D4.3. Final Curriculum Program



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Transitions Project

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Introduction

1. Executive summary

This document defines the Transitions modular curriculum, its respective learning pathways (VET, HEI and Professionals) and how it can be used by educators. The document details the knowledge areas, modules and learning units of the curriculum. It provides accompanying material for training providers: a glossary of teaching methodologies, teaching material (PPT). The document aims to support teachers and educators of the textile and fashion sector to implement new training programs in their specific contexts. Suplementary to this document is the deliverable D4.5 regarding the quality training guidelines.

2. About Transitions

TRANSITIONS (Erasmus + Project) is a strategic alliance for innovation formed by research and technological centres, Vocational Education and Training (VET), Higher Education Institutions (HEI), public policy actors, SMEs, and other sectoral organizations from Spain, Italy, The Netherlands, and Sweden. The aim is to nurture the textile and fashion transition to a 4.0 system and a circular economy by developing new learning methods, tools, and practices to help students, young designers, and professionals to face real challenges.

The objective is to create collaborative and real work-based training where the different actors in the value chain work on how to take advantage of technology to generate new value proposals and new business models within a circular economy. Transitions propose a multidisciplinary pedagogical systemic design approach based on emerging disciplines and practices that tackle the topics of sustainability, digitalization, stakeholder engagement and business and finance in the textile and fashion industry. The modular design allows for the curriculum to be expanded or updated as new industry trends and technologies emerge, ensuring that the learning content remains relevant and up to date.

3. Deliverable Objective

The objective of D4.3 is to define the Final Curriculum Program: the updated modular curriculum and its Transition Lab design. The Final Curriculum has its origin in the Prototype one, as defined in D4.2. The final Curriculum can be used for HEI, VET and Professional education and training.



4. Methodology

The Transitions modular curriculum is the result of a co-design process that involved all partners through several collaborative sessions, both online and on-site. As in previous collaborative work within the Transitions project, we used MIRO to prototype the Transitions modular curriculum and its respective learning pathways through physical and online meetings. Following the collaborative approach for the work developed within Transitions, the process of co-designing the modular curriculum took the following steps:

- 1. To update the prototype curriculum according to the feedback from the pilots (TLabs)
- 2. To update the modules and learning units of the Transitions modular curriculum
- 3. To develop the learning pathways for each of the three educational levels: VET, HEI and Professionals.

In the following section we explain in detail the Transitions modular curriculum and the learning pathways.

5. Transitions Curriculum

In this section we provide an overview that positions the Transitions curriculum within the broader textile and fashion education context. We outline the general objectives, describe how the curriculum is structured around the knowledge areas. We define the competences that learners should develop, describe the modules and learning units, and finally we define the learning outcomes that learners will achieve.

Overview

The state of the art in textile and fashion design education emphasizes the critical role of fashion designers in making fashion more sustainable. This approach is rooted in the belief that designers can significantly influence fashion's environmental, social, and cultural impacts. Education in this field is moving towards creating an equilibrium between craftsmanship, artistic, and business skills, focusing on sustainability. Such equilibrium includes addressing design, production, and consumption challenges to align with sustainable development goals. Textile and fashion education is evolving to reflect the complex nature of sustainability problems, requiring adjustments that span the ecological to the socio-economic and cultural dimensions of textile and fashion (Murzyn-Kupisz M., Hołuj D., (2021), D'Itria, E., Vacca, F. (2021).

Based on the findings described in D3.1 Technology, Sustainability & Industry Toolkit Map and Content Definition of the Transitions project, there is there is an absence of specific methodologies used in the teaching practice within textile and fashion education. As previous research conducted



by the Transitions project on teaching methodologies and educational models, there is a lack of theoretical and methodological foundations in textile and fashion education.

Existing references in this field mainly draw from the field of Human-Computer Interaction (HCI), indicating a need for the development of methods and frameworks tailored to the Textile and Fashion Design perspective. In a similar line of thinking fashion designer and researcher Kate Sala states that: "there is a lack of substantial information to be found on transformative learning techniques or teaching practices geared toward creating an environment that enables student designers to reflect critically on the current fashion system, in order to identify and create a position for themselves in the future" (Sala, K. 2019, p. 48).

There is also a need for published documentation on design processes, tools and methods used explicitly in European Textile and Fashion Design educational programs. More specifically the need of nurturing critical, systemic and reflective thinking. These skills are crucial for students to address societal challenges such as climate change, biodiversity loss, and poverty.

According to the OECD Learning Framework 2030, students of the future need to develop their sense of agency to actively participate and positively impact the world. Educators play a role in creating a personalized learning environment that supports students in designing their own learning experiences in collaboration with others. Digital literacy and data literacy, including the ability to navigate, analyze, and manage data using digital technologies, are also essential.

Traditional design approaches often overlook the challenges faced by society, as they tend to focus on linear processes and profitability. However, the complexity of societal problems requires a systemic thinking approach.

The Transitions curriculum addresses the gaps and needs outlined above and proposes a systemic approach (Forlizzi, J., 2013) to textile and fashion education by incorporating sustainability, digitalization, business & finance, and stakeholder engagement as cross-cutting competencies into the curriculum, addressing the industry's complex needs to drive sustainability.

The curriculum was tested through two Transitions Labs (TLabs) for each country: Netherlands, Spain, Italy and Sweden. The Transition Lab is an experimental playground designed to test and refine the Transitions modular curriculum by engaging participants through innovative teaching methodologies and activities.

Workpackage 5 (IAAC) analysed the results from each pilot, which allowed us to draw targeted conclusions on how the curriculum performed across various learning environments and student groups. These insights inform specific adjustments to refine and iterate the curriculum, guiding us toward a final version that optimally addresses the identified needs and objectives. The Final Transnational Transitions Lab will be held in Italy in February 2025 to test the



curriculum.



General Objectives

The Transitions curriculum aims to be versatile, modular, and adaptable to learners' diverse needs across higher education (HE), vocational education training (VET), and professional training environments. The general objectives of the Transitions Curriculum are:

- Integrate sustainable principles and digital skills across all modules
- Promote business and financial knowledge for sustainable models
- Encourage stakeholder engagement for collaborative approaches
- Support systemic thinking for addressing complex interconnections in textile and fashion value chains.

Structure of the Curriculum

The curriculum is divided into 5 knowledge areas that include a set of interconnected modules, each covering a broad subject area. These modules consist of multiple learning units that address specific topics within the broader subject. The modular structure facilitates a step-by-step learning process, ensuring that learners can build on their knowledge and skills progressively.

Transitions Curriculum KNOWLEDGE AREAS MODULE 1 MODULE 2 MODULE 3 Introduction Systemic Thinki DESIGN RESEARCH and Design MODULE 4 MODULE 5 Data Literacy Digital Design and Production Tools kchain & Unique Technologies DIGITALISATION Advanced Sorting Technologies Technographic Web Tracking MODULE 9 Beyond ustainability MODULE 8 Closing the Loop SUSTAINABILITY Closed Loop Water & Renewable Energy MODULE 10 MODULE 11 MODULE 12 Ethical Ecosystem & Social Prosperity STAKEHOLDER Fluid Fashion Consumption

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Figure 1: The Transitions modular curriculum

The main features of the modular structure are:

- Versatility: Modules can be adapted to different educational contexts, including higher education institutions, vocational training centres, and professional development programs.
- Interdisciplinary Approach: Modules integrate various disciplines, such as sustainability, digitalization, business, and stakeholder engagement, to provide a holistic learning experience.
- Customization: Learners/Teachers can choose modules that align with their personal and professional interests, creating a tailored learning pathway that meets their individual needs.
- Scalability: The modular design allows for the curriculum to be expanded or updated as new industry trends and technologies emerge, ensuring that the learning content remains relevant and up to date.

Knowledge Areas

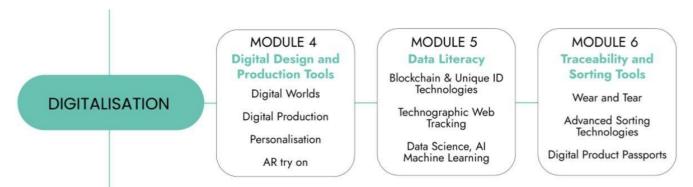
The fashion and textile industry are currently undergoing significant transformation, needed by technological advancements, environmental sustainability demands, and changes in societal expectations. To effectively address these challenges, the Transitions partners: (WP2 and WP3 mappings and surveys) have identified five essential Knowledge Areas: 1) Design Research, 2) Digitalisation, 3) Sustainability, 4) Stakeholder Engagement and 5) Business & Finance. These areas focus on integrating new technologies, implementing sustainable practices, fostering inclusive collaborations, and enhancing strategic business management. Collectively, they provide a strategic framework that promotes operational efficiency, environmental responsibility, and social responsiveness, positioning the fashion industry for future resilience and success.

DESIGN RESEARCH knowledge area emphasizes holistic approaches to sustainable transitions, integrating stakeholders across the textile value chain with tools and frameworks that promote systemic thinking. It develops skills for conducting rigorous, ethical research, enabling learners to analyze challenges and inform sustainable practices. Additionally, it explores key design frameworks, encouraging critical reflection on the role of design in fostering innovation and sustainability. This area forms a cohesive, transversally applicable knowledge base for addressing the sector's sustainability challenges.

