaptive production processes, minimising environmental impact while maximising efficiency (Wu, 2022). One critical pathway for integrating these elements is adopting blockchain technology, ensuring traceability and transparency across the supply chain (Patel, 2020). This integration supports compliance with regulations like the EU Green Deal while improving operational resilience. Another approach is data-driven decision-making, which empowers businesses to track sustainability metrics, optimize resource allocation, and enhance supply chain responsiveness (Jones, 2022).

Structured roadmaps are essential to navigate this transformation effectively. McKinsey & Company (2022) and Deloitte (2021) outline strategic steps for businesses to integrate sustainability and digitalisation effectively, including assessment and benchmarking through internal audits, regulatory alignment to ensure compliance with existing and upcoming legislation, adoption of AI, blockchain, and digital twins for enhanced transparency and efficiency, stakeholder collaboration engaging suppliers, policymakers, and consumers to ensure a more sustainable value chain, and continuous monitoring and reporting utilising sustainability reporting frameworks to track progress and adapt strategies.

Companies that take a proactive approach to integrating Digitainability and legislative compliance position themselves as pioneers in the industry. As highlighted by Thompson (2021), early adopters of sustainable business models mitigate risks associated with regulatory non-compliance and create new market opportunities. Leading the transformation allows brands to influence industry standards, secure strategic partnerships, and establish themselves as trusted leaders in transitioning to

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	a more sustainable and digital fashion industry. Ultimately, businesses that embrace these forces early and holistically will comply with regulations and gain a long-term strategic advantage, ensuring resilience and innovation in an ever-evolving global market.
Objective/Aim of the course	**Main Objective** To equip fashion industry professionals with the knowledge and tools to navigate the intersection of sustainability, digitalisation, and legislative compliance, enabling them to lead the industry transformation toward innovative and sustainable business models. **Secondary Objectives** • Introduce the concept of digitalisation and its strategic implications. • Analyse the scope and impact of legislative compliance on fashion businesses and how to leverage it. • Develop digital tool identification and implementation competencies that facilitate sustainability (blockchain, AI, digital traceability). • Provide business model innovation development methodologies using these three pillars as a foundation. • Integrate Design Thinking methodologies to foster a holistic and creative approach to sustainability and digital transformation.
Prerequisites for users to start the course	To start this course, learners generally need to have knowledge and skills in the following areas: • Basic understanding of sustainability principles and their relevance in business operations. • Familiarity with digital transformation concepts and emerging technologies. • Ability to analyse business challenges and identify sustainability-driven solutions. • Critical thinking and problem-solving skills. • Assertive communication and collaboration skills to engage with stakeholders in digital and sustainable transitions.

Workload	Lectures	Seminars	Project Works	Laboratory Practice	Course assessments	Total
Teaching hours	8	3	6	8	3	28
Individual study hours	6	1	1	1	3	12
					Total hours	40
					Total ECTS	1.6

Learning Outcomes-**Knowledge and Skills**	**Knowledge:** • Holistic understanding of the impacts of the double transition (green and digital) in the fashion industry. • Mastery of key regulations and relevant stakeholders in the legislative panorama. • Proficiency in digital technologies to enhance sustainability actions. • Understanding compliance and sustainability-driven business models and their strategic advantage in the fashion industry. **Skills:** • Competence in design thinking and innovation methodologies to facilitate collaboration pathways • Ability to develop and implement sustainability strategies aligned with industry regulations, social justice and environmental needs. • Apply data-driven decision-making processes to enhance and scale digital sustainability practices. • Capability to communicate sustainability strategies effectively.

Syllabus	**Conceptualisation**
	
	This micro-credential provides professionals with the **essential knowledge** and tools to navigate the complexities of **sustainability, digital transformation**, and **legislative requirements**. Designed for **entrepreneurs, sustainability officers, and industry professionals**, this course equips learners with practical strategies to integrate sustainability principles, leverage digital technologies, and ensure regulatory integration within business operations and corporate value creation.
	