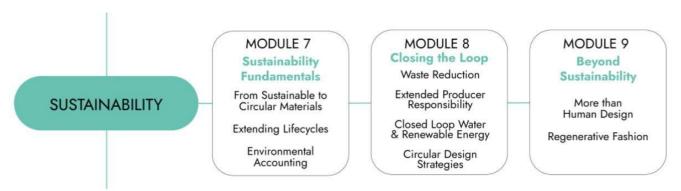




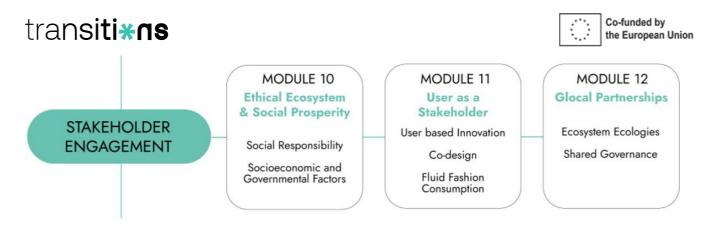
2. DIGITALISATION knowledge area focuses on the integration of digital literacy across various domains, such as design, manufacturing, retail, and marketing. Modules in this knowledge area address e-commerce, virtual reality, and data analytics to enhance operational efficiency, improve customer engagement, and drive creative innovation throughout the textile and fashion value chain.



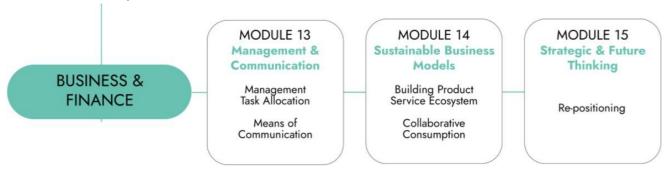
3. SUSTAINABILITY knowledge area aims to implement practices that reduce environmental and social impacts. Modules in this knowledge area focus on sustainable materials, cutting waste and emissions, ensuring ethical labor practices, adopting circular economy concepts and complying with current policies and European directives. The overarching aim is to provide learners with knowledge that fosters a textile and fashion industry that is ecologically responsible and socially beneficial.



4. STAKEHOLDER ENGAGEMENT knowledge area refers to the systematic inclusion and collaboration with diverse groups, including consumers, employees, suppliers, local communities, and non-governmental organizations (NGOs). This process involves establishing transparent and constructive dialogues, accommodating various perspectives, and addressing social and environmental challenges. Through methods for effective stakeholder engagement, learners will be able to build trust, foster societal progress, and align their strategies with the expectations of the broader community.



5. BUSINESS & FINANCE knowledge area represents the strategic and financial facets of the industry, pivotal for comprehending market dynamics, consumer behavior, supply chain logistics, branding, and profitability. For learners, gaining proficiency in these areas is imperative to successfully navigate the competitive landscape, innovatively respond to shifting consumer demands, and optimize operations for sustainable growth and success in the marketplace.



Competences in Knowledge Areas

The Transitions' modular curriculum equips learners with competences to make complex judgments about their work and others and train them to face the challenges of the textile and fashion industry. The program's educational units have been designed to help learners achieve these competencies in terms of sustainability tools, strategies, and digital skills to respond to the needs of the textile and fashion industry. Below, we define competences of the Transitions Training Program:

Design Research

- 1. Introduction Systemic Thinking and Design
 - Capability in applying the Systemic Design Framework for sustainability transitions.
 - Skill in using the Loophole Toolkit to explore systemic design opportunities in textiles.
 - Understanding interdependencies across value chains and cultural factors.
 - Collaboration with diverse stakeholders in systemic design initiatives.
 - Ability to identify and analyze boundaries and relationships in complex systems.
 - Knowledge of real-world systemic interventions through global and local case studies.
 - Engagement with the systemic design community and networks (e.g., TCBL, Fabricademy).
 - Strategic problem-solving for sustainability challenges in the textile ecosystem.



2. Research Methods

- Proficiency in qualitative, quantitative, and mixed research methodologies.
- Skill in formulating research questions and designing comprehensive research proposals.
- Ability to collect and analyze data effectively using appropriate methods.
- Critical evaluation of research literature and methodologies in the textile and fashion context.
- Understanding the theoretical foundations of research methodologies.
- Application of ethical principles in conducting responsible research.
- Integration of research findings to improve design practices and policies in textiles and fashion.

3. Design Theories

- Understanding key theoretical perspectives in design, including Design Thinking and Material Driven Design.
- Ability to critically analyze social, ethical, and environmental challenges using design theories.
- Insight into the philosophical, cultural, and ethical foundations of design as a discipline.
- Evaluation of current practices in the textile and fashion ecosystem through theoretical frameworks.
- Application of design theory to develop sustainable solutions integrating technology and innovation.
- Exploration of historical and contemporary design perspectives to address complex industry problems.
- Capability in leveraging interdisciplinary collaboration for innovative design practices.

Digitalisation

4. Digital Design and Production Tools

- Proficiency in digital design software (e.g., CAD, 3D modelling).
- Virtual sampling and augmented reality application for fashion.
- Personalization techniques in digital product design.
- Understanding and implementing digital production technologies.

5. Data Literacy

- Data analysis and interpretation in fashion contexts.
- Familiarity with blockchain and unique ID technologies for transparency.
- Ethical data management and digital waste reduction practices.
- Application of AI, machine learning, and technographic web tracking.

6. Traceability and Sorting Tools

- Implementing digital product passports for transparency.
- Use of advanced sorting technologies for recycling.
- Skills in data collection for product wear and tear analysis.
- Developing and managing traceability systems.

Sustainability



7. Sustainability Fundamentals

- Knowledge of sustainable and circular materials.
- Applying lifecycle assessment (LCA) for environmental impact.
- Strategies for extending product lifecycles through design (repairability, modular design).
- Understanding and applying eco-design principles.

8. Closing the Loop

- Circular design strategies focusing on repair, upcycling, and recyclability.
- Knowledge of waste hierarchy and extended producer responsibility (EPR).
- Implementation of closed-loop water and energy systems.
- Reducing environmental impact through resource-efficient design.

9. Beyond Sustainability

- Integrating regenerative practices, such as agroecology.
- Design approaches that consider interspecies relationships and natural ecosystems.
- Exploration of non-conventional fabrics and materials.
- Developing a restorative approach to fashion.

Stakeholder Engagement

10. Ethical Ecosystems & Social Prosperity

- Understanding social responsibility and fair labour practices.
- Skills in assessing socioeconomic and governmental factors affecting industry.
- Promoting ethical production and sustainable equity in business models.
- Analysing and implementing practices that support social prosperity.

11. User as a Stakeholder

- Engaging users in the design and production process (co-design).
- Developing customer-centered innovation strategies.
- Embracing fluid consumption models and open-source collaboration.
- Creating feedback loops for improved transparency and inclusivity.

12. Glocal Partnerships

- Building and sustaining strategic partnerships for global and local impact.
- Engaging with communities in design, production, and recycling processes.
- Developing shared governance models and ecosystem-based strategies.
- Managing networks to support long-term community and business objectives.

Business & Finance

13. Management & Communication

- Task allocation and strategic management for effective workflows.
- Communication skills for diverse stakeholder engagement.
- Establishing cultures of continuous learning and knowledge sharing.
- Developing brand storytelling and messaging strategies.

14. Sustainable Business Models

Creating product-service ecosystems that integrate sustainable practices.



- Implementing collaborative consumption and community engagement models.
- Revenue model innovation and cost-analysis methods (e.g., lifecycle costing).
- Integrating digital platforms and personalized services in business models.

15. Strategic & Future Thinking

- Scenario planning and future-oriented market analysis.
- Skills in strategic repositioning for resilience.
- Knowledge of past, current, and future technological innovations.

Modules

A Module is a collection of interconnected Learning Units that, together, create a comprehensive thematic training course. A module is not a training course but a unit that helps you create a training course. Each of the 15 modules is designed to cover a broad subject area and includes three Learning Units that address specific topics within that area.

Design Research

- 1. Introduction system thinking and design
- 2. Research Methods
- 3. Design Theories

Digitalisation

- 4. Digital Design and Production Tools
- 5. Data Literacy
- 6. Traceability and Sorting Tools

Sustainability

- 7. Sustainability Fundamentals
- 8. Closing the Loop
- 9. Beyond Sustainability

Stakeholder Engagement

- 10. Ethical Ecosystems & Social Prosperity
- 11. User as a Stakeholder
- 12. Glocal Partnerships

Business & Finance

- 13. Management & Communication
- 14. Sustainable Business Models
- 15.Strategic & Future Thinking

Learning Units

The Learning Unit is a component of the curriculum designed to provide a coherent block of content or skills development focused on a specific topic or area of study.

There are 31 LEARNING UNITS.



THE FORMAT OF THE LEARNING UNITS

- Title
- Introduction
- Assessment
- Teaching Methodologies
- Suggested Activities
 - Product
 - Service
 - System
- Resources

MODULE 1 Introduction Systemic Thinking and Design

This module introduces systemic design approaches for sustainable transitions in textiles and fashion, emphasizing holistic thinking, stakeholder collaboration, and value chain interdependencies. Learners gain skills to drive systemic change using tools like the Systemic Design Framework and Loophole Toolkit, with insights from global and regional case studies.

MODULE 2 Research Methods

This module equips learners with skills in qualitative, quantitative, and mixed research methods, emphasizing data collection, analysis, and ethical rigor. It focuses on formulating research questions, creating proposals, and applying findings to improve textile and fashion design practices and policies.

MODULE 3 Design Theories

This module explores key design theories and their application in textiles and fashion, highlighting their cultural, social, and ethical contexts. It emphasizes the role of design in fostering innovation and sustainability, combining practical and conceptual insights through case studies and interdisciplinary collaboration.

DIGITALISATION

Digitalisation in the fashion industry involves the integration of digital technologies across various domains, such as design, manufacturing, retail, and marketing. This transformation leverages e- commerce, virtual reality, and data analytics to enhance operational efficiency, improve customer engagement, and drive creative innovation throughout the fashion value





MODULE 4 Digital Design and Production Tools Digital Design and Production Tools introduces participants to cutting-edge technologies revolutionizing the fashion industry.

Through in-depth exploration of virtual sampling, digital manufacturing, AR Try-On, and digital worlds, learners gain practical skills to innovate in fashion design and production. Additionally, learners examine the role of personalization in creating tailored experiences for consumers, positioning them at the forefront of digital fashion innovation.

LEARNING UNITS:

- DIGITAL WORLDS
- DIGITAL PRODUCTION
- PERSONALISATION
- AR Try on

MODULE 5 Data Literacy

In this module, participants will explore cutting-edge technologies such as data science, artificial intelligence, and blockchain in the fashion industry while considering ethical implications and addressing digital waste concerns. Through hands-on learning, students will gain insights into leveraging these technologies to optimize design, production, and marketing processes while minimizing environmental impact. By integrating ethical principles and sustainability practices, students will develop strategies to create innovative, transparent, and environmentally responsible solutions for the fashion industry.

LEARNING UNITS:

- BLOCKCHAIN & UNIQUE ID TECHNOLOGIES
- DATA SCIENCE
- MACHINE LEARNING
- TECHNOGRAPHIC WEB TRACKING
- DATA SCIENCE, AI, MACHINE LEARNING

MODULE 6 Traceability and Sorting Tools

The Traceability and Sorting Tools Module provides a comprehensive understanding of the necessary tools to improve sustainability in the textile and fashion industry. These tools include advanced sorting technologies, digital product passport systems, and wear and tear data collection. Advanced sorting technologies focus on digital recycling and upcycling and explore cutting-edge techniques such as machine vision, artificial intelligence, and data analytics. The digital product passports enable the recording of vital data from a fashion product's origin to its end-of-life, establishing its digital identity. This contributes to enhancing transparency and



traceability, identifying potential risks and promoting ethical and sustainable practices. It also emphasizes social responsibility, fair labor practices, and worker welfare, promoting ethical production in the fashion industry. Finally, wear and tear refer to the gradual deterioration of products due to regular use, influenced by friction, stress, and environmental conditions. Analyzing wear and tear data is crucial for understanding product durability, user behavior, and sustainability.

LEARNING UNITS:

- WEAR AND TEAR
- ADVANCED SORTING TECHNOLOGIES
- DIGITAL PRODUCT PASSPORTS

SUSTAINABILITY

Sustainability in the fashion industry is about implementing practices that reduce environmental and social impacts. This involves using sustainable materials, cutting waste and emissions, ensuring ethical labor practices, and adopting circular economy concepts. The overarching aim is to forge a fashion industry that is ecologically responsible and socially beneficial.

MODULE 7 Sustainability Fundamentals

Sustainability Fundamentals module focuses on the shift of the textile and fashion industry towards sustainability and circular systems, looking into strategies for extending the lifecycle of products, such as durability, repairability, modular and timeless design. Drawing references from the Ellen MacArthur Foundation's circularity roadmap, UNEP, SDG, among others, the module unfolds eco- design principles and examines social, economic, and environmental issues. The module covers the Life Cycle Assessment (LCA), a tool for analyzing environmental impacts and implementing sustainable practices throughout the whole supply chain and manufacturing processes.

LEARNING UNITS:

- FROM SUSTAINABLE TO CIRCULAR MATERIALS
- EXTENDING LIFECYCLES
- ENVIRONMENTAL ACCOUNTING

MODULE 8 Closing the Loop

Closing the Loop introduces participants to circular design strategies and involve a holistic approach to design, materials, resources, and services that is mindfull of the waste hierarchy as well as EPR. Learners will learn of conscious strategies and practices that reduces waste,



consider the entire lifecycle of textile products and how the overall environmental impact of the garment/product can be minimized, and how products can be made to easier go into material recycling at the end of their lifespan. Part of the module will focus on repair, upcycling and design for disassembly as circular design strategies increasing the longevity of materials, waste reduction and product use.

LEARNING UNITS:

- WASTE REDUCTION
- EXTENDED PRODUCER RESPONSIBILITY
- CLOSED LOOP WATER & RENEWABLE ENERGY
- CIRCULAR DESIGN STRATEGIES

MODULE 9 Beyond Sustainability

Beyond Sustainability, it looks specifically at the interconnectedness of all living beings and nature, through a less human-centered approach. It involves adopting a broader perspective to design, evaluating humanity's impact and integrating holistic practices in harmony with nature. Learners become aware of current problematics such as animal and environmental exploitation, monoculture, while they gain insights through approaches that shift the paradigm, such as agroecology and fibreshed.. This module also explores alternatives to conventional fabrics, and how a shift towards a more restorative approach to the fashion industry can be achieved by embracing regenerative fashion.

LEARNING UNITS:

- MORE THAN HUMAN DESIGN
- REGENERATIVE FASHION

STAKEHOLDER ENGAGEMENT

Stakeholder engagement refers to the systematic inclusion and collaboration with diverse groups, including consumers, employees, suppliers, local communities, and non-governmental organizations (NGOs). This process involves establishing transparent and constructive dialogues, accommodating various perspectives, and addressing social and environmental challenges. Through effective stakeholder engagement, fashion brands are able to build trust, foster societal progress, and align their strategies with the expectations of the broader community.

MODULE 10 Ethical Ecosystems & Social Prosperity

In the "Ethical Ecosystems & Social Prosperity" module, learners will explore the transformative potential of ethical practices in the apparel industry. This module examines the importance of fair labor practices, the importance of social responsibility, and the impact on socioeconomic



sustainability as the apparel industry competes with globalization, environmental sustainability, and social equity challenges. By providing an understanding of this, this module aims to equip learners with the knowledge and skills to support sustainable equity practices in the fashion and textile industries.

LEARNING UNITS:

- SOCIAL RESPONSIBILITY
- SOCIOECONOMIC & GOVERNMENTAL FACTORS

MODULE 11 User as a Stakeholder

The "User as a Stakeholder" module explores the transformative shift in the fashion industry where users are not just consumers but active participants in the design, development, and sustainability processes. This shift recognizes users as central figures who influence trends, demand sustainable practices, and engage in the co-creation of products. Through this module, learners will explore how digital technologies and participatory design models enable a more inclusive, sustainable, and user-centric approach to fashion. By embracing open-source collaboration, fluid consumption models, and feedback mechanisms, fashion brands can foster deeper engagement, transparency, and innovation, leading to products that resonate more closely with user values and expectations.

LEARNING UNITS:

- USER BASED INNOVATION
- CO-DESIGN
- FLUID FASHION CONSUMPTION

MODULE 12 Glocal Partnerships

The Glocal Partnerships module takes a holistic perspective on how wider networks and systems of engagement between stakeholders are built and sustained. By examining different styles of engagement strategies, such as strategic partnerships between brands, shared governance models, or involving local community in the design, use, production or recovery of goods, learners will be able to identify which model of engagement or partnership can be beneficial in various situations, and the long-term impact it will have on a business at a product, service or system level.

LEARNING UNITS:

- ECOSYSTEM ECOLOGIES
- SHARED GOVERNANCE

BUSINESS & FINANCE

Business and finance represent the strategic and financial facets of the industry, pivotal for



comprehending market dynamics, consumer behavior, supply chain logistics, branding, and profitability. For fashion brands, proficiency in these areas is imperative to successfully navigate the competitive landscape, innovatively respond to shifting consumer demands, and optimize operations for sustainable growth and success in the marketplace.

MODULE 13 Management & Communication

The Management and Communication module addresses the contemporary fashion workspace, where the needs and demands of learners and employees are in constant flux. As new services, technologies and methods are adopted with the changing market, re-evaluation of skills, training programmes that address skills gaps, updating job roles, effective communication strategies, and knowledge acquisition and sharing, are key. Learners will understand the need for and how to implement cultures of continuous learning, develop new ways of brand storytelling, and how strategic task management can impact an organization.

LEARNING UNITS:

- MANAGEMENT TASK ALLOCATION
- MEANS OF COMMUNICATION

MODULE 14 Sustainable Business Models

The module explores the concept of Business Models for establishing sustainable value-chains in fashion and textile sectors, from revisiting the value proposition, new forms of collective production, revenue models, introducing new ways for optimizing customer relationships and introducing new cost analysis tools such as life cycle costing. It supports learning on the creation of product-service ecosystems within the fashion industry offering guidance on how fashion brands can successfully blend physical products, online platforms, and personalized services to enhance community engagement and the customer experience. Participants will gain knowledge on strategically constructing a holistic ecosystem that offers a range of services including clothing, accessories, styling, consultations, on demand production, repairs and P2P strategies.

LEARNING UNITS:

- BUILDING PRODUCT SERVICE ECOSYSTEMS
- COLLABORATIVE CONSUMPTION

MODULE 15 Strategic & Future Thinking

Within the learning module of Strategic and Future Thinking, learners will be focused on key elements such as re-positioning strategies, and technological and economic resilience. The module is designed to radically challenge the current fashion system and gain new skills towards thinking about the future and be prepared for new trends, increasing resilience capacities. Learners will be able to navigate through the textile and fashion industry by repositioning their own brands, having an overview of past, current and future technologies, situating the current



development of innovations, and ideating on new opportunities of market with associated value-chain configurations. Participants will learn how to envision diverse scenarios and position into a dynamic and tactical scope of the rapidly changing environment.

LEARNING UNITS:

RE-POSITIONING

See the specific section dedicated to Modules and Learning Units in the Annexes file.

Learning Outcomes

The Curriculum includes a description of the specific Learning Outcomes for each of the 15 modules. The main ones are summarised below. Each learning outcome is attached to a specific module and should be specified for each of the modules.

Technological Proficiency:

- Understanding and applying advanced technologies like AR, Blockchain, and IoT for fashion innovation and sustainability.
- Exploring traceability and digital tools for lifecycle management.

Sustainability and Circularity:

- Developing eco-design principles and applying circular economy models.
- Assessing the lifecycle and environmental impacts of materials.

Ethical and Inclusive Practices:

- Promoting fair labor practices, inclusivity, and diversity in business models.
- Aligning business strategies with social prosperity and ethical standards.