	Module 1: Introduction
	
	This module is dedicated to reviewing the basic principles of the three main topics of the micro-credential. Professionals will set the ground for a common knowledge and language base used throughout the course. Each overview will explore the relevant historical facts of the topic, current changes, and key trends.
	
	• Overview of the fashion industry
	    o Historical relevance and evolution
	    o Current state and impacts
	    o Key trends shaping the future of fashion
	• Overview of technologies for digitalisation
	    o Role and relevance of digitalisation (How technologies have shaped the fashion industry.)
	    o Current available technologies
	• Overview of legislative efforts in the EU
	    o The European Green Deal and its implications for the industry.

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        o   Key normative to understand

Module 2: Interconnected systems

Module two is dedicated to exploring the connections between the topics (Digitalization and Sustainability = Digitainability, Sustainability and legislation, digitalisation and legislation).

- Digitainability
  - o The scope of the double transition
  - o Digital tools for environmental and social responsibility tracking.
  - o Enhancing sustainability through technology integration.

- Normative for sustainability
  - o From a non-regulated to a regulated sector
  - o The legislative panorama and normative prioritisation in fashion.
  - o Normative integration for competitive advantage creation.
- Digital technologies for normative integration
  - o Digital technology regulations.
  - o Beyond compliance by increasing digitalisation

Module 3: Innovative Business models

The following module explores the most recent and innovative business models and pathways to create new business models that respond to the current industry needs. To do so, case studies are presented and strategic benefits are explored.

- Overview of current innovative business models available and their strategic value
- Case studies of successful business model transformation through technology and legislative integration
- Business model creation workshop
- Strategic benefits of pioneers in the fashion industry

Module 4: Roadmaps for materialisation

This module focuses on providing professionals with clear pathways to effectively integrate the normative and implement digitalisation strategies, focusing on design thinking processes and stakeholder engagement.

- Applying Design Thinking to fashion sustainability challenge-solving processes
- Development of strategic sustainability roadmaps for companies
- Strategies to integrate technologies and normative

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	• Stakeholder engagement and policy alignment ***Module 5: Final Project*** • Create a business strategy integrating sustainability, digitalisation, and compliance for a company solving real challenges. • Final presentation and expert feedback.
Learning/teaching delivery formats **(select what is suitable for your micro-credential)**	Incorporating innovative delivery formats can significantly enhance students' learning experience and engagement in this course. The learning and teaching delivery formats selected for this course are: ✓ **Workshop** ✓ **Seminar** • E-book • Playbook • Videos • Serious Game ✓ **Case studies** • Augmented Reality (AR) applications • Virtual Reality (VR) applications / Metaverse experience • Coaching • Shadowing • Work Based Learning (WBL) ✓ **Project Based Learning (PBL)** • Internship • Others... please detail….
Type of assessment **(select what it is suitable for your micro-credential)**	• **Project-based assessment - Assign students a final project where they apply the knowledge acquired in this course to solve real-world fashion-related problems** • Quizzes • **Presentations and demonstrations: students prepare and deliver presentations showcasing their understanding of the theoretical concepts and the ability to communicate innovative ideas** • Reports on laboratory work/practical exercises • Others... please detail….
Pathway for a Successful Learner	Upon completion of this micro-credential, learners will be able to: • Understand and apply sustainability principles, aligning strategies with global frameworks such as CSRD, ESG, and the Circular Economy. • Utilise digital technologies, including data analytics, AI, and blockchain, to enhance sustainability efforts and compliance. • Navigate and integrate sustainability legislation into business models and decision-making processes. • Develop and implement sustainable business models that drive innovation and long-term impact. • Effectively communicate sustainability initiatives to enhance brand positioning and stakeholder engagement.

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	This micro-credential prepares learners to address industry challenges proactively, positioning them as leaders in sustainability-driven innovation and strategic compliance.
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COMBINING CRAFT WITH DIGITAL TECHNOLOGIES FOR SUSTAINABILITY IN GARMENT DESIGN AND CONSUMER APPROACHES – PART 1: THE THING FROM THE FUTURE

Developer partner	**VIA**
State of the Art	The Ecodesign Directive (Dimopoulou, 2025) mandates that fashion and textile companies implement, among others, a digital product passport to ensure regulatory compliance. Consequently, companies are advised to strengthen their digital infrastructures to align with this evolving regulatory landscape.