Consumer-Centric Approaches:

- Actively engaging users as stakeholders through co-design and feedback loops.
- Encouraging sustainable consumption models like renting and recycling.

Global and Local Dynamics:

- Building "glocal" partnerships that balance global reach and local impact.
- Navigating the interplay of culture, economics, and collaborative networks.

Strategic Management:

Integrating management techniques to align digital, sustainable, and business goals.



Enhancing communication strategies for truthful sustainability narratives.

6. Transitions Curriculum Tools

6.1 Teaching Methodologies - Glossary

Introduction

Teaching methodologies are strategies and techniques used to engage students in the learning process. They can include lectures, discussions, project-based learning, hands-on activities, and the use of technology. Educators can select from a variety of teaching methodologies that are most suitable for the specific target group for whom they are delivering the curriculum.

- Active Learning: engages learners through meaningful activities, emphasizing learner activity and engagement over passive reception of information.
- Blended Learning: integrates technology for personalized instruction, combining group dynamics and computer-aided individual skill sequences.
- Case Study Analysis: learners analyze real-world scenarios and practices to understand complex issues and apply theoretical knowledge.
- Challenge-based Learning: learners tackle real-world problems with the aim of finding practical solutions.
- Collaborative Projects: group work focusing on joint problem-solving and learning.
- Computational Thinking: merges mathematics, sciences, and digital literacy for developing skills using ICT and problem-solving techniques.
- Creative Problem Solving: focuses on innovative solutions through creative thinking, exploring multiple possibilities and approaches.
- Design Sprint: a time-constrained process where learners go through phases of design, prototyping, and testing ideas or products.
- Design Thinking: uses designer mindsets and methods to create user-focused strategies, emphasizing process over product and combining design, technology, and business.
- Digital Platform Exploration: engaging with online platforms to learn and apply digital competencies.
- Digital Tools Training: provides hands-on training sessions on digital tools, such as 3D modeling software, 3d printing, laser cutting, management tools, etc.
- Embodied Learning: learning through physical activity and bodily experience to grasp concepts.
- Experiential learning: connects theory to practice, whereby students "learn by doing" and by
 reflecting on the experience. Experiential learning activities can include, but are not limited
 to, hands-on laboratory experiments, practicums, field exercises, industry internships, and
 collaborative projects with fashion professionals and organizations.
- Expert Panels: sessions with experts discussing specialized topics, providing insights and



professional perspectives.

- Field Trips and Industry Visits: facilitate productive conversations between trainees and employees, creating networking opportunities and offering valuable insights into practical applications and real-life work environments. They can be composed of organized visits to Fab Labs, digital fabrication manufacturing facilities, factories, design offices, or research centers.
- Flipped Classroom: inverts traditional teaching by having students learn lessons at home and work on projects in class, fostering critical thinking and independent learning.
- Focus group methodology: it is about forming a multidisciplinary group to reflect, ideate and propose solutions around a specific topic. It involves structured discussions where participants can collectively discuss, express their perspective, analyze information, prototype and propose design interventions.
- Gamification: incorporates game design elements into learning to enhance creativity, retention, and engagement.
- Group Discussions and Brainstorming Sessions: interactive sessions for generating ideas and discussing topics collaboratively.
- Guest Lectures and Industry Insights: lectures by industry professionals sharing real-world experiences and knowledge.
- Individual Project and Presentation: independent work on a project followed by a presentation of the findings or outcomes.
- Informal Learning: learning from experience that takes place outside formally structured, institutionally sponsored, classroom-based activities.
- Inquiry-Based Learning: focuses on investigation and problem-solving, flipping the learning process and using various modalities like research and workshops.
- Interactive Discussions: Dynamic discussions that involve active participation and exchange of ideas.
- Interactive Lectures: Engaging lectures that involve learners actively through questions, activities, or discussions.
- Interactive Workshops: Practical sessions that involve active participation in tasks or problem-solving activities.
- Lectures and Seminars: inspire, inform and connect participants to professionals, experts, or alumni. They are about sharing perspectives, experiences and challenges on industry trends, technological advancements, sustainability and career paths.
- Market Research Techniques: teaching various methods for conducting market research.
- Masterclass: advanced courses by experts for in-depth exploration of subjects, emphasizing critical thinking and specialized knowledge.
- Microlearning: utilizes small, focused learning materials in e-Learning for specific goals, improving understanding and retention through concise content.
- Multi-Literacies and Discussion-Based Teaching: prioritizes active engagement and diverse texts, fostering rational thinking and higher-order skills.
- Nanolearning: short, focused tutorials for professional skills development, personalized and adaptable to individual needs.
- Online Collaboration Platforms: create digital space for participants to engage in



collaborative design activities, share ideas, and provide feedback asynchronously. Organize co-design sessions by using online platforms like Miro, or Figma etc.

- Online Resources: utilizing web-based resources for learning and research.
- Open Lab: allocate dedicated time for participants to freely explore and experiment with Fab
 Lab equipment under supervision to cultivate independent learning and
 experimentation.
- Peer Review and Feedback Sessions: learners review each other's work and provide constructive feedback.
- Project-Based Learning: participants develop projects through practical application of skills and problem-solving approaches, combining design thinking and prototyping.
- Role-playing: teaching method that involves students in simulated situations, enabling
 them to assume different roles and interact with authentic scenarios. It can be used to
 enhance various skills, including design, merchandising, communication, and customer
 interaction. This approach promotes a deeper understanding of industry dynamics,
 encourages collaboration, and improves interpersonal skills.
- Self-Directed Learning: encourages individuals to take initiative in their learning, emphasizing personal responsibility, autonomy, and growth.
- Signature Pedagogy: shapes how future practitioners are educated, developing habits of mind, hands, and heart foundational for professional practice.
- Seminars: inspire, inform and connect participants to professionals, experts, or alumni. They are about sharing perspectives, experiences and challenges on industry trends, technological advancements, sustainability and career paths.
- Simulation Exercises: using simulations to mimic real-world processes or situations for learning purposes.
- Simulation Games: games that simulate real-life scenarios for educational purposes.
- Situated Learning: acquired through active participation in specific workplace settings.
- STEAM Model integrates science, technology, engineering, art, and mathematics for a comprehensive learning approach, beneficial for adult education.
- User-centered methodology: learners learn to conduct user research, create personas, actively engage with external stakeholders and use iterative prototyping to refine their designs based on feedback, surveys and user data.
- Work-Based Learning (WBL): aligns with vocational education and training, emphasizing practical experience in educational programs.
- Workshops: focused meetings for active discussion, problem-solving, and hands-on practice aimed at developing solutions and exchanging ideas.

6.2 Teaching Content (PPT)

During the curriculum testing sessions at TLabs in each country, as well as during the online Train the Trainers (ToT) sessions, Transitions partners developed teaching materials in PowerPoint format. These power point presentations will be made available to the textile and fashion education community in the future to aid in course delivery. This initiative aims to enhance the



outreach of the Transitions project and ensure its sustainability after the project's conclusion.

Below is the list of PowerPoint presentations.

Transitions Project

Title	Partner(s)
Transitions Curricula Guidelines (Knowledge Areas, Competencies, Modules, Learning Units)	CITTA' STUDI
The modular curricula, modules, LUs and glossary of Teaching methodologies	CITTA' STUDI
Reflection of TLabs Informing the Curricula Design	IAAC
Quality Guidelines for teachers	PROTEKO
Quality Guidelines and Evaluation in Transitions - General Quality Guidelines	CITTA' STUDI
Quality Guidelines and Evaluation in Transitions - Indicators for Trainers	HVA
Learning Pathways Design Approach	CITTA' STUDI
Learning Pathways VET	CITTA' STUDI - IAAC
Learning Pathway HEI	ELISAVA- HVA
Learning Pathway Professionals	PROTEKO
Teaching Methodologies	CITTA' STUDI
Learning Arches presentation	ELISAVA

The Loopholes Toolkit

Title	Partner(s)
The Loopholes Toolkit	HVA

The Learning Units

Title	Partner(s)
Overview Knowledge area: Digitalization	ELISAVA
Overview Knowledge area: Sustainability	NOOF
Overview Knowledge area: Stakeholder Engagement	HVA
Overview Knowledge area: Business & Finance	HVA
Repositioning	PROTEKO
Socioeconomic and Governmental Factors	PROTEKO
Management Task Allocation	PROTEKO
More than human design	ELISAVA
Local community	IAAC





Sustainable trends	PROTEKO
3D virtual prototyping in Fashion	HVA
Systemic Design Generic Module	IAAC
Design Research Methods and Design Theories	ELISAVA

List of PowerPoint from the TLabs

Title	Partner(s)
6R Presentation & Exercice	NOOF
Sustainable to Circular	NOOF
Personalisation & Repairability	NOOF
User as a stakeholder	NOOF
Virtual Sampling	HVA
DDP & EPR	NOOF
Design for Disassembly, Jordi Muntaner	IAAC / ELISAVA / MODACC
From Sustainable to Circular Materials, Montse Bayen	IAAC / ELISAVA / MODACC
Yet More On Being Eco with Textiles	PROTEKO
Hallbar trendanalys	PROTEKO
Avfallstrappa med fokus pa Textilaterninning	PROTEKO
Konsument och tjanster	PROTEKO
Miss Mary of Sweden	PROTEKO
Ciszere Case-study	PROTEKO
Gina Trico Case-study	PROTEKO
Business Model Canvas	PROTEKO
Föreläsning HRDD/lagstiftning & workshop or	n
arbetsförhållanden i leverantörsledet by ETI SVERIGE	PROTEKO
Revolutioning one of the dirtiest games in the world by Circulari	PROTEKO
Cos'è il tessile	NTT
Esercizio ricomposizione filiera	NTT
II Case Zara	NTT
Moda e Sostebilità	NTT
CLO3D	PROTEKO
Gina Trico Workshop 1	PROTEKO
Gina Trico Workshop 2	PROTEKO
Loopholes, by Marco Mossinkoff	NTT/CITTA
Waste Journey	NTT/CITTA
Case-study Ecobulk	NTT/CITTA
Riduziones dei Rifiuti	NTT/CITTA
Strategie di Design Circolare	NTT/CITTA
EPR e Passaporto di Produtto	NTT/CITTA
Italian Textile Hub	NTT/CITTA
Le certificazioni di sostenibilità	NTT/CITTA
Tecnologie Smistamento	NTT/CITTA