More broadly, investment in digital technologies within the Cultural and Creative Industries (CCSI) has increased significantly (Khlystova et al., 2022), with generative artificial intelligence emerging as a transformative force in content creation (Lee, 2022). Similarly, integrated with digital platforms, Near Field Communication (NFC) tags are expected to play a key role in these infrastructures. However, establishing such digital ecosystems to comply with the Ecodesign Directive requires the collaborative engagement of multiple stakeholders, including both companies and users.
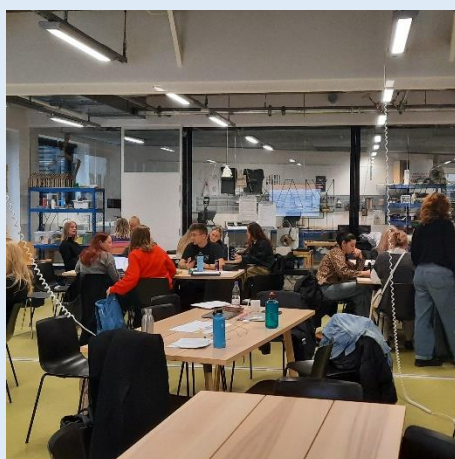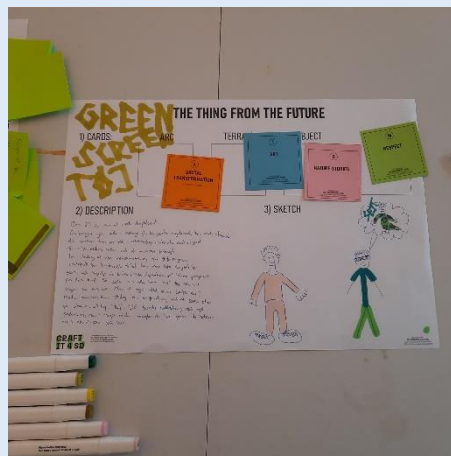
This shift underscores an urgent need for upskilling initiatives focused on developing and implementing digital infrastructures that are both user-centric and beneficial to businesses. Research suggests that scenario-building methodologies can foster speculative and strategic thinking, helping stakeholders navigate sustainability challenges and future consumer practices (Margolin, 2007; Dunne & Raby, 2013; Voros, 2022). One such approach is the imagination game The Thing from the Future (Candy & Watson, 2015), which generates speculative design concepts within structured yet open-ended frameworks. To support this, Design Thinking serves as an effective overarching methodology, capturing the essence of co-creation through its structured interplay of divergent and convergent thinking (Lawson, 2005; Liedtka & Ogilvie, 2011) as well as problem-solving and ideation to incorporate future scenarios (Harsaae & McElheron, 2015; Engholm, 2023). Additionally, design sprints offer a structured approach to guiding and accelerating design processes and |

	co-creation (Knapp, 2016). In sum, co-creation, widely endorsed in European innovation policies, facilitates inclusive and socially robust innovation by fostering collaboration among diverse stakeholders under democratic principles (Ruess et al., 2023; Müller et al., 2021). In this micro-credential, we aim to address these emerging needs by equipping design and business students with the skills and knowledge necessary to navigate potentials and challenges of digital carriers (e.g. NFC technology and AI tools) in future business and design scenarios in the fashion industry. By integrating scenario-based learning, co-creation methodologies, and hands-on application of digital tools, the micro-credential fosters interdisciplinary collaboration and prepares students to contribute meaningfully to sustainable innovation within the industry.
Objective/Aim of the course	This micro-credential equips business and design students with the knowledge and skills to explore the potentials and challenges of digital carriers (such as NFC, AI tools, and biometric methods) in future business and design scenarios. Using a design sprint framework, students will develop innovative solutions that enhance user interaction and engagement with micro-companies, bridging technology and human-centred design.

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Prerequisites for users to start the course	To start this course, learners generally need to have some foundational knowledge and skills in the following areas: • Graphic software, e.g. Adobe package • Basic understanding of user involvement and co-creation • Basic understanding of design processes and design thinking

Workload	Lectures	Seminars	Project	Laboratory Practice	Course assessments	Total
Teaching hours	8		14	4	4	
Individual study hours	4			6		
					Total hours	40
					Total ECTS	1,5

Learning Outcomes- Knowledge and Skills	Knowledge: • Acquire knowledge on the creative use of AI engines • Acquire knowledge on digital carriers based on AIDC technology • Acquire knowledge on biometric research tools • Acquire knowledge on design process tools Skills: • Apply AI engines to develop creative content, e.g. personas, photos, films • Develop content for digital platforms in relation to AIDC technology • Perform and evaluate biometric tests with users in practice
Syllabus	**Conceptualisation** This course focuses on developing concepts for a digital platform and testing concept solutions with users through biometric tools. The framework for the concept development is to combine craft and heritage with digital technologies for sustainable development. The course starts with scenario building using the tool 'The Thing from the Future' to envision potential future uses of digital carriers and platforms. From this, the course is structured into three constitutive elements: **AI: introduction and experimenting** • Introduction to AI engines • Introduction to AI tool, 'Rocket' • Understanding different AI engines and how to select among them • Developing personas, photos, films, and products with AI tools **AIDC technology: introduction and content creation** • Introduction to AIDC technology (e.g. NFC) • Understanding how to use selected technology as a digital carrier • Developing user-relevant content for a digital platform **Biometric research: introduction and testing**

	• Introduction to biometric research tools (e.g. eye tracking, VR simulation, galvanic skin response) • Biometric testing with users • Analysing biometric test data
Learning/teaching delivery formats	Incorporating innovative delivery formats can significantly enhance students' learning experience and engagement in this course. The learning and teaching delivery formats selected for this course are: ☐ Workshops ☐ Lectures ☐ Case studies ☐ Guidance ☐ Project Based Learning ☐ Group work ☐ Lab work
Type of assessment	Group presentations and demonstrations: Students prepare and deliver presentations showcasing their developed concepts, understanding of the practical exercises, and ability to communicate innovative ideas.
Pathway for a Successful Learner	EU legislation will require fashion and textile companies to develop new digital infrastructures, primarily to comply with the Eco-design Directive by establishing a platform for the digital product passport. However, beyond regulatory compliance, creating such digital platforms and infrastructures also facilitates the emergence of new communication communities. This course allows students to explore and develop content for digital platforms that enable companies to foster communities and promote specific crafts and cultural heritage. By doing so, businesses can integrate broader perspectives into their sustainable transition, enhancing both engagement and long-term value creation.
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ADDITIVE MANUFACTURING AND 3D PRINTING FOR SUSTAINABLY CRAFTED CAPSULE COLLECTIONS

Developer partner	**TUIASI- Gheorghe Asachi Technical University of IASI**
Contributor Partner	**REGINNOVA**
State of the Art	Additive manufacturing, commonly known as 3D printing, has become an essential technology in many industries, including textiles. The leading 3D printing methods include Fused Deposition Modelling (FDM), Stereolithography (SLA), and Selective Laser Sintering (SLS), each with different benefits in material variety, accuracy, and application. These techniques are used in healthcare, aerospace, and consumer products, showing their ability to create detailed designs while reducing material waste (Melnikova et al. 1, 2015). Unlike traditional manufacturing, which often involves cutting or moulding materials, additive manufacturing builds objects layer by layer, allowing for complex shapes and

efficient material use. The textile industry has used these improvements for various purposes, from creative designs to functional applications.

In the textile industry, additive manufacturing is changing fashion, technical textiles, and wearable technology. A significant application of 3D printing in textiles is in fashion design, where designers use it to create complex patterns and shapes that are difficult to achieve with traditional techniques (Vaezi et.al, 2013). Designers like Julia Koerner and Iris van Herpen have presented 3D-printed garments, demonstrating that these technologies can be included in high fashion (Pei et.al, 2015). Researchers have also studied the potential of 3D printing to make smart textiles with built-in sensors and conductive materials for wearable electronics [Chen et.al, 2021; Stoppa & Chieoleroir, 2014)].