	•
Collaborative Consumption	HVA
Virtual Sampling	HVA
Circular Fashion 2023	HVA
La importancia de la vision del ciclo de vida by INEDIT	IAAC / ELISAVA / MODACC
Textile Sorting Solutions by PICVISA	
Case-study FITEX	
Supply Chain Traceability platform by Retexcycle	
Gestio integral de residu solidaria by Solidança	
Systemic design	
ACV by INEDIT	
Case-study Infinit denim	
Designing with Sustainability in Mind: A Holistic Approach in	
Fashion Design	
Case-study Sylvia Calvo	
Circular Business Models	
Eco-Design Directive Presentation	

7. Assessment

Curriculum Assessment

The Transitions curriculum requires continuous assessment, especially since it operates under the Erasmus+ programme. The assessment process must consider several factors, including relevance, comparability, compatibility, transparency, mobility, and attractiveness.

During the Transitions project, we have approached the curriculum assessment in two main ways:

- Pilot Testing. Two TLabs have been conducted in each of the partners' countries, providing participants with the opportunity to give feedback on the pilots. Based on this input, project partners have updated the curriculum to better align with the needs of the Transitions project target. A final TLab is scheduled for February 2025, which will help finalize the curriculum assessment by addressing any remaining gaps or necessary adjustments.
- 2) Regular Meetings with project partners to implement continuous monitoring and refinement of Modules and Learning Units, ensuring their relevance and effectiveness.

Additionally, we have established a set of indicators to evaluate the curriculum's implementation, focusing on:

- Collaboration between educational and non-educational partners
- Compliance with national and international rules
- Selection and admission of participants
- Mobility
- Means of instruction (language, teaching methodologies, digital tools)



- Definition of Learning Outcomes
- Inclusivity
- Feedback from Learners, Trainers and Stakeholders for the continuous improvement

Learning Assessment

Learning assessment tracks student progress against the curriculum, evaluating their academic achievements and identifying areas where they may need additional support.

Beyond curriculum assessment, learning assessment has also been structured following established guidelines (see D4.5, paragraph 5). Each Learning Unit includes a variety of assessment methods, allowing trainers to select the most appropriate approach based on their target audience.

8. Learning Pathways

In alignment with the Transitions project's aim of developing a modular curriculum for vocational education and training (VET), higher education (HE), and professional training, we offer comprehensive guidelines tailored to support the development of three distinct learning pathways. These pathways are designed in accordance with the European Qualifications Framework (EQF) levels to ensure seamless integration into both existing and new educational and training programs. This structured approach aims to equip learners with the necessary skills and knowledge to drive sustainable transformation in the textile ecosystem.

A Learning Pathway is a structured sequence of educational experiences, including courses and activities, designed to achieve specific competencies in a particular field. The pathway is tailored to guide learners through progressively advanced stages of learning, ensuring they acquire the necessary skills and knowledge efficiently and effectively.

8.1 Higher Education

The HE level (EQF Level 7) corresponds to advanced knowledge and skills typical of a master's degree or equivalent. Learners at this level are expected to demonstrate expertise in specialized or multidisciplinary fields, integrating advanced knowledge and skills to solve complex problems and contribute to professional practice or academic research.

This pathway emphasizes the integration of digitalization, sustainability, and systemic thinking, addressing global challenges such as compliance with new EU sustainability legislation, advancing circular economy principles, and implementing Industry 5.0 technologies.

- Tailored for university-level students pursuing degrees in textiles, fashion, and related fields.
- Focuses on integrating advanced theoretical knowledge with practical applications.



- Emphasizes research, critical thinking, and interdisciplinary collaboration.
- Designed to align with the European Higher Education Area (EHEA) guidelines and qualifications framework.

Competences

Advanced Knowledge & Theory Application

- Integrate foundational and cutting-edge knowledge in textiles, fashion, sustainability, and digitalization.
- Develop research competencies focused on sustainability, circular systems, and digital transformations.
- Apply critical and analytical thinking to solve complex design and production challenges.

Interdisciplinary Collaboration & Communication

- Foster collaborative skills across fields, aligning with sustainability, ethical practices, and emerging technologies.
- Engage in interdisciplinary projects and communicate effectively within crossfunctional teams.
- Research & Innovation
- Conduct and apply research within textile and fashion contexts, contributing to innovation.
- Use research methodologies to identify, evaluate, and implement sustainable and digital solutions.

Global & Ethical Awareness

- Develop competencies in understanding and addressing global fashion and textile industry challenges.
- Embed ethical considerations in design, production, and management practices.

Teaching Methodologies

Teaching methodologies for HE learners emphasize critical thinking, independence, and collaboration in advanced contexts. These include:

- Problem-Based Learning
- Research-Based Teaching
- Case Studies and Simulations
- Collaborative Projects
- Reflective Practices

Example of a Collaborative Project: Learners collaborate with industry partners to develop a case study of a blockchain-enabled circular supply chain model for fashion products.

Activities

Activities at this level foster specialized problem-solving, digitalization, and sustainability. Examples



include:

- Research Projects: Conducting in-depth investigations using digital tools like CLO3D or PDM systems to address challenges in sustainability.
- Case Analyses: Critically evaluating circular business models and designing solutions for supply chain transparency.
- Collaborative Learning: Leading interdisciplinary projects with industry partners to integrate circular design principles.
- Presentations: Delivering insights and proposals to academic and professional audiences. Examples of Case Analysis, Research Project and Presentation:
 - Designing a lifecycle assessment for textile products, incorporating cradle-to-cradle principles.
 - 2. Developing a digital twin of a garment to simulate its environmental impact throughout the value chain.
 - 3. Conducting a foresight analysis of how Industry 5.0 technologies will shape sustainable fashion production.

Assessment Methods

Assessment at the HEI level evaluates advanced knowledge, critical thinking, and systemic problem- solving. Methods include:

- Research Projects: Exploring innovative solutions for industry challenges.
- Case Studies: Analyzing real-world applications of sustainability frameworks.
- Professional Portfolios: Documenting practice and reflective learning.
- Presentations: Articulating insights and solutions to diverse audiences.
- Scenario Planning: Developing adaptive strategies for future challenges.

Example of a Case Study: A consultancy project addressing a circular business model transition in response to ERP legislation.

Evaluation Criteria

Evaluation criteria at the HEI level emphasize the integration of theory and practice, focusing on:

- Advanced Methodologies: Mastery of specialized tools and design frameworks, such as Transition Design.
- Critical and Systemic Thinking: Synthesizing diverse information sources to develop innovative solutions.
- Sustainability and Digitalization: Addressing global challenges with advanced tools like lifecycle analysis and blockchain.
- Collaboration: Partnering effectively with interdisciplinary teams and industry stakeholders.

Example: A research report is evaluated based on its originality, methodological rigor, and relevance to sustainability goals in the fashion sector.

Additional Tools and Frameworks

Learners are introduced to advanced tools, such as:



- Lifecycle analysis (LCA) software to evaluate environmental impacts.
- Digital workflows (e.g., CLO3D, PDM systems) to integrate design and production processes.
- Transition Design Framework to develop systemic interventions for circular fashion.

Proposal of a structured training for HEI

8.2 Vocational Education and Training (VET)

The VET pathway outlined in this curriculum is designed to provide learners with a comprehensive and interdisciplinary education in sustainable and circular practices for the textile and fashion industries. Each module integrates theoretical knowledge with practical applications, fostering a deep understanding of systemic approaches, innovative technologies, and sustainable strategies. The curriculum emphasizes experiential learning through workshops, real-world challenges, and industry placements, ensuring that learners are equipped with both technical expertise and critical thinking skills. This structured approach not only prepares participants to address current industry challenges but also positions them as leaders capable of driving transformative change across the textile ecosystem.

- Aimed at learners enrolled in vocational training programs focused on practical skills and direct industry applications.
- Includes hands-on learning experiences, technical training, and industry-specific competencies.
- Emphasizes employability skills and immediate application in the workforce.
- Structured to meet the European Qualifications Framework (EQF) standards for vocational education.

Competences

Practical & Technical Skills

- Gain hands-on experience with digital tools, sustainable materials, and production processes.
- Build competencies in techniques such as CAD, AR/VR, sustainable manufacturing, and digital traceability.

Employability & Industry-Specific Competencies

- Cultivate skills directly relevant to industry roles, emphasizing adaptability and technical problem-solving.
- Understand and apply industry standards, including those for sustainability and circular design.

Immediate Application & Job-Readiness

- Prepare learners for direct entry into the workforce through competency-based projects.
- Focus on skills such as precision in technical work, attention to sustainable materials, and process efficiency.



Health, Safety, & Environmental Practices

- Develop awareness of environmental health, safety standards, and ethical practices in textile production.
- Implement eco-conscious practices and understand lifecycle management in production settings.

Teaching Methodologies

- Case Study Analysis
- Co-Design Projects
- Critical Thinking Exercises
- Group Discussions
- Guest Lectures and Industry Insights
- Interactive Workshops
- Project-Based Learning
- Scenario Analysis
- Self-Directed Learning

Suggested Activities

Product Development: Focuses on creating customizable fashion products using digital tools. Examples include developing virtual garments or personalized AR try-on products.

Service Design: Involves developing services that integrate advanced technologies, such as on-demand production services or blockchain-based transparency solutions.

System Analysis: Encourages evaluating impacts and proposing integrated systems, like designing a system to reduce supply chain waste using digital tools.

Assessment Overview: The assessments in the VET pathway focus on active participation, practical application, critical analysis, and collaborative problem-solving. They align with the learning outcomes of each module, emphasizing competencies in digitalization, sustainability, stakeholder engagement, and business strategies for the textile and fashion industries.

Assessment Methods

Active Participation: Students engage in discussions, workshops, and brainstorming sessions to explore course topics, demonstrate understanding, and contribute ideas.

Project Development: Learners develop and present projects, such as creating digital twins, designing virtual garments, or devising personalization strategies, showcasing their technical skills and innovative thinking.



Critical Analysis and Reflection: Tasks involve analysing case studies, evaluating systems or strategies (e.g., AR try-on technology or Blockchain in supply chains), and reflecting on their sustainability and efficiency.

Practical Application: Hands-on assessments require learners to use tools and technologies, such as 3D modelling software, data tracking systems, or digital production methods, to solve real-world challenges.

Collaborative Work: Group-based tasks, such as co-designing solutions or strategizing for circular economies, encourage teamwork and communication while addressing complex problems.

Presentations and Reporting: Students present findings, trends, or strategies, and write reports on their work, such as mapping a supply chain or creating marketing plans using data insights.

Scenario and Future Thinking: Learners analyse future trends, forecast scenarios, and propose adaptive strategies, particularly for sustainability and innovation in the fashion sector.

Examples of Assessment Aligned with Modules

- Digital Design and Production Tools: Projects creating AR try-on apps, virtual samples, or digital twin workflows.
- Sustainability Fundamentals: Proposals for eco-design, lifecycle assessments, or closed-loop production systems.
- Stakeholder Engagement: Analysis of ethical ecosystems or strategies promoting fair labour practices.
- Business and Finance: Development of sustainable business models or strategic repositioning plans.

Each assessment is designed to reflect a learner's ability to integrate interdisciplinary knowledge, demonstrate systemic thinking, and contribute to innovative and sustainable practices in fashion and textile industries.

Evaluation Criteria

The evaluation criteria for VET students are designed to assess their knowledge, practical skills, analytical abilities, collaboration, and creativity in addressing challenges within the fashion and textile industries. The criteria align with the curriculum's emphasis on digitalization, sustainability, stakeholder engagement, and business acumen.

Knowledge and Understanding

Learners are expected to demonstrate a strong grasp of sustainability principles, including the use of sustainable materials, lifecycle assessment (LCA), and eco-design concepts. They should also show proficiency in digital tools like CAD and 3D modelling, as well as an understanding of traceability technologies. Awareness of ethical labour practices, social



impacts, and the strategic foundations of sustainable business models is crucial. This can be evaluated through written tests, quizzes, and reflective essays.

Practical Application and Skills

Learners should exhibit the ability to apply theoretical knowledge through hands-on implementation, such as using digital tools for design and production or blockchain for traceability. They should develop practical solutions to industry challenges, including product prototyping and systems design focused on sustainability and innovation. These competencies are assessed through portfolio reviews, practical assignments, and project presentations.

Analytical and Critical Thinking

Learners must analyse case studies effectively, identifying opportunities for improvement and innovation. They should engage in scenario planning to address future challenges and apply systemic thinking to connect design, production, use, and information management across the value chain. These skills can be evaluated through group discussions, written reports, and strategy evaluations.

Collaboration and Communication

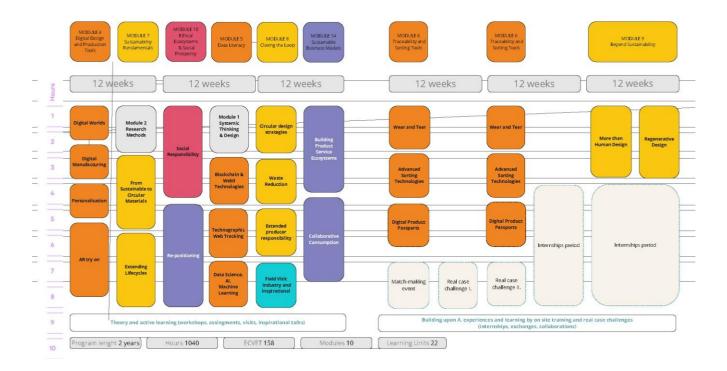
Teamwork is essential, with students expected to actively contribute to group projects and demonstrate effective collaboration. Clear and persuasive communication skills are evaluated through oral presentations, visual storytelling, and written formats. The ability to engage with stakeholders, understanding their perspectives and incorporating them into solutions, is also key. Peer assessments, group projects, and oral presentations are used to measure these abilities.

Innovation and Creativity

Learners should propose innovative designs or systems that integrate sustainable and digital practices. Entrepreneurial thinking is encouraged, with a focus on developing business ideas that align with circular economy principles. Adaptability in applying new technologies and methods is also valued. These competencies are assessed through innovation challenges, prototyping workshops, and creative pitches.

This comprehensive evaluation approach ensures that VET students are equipped with the skills and knowledge required to succeed in a dynamic and sustainable fashion and textile industry.







8.3 Professionals

Each company has its own challenges, viewpoints and pre-existing knowledge. This means that each company requires a personalised intake discussion to define their specific learning pathway. For this, we believe the Loopholes Toolkit is an excellent tool to map and identify the company's current situation, and its potential opportunities for circular growth. It can also be an effective tool to make a long-term plan on how to transition from a linear model, to a more circular one. The strategy cards of the Loopholes Toolkit are closely aligned with the Transitions curricula learning units and modules and therefore using the toolkit as an introduction gives a strong indication of where a company should focus their learning goals.

- Developed for current industry professionals seeking to update or expand their skills.
- Focuses on upskilling and reskilling to address emerging trends and technologies in the fashion and textile sectors.
- Includes flexible learning options such as short courses, workshops, and online modules.
- Designed to provide practical, actionable knowledge that can be immediately applied in professional settings.

Competences

Upskilling & Reskilling

Update skills in line with industry advancements in sustainability, digitalization, and circular economy practices.

Master emerging technologies and methodologies, including digital twins, blockchain for traceability, and eco-design.

Flexibility & Practical Knowledge Application

Engage in flexible, applied learning formats such as workshops and online modules for immediate workplace integration.

Apply new knowledge directly to current roles, addressing specific needs in professional practice.

<u>Leadership & Innovation in Industry Trends</u>

Foster leadership skills in adapting to and implementing industry trends within organizations. Develop strategic thinking in sustainable and digital innovation, influencing sustainable change within workplaces.

Network & Stakeholder Engagement

Build and sustain strategic partnerships and networks within the fashion and textile sectors. Practice stakeholder engagement, co-design, and ethical management skills to foster collaborative and sustainable ecosystems.

Considerations

When working with industry partners, it is important to arrange everything in consultation with the company.

It is commonly understood in the fashion and textile industry that companies do not have much

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time and/or budget to continuously train staff. Therefore, we have suggested of three different time commitments that could be followed to cover the contents of the Transitions curriculum, at three different knowledge levels:

- Level 1: commitment of 30 hours
- Level 2: commitment of 60 hours
- Level 3: commitment of 85 hours

In our example we have spread the hours of commitment over a 2,5 years' timeline, but both level of commitment, hours, and period of completion should be decided together with the company. For example, if they have 30 hours to spend, they may choose to undertake an intensive 1-year training – or even allocate one working week.

In some cases, companies may already have 'foundational' circular knowledge and wish to spend their 30 hours to follow a few more advanced modules more in depth.

Modules and learning units can also work as inspiration for one-off workshops of 1-3 hours.

Following are examples of how to allot the time in the three different levels mentioned above.

Level 1 – stated as a 1-week intensive course of 30 hours.

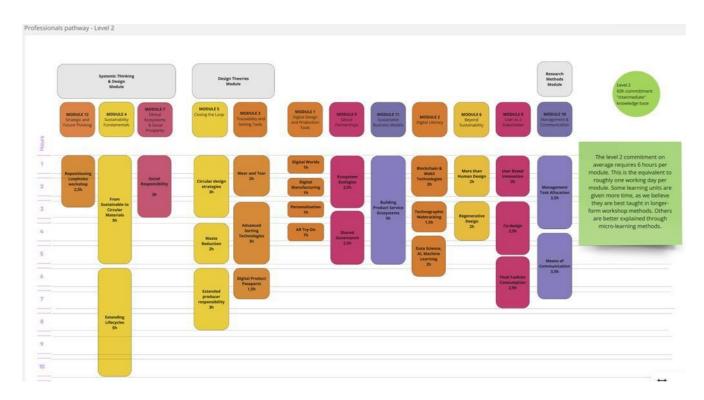




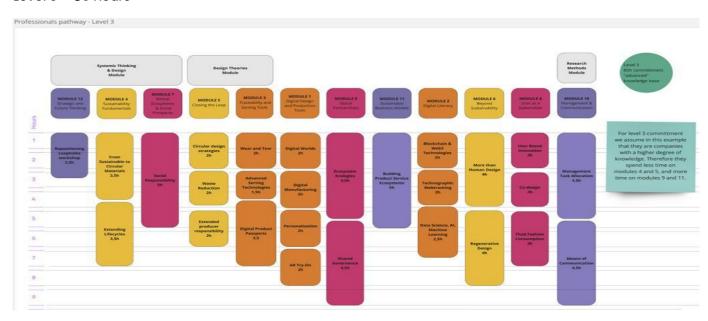
Level 1 - 30 hours



Level 2 - 60 hours



Level 3 - 85 hours





Teaching methodologies

These are the most relevant teaching methodologies for professionals, extracted from the Transitions Teaching Methodologies Glossary.