Beyond fashion, 3D printing has important uses in different textile domains, such as textiles for automotives, medical uses, and protective clothing. Additive manufacturing helps create high-performance textiles with better features such as heat resistance, durability, and antibacterial properties. For example, 3D-printed textiles are being developed for medical use, such as compression garments, prosthetic covers, and tissues (Xiao & Kan, 2022). Similarly, protective equipment, like fire-resistant fabrics and shock-absorbing materials, benefits from the precision and custom designs made possible by 3D printing. 3D printing in industrial textiles also improves production efficiency, allowing for fast prototyping and on-demand manufacturing, reducing waste and storage needs.

Another key advantage of 3D printing in textiles is its sustainability aspect. Unlike traditional textile production, which generates large amounts of waste, additive manufacturing uses only the required materials, reducing environmental impact. Additionally, biodegradable and recycled materials are being developed for textile printing, promoting eco-friendly practices (Garg et al., 2023).

Material development is an important area in 3D-printed textiles. The current researchers who approach the testing of flexible materials like TPU (thermoplastic polyurethane) (Fenollosa-Artes et al, 2023) will give printed textiles the stretchability and softness needed for additional comfort. Some techniques also combine traditional textile fabrics with printed components to improve durability and flexibility (Hossain et al, 2024).

Another new use of 3D printing in textiles is the preservation of cultural heritage [10]. Artists and researchers can recreate detailed cultural patterns using digital models and 3D printing, ensuring traditional designs are kept alive while adapting to modern textile needs. This method preserves cultural heritage and creates new opportunities to merge traditional craftsmanship with modern manufacturing techniques (MIT, 2025; Brination, 2025).

Despite the benefits, challenges remain in using 3D printing in textiles, particularly in large-scale production, cost efficiency, and material performance (Khajavi, 2021) While improvements in multi-material printing and adhesion techniques have made 3D-printed textiles more viable, further studies are needed to make these technologies more suitable for mass production (Grimmelsmann et al, 2018)

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Objective/Aim of the course	• To introduce additive manufacturing and 3D Printing and to highlight its role in creating sustainable fashion collections • To identify and experiment with sustainable materials used in 3D printing and their impact on fashion capsule collections. • To transfer and to provide hands-on experience in designing, prototyping, and producing sustainable capsule collections with 3D printing Source: Preparation of CRAFTIT 4SD capsule collection at TUIASI
Prerequisites for users to start the course	To start this course, learners generally need to have some foundational knowledge and skills in the following areas: • Experience with CAD and modelling software • Understanding basic fashion design concepts • Knowledge of how fashion pieces are typically designed and produced.

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Workload	Lectures/ Webinars	Seminars	Project	Laboratory Practice	Course assessments	Total
Teaching hours	14		28	10	4	56
Individual study hours	14		28	10		52
					Total hours	**108**
					Total ECTS	**4**

Learning outcomes- Knowledge and Skills	**Knowledge:** • additive manufacturing and 3D printing technology • materials for 3D printing and their environmental impact • sustainable capsule collections based on traditional crafts and emerging technologies **Skills:** • to conceptualise, design and develop capsule collections with 3D printing technologies • to use digital tools for integrating crafts into a capsule collection • to select 3D printing materials for producing elements to be integrated into a fashion capsule collection • to evaluate sustainability in 3D Printed components for fashion capsule collections
Syllabus	**ADDITIVE MANUFACTURING AND 3D PRINTING IN SUSTAINABLE FASHION** • Overview of sustainable challenges in the fashion industry/ Why are sustainability and innovation in fashion the key to the future? • Understanding 3D Printing in Fashion – types and materials used • How could 3D printing be integrated into the design process? • Integrating traditional craft with 3D Printing • Case studies of sustainable capsule collections developed by TUIASI students • 3D printing of fashion accessories: handbags and shoes **MATERIALS AND TECHNIQUES IN 3D PRINTING** • Sustainable materials in 3D printing on textile fabrics- biodegradable filaments, recycled plastics, plant-based materials, etc. • How to select 3D printing materials for a capsule collection? • Environmental Impact of traditional materials versus 3D printed materials • How can sustainability in 3D printed components for fashion capsule collections be evaluated? • 3D printing techniques for fashion- multi-material, multi-layered, sustainable finishing • 3D printing improve functionality and reduce waste • Case studies on material innovations for 3D printing