- Case Study Analysis
- Embodied Learning
- Guest Lectures and Industry Insights
- Informal Learning
- Interactive Discussions
- Microlearning
- Nanolearning
- Project-Based Learning
- Workshops

Activities

Each learning unit of the Transitions curriculum has suggested activities that align with a specific topic. These are presented at the Product, Service, and System level which roughly equates to the required level of understanding of VET, HEI and professionals. However, we see that when working with companies each of these levels are applicable, and each activity should be tailored to the specific company's needs. Below we give a summary of each activity 'focus' and have included an example that would be relevant to a professional learning audience.

Product: activities around products could either be focused on improving a product by redesigning it with a circular design method and improving it through the whole process. It could also mean looking at your suppliers and the material streams.

Example from the learning unit Personalisation:

Develop a Customisable Fashion Line: Task learners with designing a fashion line that incorporates elements of personalisation, such as customisable colours, styles, or fits, emphasising the reduction of waste and enhancement of customer satisfaction.

Service: what kind of circular business model could you implement? What would be relevant for your customers and other stakeholders?

Example from the learning unit Extending lifecycles: Undertake a garment lifecycle extension service design challenge through case study analysis and Masterclass delivery. The masterclass should highlight current challenges and opportunities in the fashion industry related to lifecycle extension, emphasise the importance of understanding consumer preferences and industry practices, and engage learners to identify key components of a service that can effectively extend the lifecycle of fashion products.



Learners should produce a service blueprint, including backend processes and digital integrations.

Systems: processes, how do you currently function. Loopholes. Change? We recommend using the Loopholes toolkit to map and evaluate current processes and systems, in order to identify possible changes.

Example from the learning unit Social Responsibility. Develop a service model that enhances social responsibility within the fashion ecosystem, utilizing best practices to improve worker welfare and consumer engagement.

Assessment Methods

There are limited methods for assessment of professional learning pathways, as professional learning in the Transitions curriculum does not equate to following an accredited course of study. However, it is of course important to monitor learner's knowledge throughout the educational process. We have selected several methods, outlined below, which work together to give a formative assessment of each learner's journey.

- Diagnostic assessment evaluates learners' current knowledge at the beginning of a course. Example: do a quick Menti-survey with 2-3 questions, such as: 1) what do you know about (today's topic)? One-word answers. 2) What do you hope to know more about after today's session? Needs to be done together with ipsative assessment.
- Ipsative assessment compares the learner with him/herself, and not to external references, so that the learner's development can be gauged. Needs to be done together with diagnostic assessment.

 Example: do another quick Menti-survey at the end of the session, to gauge what they learned during the session. Questions could be: 1) What did you learn today? Short answers.

 2) Rate the amount of new knowledge you gained in today's session, regarding today's topic (1-5, 1 being the lowest amount of knowledge gained).
- Project-based assessments participants work on real-world projects that directly apply learning outcomes to their own professional contexts.

 Example: let the company prepare a case from their business, maybe something they've been putting off. Engagement is higher when working with something that will be useful and helpful back in the office, and it will also create a natural implementation of new knowledge into



• Workplace implementation plans - participants create and present implementation plans showing how they will integrate what they've learned into their organization. This could follow a project or a workshop.

Assessment can also be based on the Kirkpatrick Model (figure 2):

Level 1: Reaction - Do participants find the training favourable, engaging, and relevant to their jobs?

Level 2: Learning - What do the trainees have and haven't learned? What do they think they'll be able to do (and with how much confidence) differently from now on, and what is the motivation they have to make changes?

Level 3: Behaviour - How well do people apply what they learned during training, when they return to their work? Does any person need help?

Level 4: Results - Here, the training generates the targeted outcomes. Evaluation of whether the outcomes (decided by the organization) are suitable for the business and the participants, and if they demonstrate a good return on investment (ROI).

Evaluation criteria

The Professionals level is the least unified of the three but must be considered to correlate to advanced knowledge. Often the professional has a shallow-to-mid level understanding of most of the business or industry they operate in, as well as a specific area of expertise which changes depending on their role within the industry.

This pathway emphasizes the need to understand where in their sustainability journey, we find the learner or the company, and what areas should be in focus moving forward. It's also important to take stock of the learner's preexisting skills. Training is then put together specifically to meet the needs identified.

The professional's level is tailored to those who:

- Aim to level up their sustainability practices
- Want to add circular business models to their preexisting (linear) model
- Seek to change career paths and want to upskill
- Managers and leading positions who seek to better identify and utilize the knowledgebase found within their company/organization

Evaluation is then based entirely on each learner's or company's preexisting knowledge base and their expected outcome with the education. Evaluation is best done over time, by following the Kirkpatrick Model:

1. Reaction

- Purpose: Measures how learners feel about the training.
- Focus: Learner satisfaction, engagement, and perceptions of the training's relevance.
- Methods: Surveys, feedback forms, or informal discussions.



• Example Question: "Did you find the training relevant to your job?"

2. Learning

- Purpose: Assesses the increase in knowledge, skills, or attitude changes because of the training, in context of preexisting knowledge.
- Focus: What learners have learned or retained.
- Methods: Surveys, feedback forms, or informal discussions.
- Example Question: "What new skills or knowledge did you gain from this session?"

3. Behavior

- Purpose: Evaluates whether learners apply what they learned on the job.
- Focus: Changes in behavior and application of skills in the workplace.
- Methods: Observations, performance reviews, or feedback from supervisors and peers.
- Example Question: "Are the new practices or skills being applied in daily work activities?"

4. Results

- Purpose: Examines the broader organizational impact of the training.
- Focus: Measurable outcomes, such as improved productivity, quality, and/or new sustainability practices put in place.
- Methods: Key performance indicators (KPIs), return on investment (ROI) analysis, or business metrics such as sustainability performance metrics.
- Example Question: "How has the training contributed to achieving organizational goals?"



Figure 2: Kirkpatrick Learning Assessment Model (Kirkpatrick J, Kirkpatrick WK. An introduction to the new world Kirkpatrick Model. Kirkpatrick Partners, 2021)



These Learning Pathways ensure that the Transitions Training Program can be adapted to the diverse needs of learners across different educational and professional contexts.

9. Transitions Labs Design

As stated in D5.1 (Definition and implementation plans of workshops for each pilot), and according to the Transitions proposal, Transitions Laboratories (Transitions Labs) serve as hubs to pilot the training programme. These labs have been set up in various locations, involving key stakeholders who take part in a series of activities and workshops focusing on the whole value chain and the circular economy. In Transitions Labs, participants are involved in work-based, hands-on learning experiences where project partners introduce a common language and collaborative pedagogical tools. The workshops provide opportunities for hands-on learning, allowing participants to apply previously developed knowledge, tools and skills to drive innovation or solve real-world problems.

Definition

Transitions Labs have been defined in D4.2 as:

- Laboratories for supporting transitions towards sustainability and digitalization in Textile and Fashion ecosystems.
- Playgrounds for experimenting with the modular curricula based on the Loopholes Toolkit and the Kaospilot methodology.
- Cooperations between vocational training, professionals and higher education institutions
- Spaces for grounding circular projects, appropriating local realities, emerging innovative concepts and fostering territorial policies related to innovative education in T&F

Transitions Lab values highlight the importance of such experimentation to be context-based, with active learning, openness and cooperative mindset, and for circular and digital transitions.

The Transitions Lab consists of:

- A coordination node composed of one or several partners
- A selected program of activities based on learning arches developed in Transitions, customized from Learning pathways elaborated in WP4."
- Teachers, lecturer's networks and external partners involved in content provision.
- Challenges identified with local partners, with associated target groups

D4.2 proposed different configurations as well as a methodology for running the Transitions Labs, that serve as a basis for launching the activities of WP5.



DISCOVER DEFINE **DEVELOP** · Transition approach and network The existing system / local stakeholders · Plan and organize the activities their · Loopholes games and cards The needs and gaps of your ecosystems format, the timing and logistics · How the project can benefit your Formulate possible local challenges you · Connect with experts and external want to address organization and territory resources · The area of focus, the modules · Design your communication strategies The programs of activities (arches and and think ahead on documentation roadmap) **DELIVER REFLECT SHARE** Run the activities, by managing the Assess your results and impacts at Communicate about your findings and stakeholder engagement, tracing and individual learning, local challenge, update the curriculum with developed documenting them organizational level and project scale content

Figure 3: Transition Lab Design Methodology (From D4.2)

Inspired by the approach of the double diamond design process (Design Council, 2005), the Transition Labs methodology helps to understand, envision, implement and reflect on the outcomes of the Transition Labs in diverse training contexts. It is an expanded double diamond that integrates 6 steps: discover, define, develop, deliver, reflect and share. Each step is further explained in *Figure 3* with a series of tools that can be used to ideate and document the activity of Transition labs. Those tools will be developed by WP5 partners and present in further deliverables.

Drawing inspiration from the double diamond design process (Design Council, 2005), the Transition Labs methodology facilitates understanding, envisioning, implementing, and reflecting on the outcomes of the labs in various training contexts. This methodology is an expanded version of the double diamond, consisting of six steps: discover, define, develop, deliver, reflect, and share. Each step is outlined in *Figure 3*, accompanied by a set of tools designed to ideate and document the activities within the Transition Labs. Moreover, in D5.2 (Report Transitions Labs Prototypes), an extensive and detailed report on the creation, making and evaluating of the Pilots has been performed. This allows us to repeat the positive things and adjust what's been suggested to perform in another way.



10. Quality Guidelines

The quality guidelines for curriculum in European projects, particularly under the Erasmus+ Programme, are detailed comprehensively in several documents; as for Transitions project, they were listed and analysed in D4.5. These guidelines aim to ensure that courses under the Erasmus+ Programme deliver high-quality educational experiences that are inclusive, interactive, and aligned with European values and policies.