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	DESIGNING AND PRODUCING SUSTAINABLY CRAFTED CAPSULE COLLECTIONS USING 3D PRINTING • Conceptualise capsule collections with 3D printing – design concept, sustainable principles in design • Inspirations from crafts and traditional techniques • Prototyping the capsule collections: sketches, pattern making, 3D printing, cutting, sewing and finishing processes • Challenges and technical solutions on working with 3D printed components • Communicating the capsule collection • Practical session: Hands-on digital tools for integrating crafts into a capsule collection
Learning/teaching delivery formats	Incorporating innovative delivery formats can significantly enhance students' learning experience and engagement in this course. The learning and teaching delivery formats selected for this course are: ✓ **Workshop** ☐ In class teaching ☐ Seminar ✓ **E-book** ✓ **Playbook** ✓ **Videos** ☐ Serious Game ✓ **Case studies** ☐ Augmented Reality (AR) applications ✓ **Virtual Reality (VR) applications / Metaverse experience** ☐ Coaching ☐ Shadowing ☐ Work Based Learning (WBL) ✓ **Project Based Learning (PBL)** ☐ Internship
Type of assessment	✓ Project-based assessment - Assign students a final project where they apply the knowledge acquired in this course to solve real-world fashion-related problems ☐ Quizzes ✓ Presentations and demonstrations: students prepare and deliver presentations showcasing their understanding of the theoretical concepts and the ability to communicate innovative ideas ☐ Reports on laboratory work/practical exercises
Pathway for a Successful Learner	Additive technologies are rapidly growing in the textile industry, influencing fashion, sustainability, and functional textiles. With the development of new materials and printing techniques, 3D-printed textiles have the potential to transform the industry by offering customisation, efficiency, and environmental benefits.
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SUSTAINABLE SMART TEXTILES: PRINTED ELECTRONICS FOR FASHION AND CRAFT INNOVATION	
Developer partner	**Oamk – Oulu Univeristy of Applied Sciences**
State of the Art	The integration of printed electronics into textiles is revolutionising the fashion and textile industries by enabling the creation of lightweight, flexible, and functional garments. Unlike traditional electronic components, which rely on rigid circuit boards, printed circuitry involves the deposition of conductive inks and materials onto fabric substrates, allowing for seamless integration into wearable technology. Research by Stoppa & Chiolerio (2014) highlights the rapid advancements in printed electronics, emphasising their potential in smart textiles, healthcare applications, and interactive fashion. One of the most significant advantages of printed electronics in textiles is their contribution to sustainability. The textile and fashion industries are notorious for their high levels of waste and resource consumption. Printed electronics present an opportunity to reduce waste by incorporating sensors and circuits directly into garments, minimising the need for additional hardware and extending product lifecycles. According to a report by the Ellen MacArthur Foundation (2017), integrating smart functionalities into textiles can promote a more circular fashion economy by enabling recycling, reuse, and efficient energy management in wearables. Moreover, printed electronics support sustainable fashion by reducing reliance on traditional, resource-intensive manufacturing processes. Conventional electronic components require significant amounts of raw materials, including metals and plastics, which contribute to environmental degradation. Printed electronics, on the other hand, utilise conductive inks made from biodegradable or recyclable materials, lowering their environmental footprint. Studies such as those by Shanmugam et al. (2020) emphasise the potential of printed circuitry in promoting eco-friendly textile production and enabling innovative, sustainable business models within the fashion industry.
Objective/Aim of the course	By completing this micro-credential, participants will: • Understand the principles of printed electronics and their applications in textiles. • Explore the role of sustainable materials and processes in electronic textiles. • Develop skills in designing and printing functional circuits onto fabric substrates.

	• Learn how smart textiles can contribute to circular economy models in fashion and crafts. • Gain practical experience in testing and evaluating printed electronic garments for durability and functionality.
Prerequisites for users to start the course	To start in this course, participants should have: • A basic understanding of textile materials and production processes. • Familiarity with fashion, craft, or engineering principles. • An interest in sustainability and technological innovation in the textile and fashion industries. • No prior experience in printed electronics is required, but a background in design, engineering, or materials science is beneficial.

Workload	Lectures	Seminars	Project Works	Laboratory Practice	Course assessments	Total
Teaching hours	8	2	5	5	3	23
Individual study hours	5	1	1	7	3	17
					Total hours	**40**
					Total ECTS	**1,6**

Learning Outcomes- Knowledge and Skills	Knowledge: • Holistic understanding of the impacts of the double transition (green and digital) in the fashion industry. • Mastery of key regulations and relevant stakeholders in the legislative panorama. • Proficiency in digital technologies to enhance sustainability actions. • Understanding legislative integration, sustainability-driven business models, and the strategic advantage in the fashion industry. Skills: • The fundamentals of printed electronics and their potential in textiles and crafts. • Sustainable materials and eco-friendly manufacturing techniques for electronic textiles. • Methods for enhancing garment durability and reducing electronic waste. • The role of smart textiles in circular economy models. • Testing procedures for evaluating functionality and environmental impact.

Syllabus	1. Introduction to Printed Electronics in Textiles Overview of printed circuitry and functional materials. Applications in fashion, crafts, and wearable technology. 2. Sustainability in Smart Textiles Biodegradable and recyclable conductive inks. Energy-efficient and low-waste manufacturing processes. Role of printed electronics in reducing textile waste. 3. Designing and Manufacturing Printed Circuits on Textiles Selection of sustainable textile substrates. Printing techniques for flexible electronics. Integration of sensors for smart garments (e.g., temperature or motion tracking). 4. Testing and Practical Implementation Durability and washability of printed circuits. Functionality testing in real-life applications. Ethical considerations and lifecycle assessment.
Learning/teaching delivery formats **(select what is suitable for your micro-credential)**	Incorporating innovative delivery formats can significantly enhance students' learning experience and engagement in this course. The learning and teaching delivery formats selected for this course are: ✓ **Workshop** ✓ **Seminar** ☐ E-book ☐ Playbook ☐ Videos ☐ Serious Game ✓ **Case studies** ✓ **Augmented Reality (AR) applications** ☐ Virtual Reality (VR) applications / Metaverse experience ☐ Coaching ☐ Shadowing ☐ Work Based Learning (WBL) ✓ **Project Based Learning (PBL)** ☐ Internship ☐ Others... please detail….
Type of assessment	☐ Project-based assessment - Assign students a final project where they apply the knowledge acquired in this course to solve real-world fashion-related problems ☐ Quizzes

	☐ Presentations and demonstrations: students prepare and deliver presentations showcasing their understanding of the theoretical concepts and the ability to communicate innovative ideas ☐ Reports on laboratory work/practical exercises ☐ Others... please detail….
Pathway for a Successful Learner	Upon completion of this microcredential, learners will be able to: • Design and develop printed electronic circuits on textile substrates. • Utilize sustainable materials and processes in smart textile production. • Evaluate and optimise the durability and functionality of electronic textiles. • Implement innovative electronic textiles in fashion and craft applications. • Apply sustainability principles to electronic textile design and lifecycle management.
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5. Develop a Playbook of Good Practices for Emerging Skills in Fashion and Related CCSI (Task 6.4)

5.1. Introduction to the Work

Based on WP4 and W6 (T6.2. and T.6.3), the project partners will co-create an interactive, game-based playbook with the project's core processes, good practices and recommended design journeys. In addition, the Playbook will collect the skills-related results, experiences and lessons learnt from the piloting and the traversal project activities (WP4, WP5, WP7), the developed Action Plans and Learning Ecosystems (T6.3), and will provide recommendations on training, up-and re-skilling, integration with study programmes and knowledge transfer in traditional fashion careers and emerging cultural and creative professions to secure their future sustainability.

The playbook is developed in three stages:

- Collect and elaborate the chapters on the skills-related results, experiences and lessons learnt from the piloting and follow-up activities (WP4 and WP5) - Oct24-Jan26
- Elaborate the chapters on Action Plans and Learning Ecosystems - Mar25-Aug25
- Prepare the chapters on recommendations on training, study programs and knowledge transfer in traditional fashion careers and emerging cultural and creative professions - Sept25-Feb26

The CRAFT-IT4SD playbook (D6.3.; M29) will have a transferable potential (and be applied during replication phase) and will help present creative and cultural industrial sectors comprehensively, contributing to intercultural and intergenerational transfer, raising awareness and attracting the young generations.

6. Conclusions

The CRAFT-IT4SD project aims to bridge the skills gap in the creative, crafts, and related industries by creating a **sustainable Learning Community.** This community focuses on four core areas: **innovative business models, sustainability in wardrobes, empowering consumers, and the intersection of crafts with emerging technologies**. By fostering innovative learning through peer exchanges, knowledge transfer, and collaboration, the project seeks to create a dynamic and inclusive environment. This community will provide opportunities for professionals and students and continue to operate beyond the project's duration, ensuring long-term sustainability.

The project's approach includes training workshops to develop **Learning Ecosystems/Hubs** for the fashion and creative sectors, focusing on local and regional excellence in education. Through cross-sectoral collaborations and the integration of emerging technologies, the project encourages the adaptation of the creative industries to climate transitions, supporting a sustainable, knowledge-based economy.

The project's **Learning Ecosystem Teams (LET)** have started to build capacity, develop action plans for business models and emerging technologies, and foster innovation. A key feature of CRAFT-IT4SD is its focus on **micro-credentials,** which provide learners with competency-based recognition in areas like sustainable business models, craft techniques, and digital innovation. These micro-credentials allow learners to showcase specific skills that align with industry needs, offering flexibility and value in lifelong learning and employability. Additionally, the curricula for these micro-credentials integrate design thinking, problem-solving, and collaborative work, emphasising the importance of real-world applications and co-creation.

The curricula will cover various topics throughout the project, including sustainable fashion, traditional craft techniques, and digital technologies such as 3D printing. The project ensures that learning activities are interactive, iterative, and collaborative, helping students and professionals to develop skills that meet the challenges of the evolving creative industries. Furthermore, the curricula will address environmental sustainability and cultural and social impact, incorporating the preservation of traditional crafts and the social responsibility of sustainable production.

The project's emphasis on **design thinking and co-creation** ensures that the learning process is dynamic and adaptable to the changing needs of the industry. As the project progresses, feedback from pilot workshops will continuously enhance the curricula, ensuring that they remain relevant and effective in meeting the demands of the creative sectors.

In conclusion, the CRAFT-IT4SD project is an innovative and forward-thinking initiative that **integrates sustainability, craftsmanship, and technology into the education of future professionals in the creative and fashion industries**. By developing Learning Ecosystems, fostering collaboration, and providing flexible learning pathways, the project is poised to create lasting impact and support the growth and competitiveness of the creative sector. Through its comprehensive approach, CRAFT-IT4SD contributes to **developing a knowledge-based, sustainable economy while preserving cultural heritage and empowering individuals and communities**.

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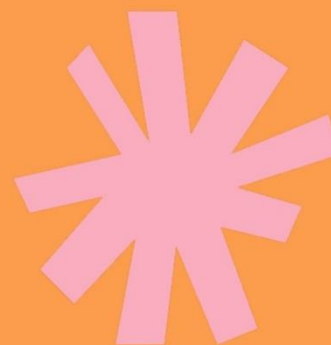
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