Information and Transparency

Every programme needs to have advance and complete information (both general and more specific educational information); its application process, together with the selection of participants, must be clear and transparent. The transparency must involve also the costs connected to the programme.

Content and Pedagogy

The programme needs to have high quality teaching, and the subsequent modality of learning – the pedagogical approaches and the creation of an excellent learning environment – is key. Connected to these aspects, we must highlight the content, which needs to be always up-to-date, and the use of digital tools to support learning.

European Dimension

Programmes must reflect EU values, and offer networking opportunities, facilitating the mobility and the sharing of practices among different countries.

Services and Facilities

These aspects refer to the correct management of the programme, and include support to participants, which has to be timely and effective, schedule, that has to be coherent with the programme's objectives, staff, that has to be qualified and able to interact with different learners, and finally venue, which has to be adequate and accessible to disabled people.

Inclusion and Diversity

Inclusivity is mandatory, and people with special education needs must be guaranteed the same possibilities.

Feedback and Follow-up

Participants need to provide feedback, for the continuous improvement of the programme. Learners have to be informed of further possible learning steps, together with a clear and detailed certification of the programme followed, using EU recognition instruments.



Project Management and Quality Assurance

A quality assurance plan (including qualitative and quantitative KPIs) has to be established, together with a solid project management, which will continuously monitor and evaluate the execution of the programme.

Considering and aiming at fulfilling these principles, specifical guidelines for the programme have been defined:

Learning outcomes approach

Clearly defining what learners should know and be able to do after the training ensures the relevance and focus of the program. This is crucial across all levels to guarantee that training meets educational and professional standards.

Stakeholder involvement

Involving industry experts, employers, educators, and learners in developing and evaluating programs ensures that training is aligned with real-world needs and current industry practices.

Alignment with market needs

Regularly updating training content to match labour market requirements ensures that learners gain relevant skills, enhancing their employability and meeting employers' needs.

Quality Assurance

Implementing internal and external evaluations maintains high standards and credibility of the qualifications awarded, essential for trust and recognition across all levels.

Learner-centred approach

Tailoring learning experiences to individual needs and providing comprehensive support services boosts learner engagement and success by accommodating diverse backgrounds and learning styles.

Teacher and trainer qualifications

Ensuring that instructors have up-to-date knowledge and effective teaching skills improves the quality of education and training, leading to better learning outcomes.

Competence-based assessment

Using assessments that measure actual skills and competencies ensures that learners can apply their knowledge in practical situations, which is critical for both academic and professional success.

Self and Peer Assessments

Encouraging self-reflection and peer feedback to foster a collaborative learning environment.



Mobility and flexibility

Recognizing qualifications across different countries and institutions facilitates the movement of learners and professionals for further study or employment, promoting international mobility.

Use of technology

Integrating digital tools and e-learning platforms into training programs enhances accessibility and ensures that training remains relevant and up to date.

Sustainability

Ensure the curriculum supports sustainable development by integrating relevant competencies and fostering an understanding of sustainability issues among learners.

Inclusiveness

Ensuring equal access to training opportunities for all individuals promotes diversity and inclusion, essential for a fair and equitable education and professional environment.

Ethical standards

Including training on ethics and professional standards helps learners understand and follow the correct practices in their field. This is important for keeping integrity and trust in their profession.

Inspired by these guidelines, a series of indicators were set, to have a "checklist" to which to refer to. These indicators are organized in 4 general categories:

- Compulsory requirements: connected to the creation of the curriculum and organization of the programmes
- 2. Qualitative requirements: connected with the actuation of the programme
- 3. Results, achievement and Impact: connected to skills and learners' personal development
- 4. Stakeholder experiences and continuous improvement: connected to feedback and continuous improvement

Each indicator has a DESCRIPTION (what it is), a series of connected QUESTIONS (checklist to be done), a METHOD (how it will be checked) and a FREQUENCY (when it will be checked).



11.Glossary of Terms

Assessment: tools and methods used to measure student learning and evaluate their progress towards achieving the learning objectives.

Attitudes: predispositions or tendencies that individuals have toward certain ideas, objects, people, or situations. Attitudes influence how individuals feel, think, and behave and can significantly impact learning, performance, and interaction with others. Attitudes encompass elements like motivation, willingness to engage or learn, and openness to change.

Competencies: combine skills, knowledge, and other attributes (such as attitudes and behaviors) that enable individuals to perform their roles effectively. Competencies are often measured by how well an individual can apply their skills and knowledge in practical situations to achieve desired outcomes.

Generic Competencies: often referred to as generic skills or soft skills, are broad abilities and traits that are valuable across a wide range of jobs and life contexts (problem, solving, critical thinking, teamwork etc.).

Generic Modules: Systemic Approach to T&F design; Research Methods; Data Literacy.

Knowledge Area: Sustainability, Digitalization, Stakeholder Engagement, Business and Finance.

Knowledge: relates to the theoretical understanding, information, and facts that individuals possess in a particular area. It's about knowing the 'what' and 'why'—for instance, understanding the principles behind a scientific theory or the historical context of an event.

Learning Module: it is a group of learning units to create a thematic training course.

Learning Outcomes: define the goals that students are expected to achieve by the end of the course or program. These objectives guide the content, teaching methods, and assessments used in the curriculum.

Learning Pathways: structured sequences of educational experiences (courses and activities) to achieve specific competencies (skills, knowledge and attitudes).

Learning Unit: it is a component of a curriculum designed to provide a coherent block of content or skills development focused on a specific topic or area of study.

Skills: refer to the practical abilities or techniques that individuals acquire and develop through practice and training. Skills enable people to perform specific tasks effectively. They can be hard skills, such as coding or machinery operation, or soft skills, like communication or teamwork.



Specific Competencies: also known as technical skills or hard skills, are the abilities and knowledge necessary to perform specific tasks related to a particular job or profession.

Teaching Material: books, digital resources, multimedia, and other materials that support teaching and learning (Power point presentations of each LU from the TOT sessions).

Teaching Methodologies: strategies and techniques used to engage students in the learning process. This can include lectures, discussions, project-based learning, hands-on activities, and the use of technology.

12. Conclusions

The deliverable presents the outcomes of the collaborative work on designing prototype curricula for the Transitions training program, which comprises a modular curriculum and its associated Transitions Labs. The deliverable details the methodology used for co-designing the Transitions modular curriculum and its Transition Labs, including the definition of content, competencies, learning outcomes, and curriculum assessment.

As key outcomes, we highlight the following:

- The establishment of the foundations of the Transitions Training Program.
- The ideation of the modular structure of the Transitions curriculum.
- The creation of the content for each learning unit of the Transitions modular curriculum.
- The finalizing of the ideal curriculum, the learning experience, and the development of a pathway by each partner.

The results of the deliverable provide us with a common ground from which to iterate the different elements of the Transitions Training Program. In the next final phase of the Transitions Training Program Design, the three learning paths for the different educational contexts of the Transitions Training Program will be defined: HE, VET and Professionals.

transiti*ns 13. Annexes



In the Annexe 1 called "MODULES and Learning Units", we report all 15 MODULES and 31 Learning Units, divided into the five reference knowledge areas:

DESIGN RESEARCH

MODULE 1 Introduction Systemic Thinking and Design MODULE 2 Research Methods MODULE 3 Design Theories

DIGITALISATION

MODULE 4 Digital Design and Production Tools LEARNING UNITS:

- DIGITAL WORLDS
- DIGITAL PRODUCTION
- PERSONALISATION
- AR Try on

MODULE 5 Data Literacy

LEARNING UNITS:

- BLOCKCHAIN & UNIQUE ID TECHNOLOGIES
- DATA SCIENCE
- MACHINE LEARNING
- TECHNOGRAPHIC WEB TRACKING
- DATA SCIENCE, AI, MACHINE LEARNING

MODULE 6 Traceability and Sorting Tools

LEARNING UNITS:

- WEAR AND TEAR
- ADVANCED SORTING TECHNOLOGIES
- DIGITAL PRODUCT PASSPORTS

SUSTAINABILITY

MODULE 7 Sustainability Fundamentals LEARNING UNITS:

FROM SUSTAINABLE TO CIRCULAR MATERIALS

- EXTENDING LIFECYCLES
- ENVIRONMENTAL ACCOUNTING

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MODULE 8 Closing the Loop

LEARNING UNITS:

- WASTE REDUCTION
- EXTENDED PRODUCER RESPONSIBILITY
- CLOSED LOOP WATER & RENEWABLE ENERGY
- CIRCULAR DESIGN STRATEGIES

MODULE 9 Beyond Sustainability

LEARNING UNITS:

- MORE THAN HUMAN DESIGN
- REGENERATIVE FASHION

STAKEHOLDER ENGAGEMENT

MODULE 10 Ethical Ecosystems & Social Prosperity LEARNING UNITS:

- SOCIAL RESPONSIBILITY
- SOCIOECONOMIC & GOVERNMENTAL FACTORS

MODULE 11 User as a Stakeholder LEARNING UNITS:

- USER BASED INNOVATION
- CO-DESIGN
- FLUID FASHION CONSUMPTION

MODULE 12 Glocal Partnerships

LEARNING UNITS:

- **ECOSYSTEM ECOLOGIES**
- SHARED GOVERNANCE

BUSINESS & FINANCE

MODULE 13 Management & Communication





- MANAGEMENT TASK ALLOCATION
- MEANS OF COMMUNICATION

MODULE 14 Sustainable Business Models LEARNING UNITS:

- BUILDING PRODUCT SERVICE ECOSYSTEMS
- COLLABORATIVE CONSUMPTION

MODULE 15 Strategic & Future Thinking LEARNING UNITS:

RE-POSITIONING

14. Feedback from Partners on D4.3

FEEDBACK SUMMARY TRANSITIONS PARTNERS ON D4.3			
FEEDBACK	STRENGHTS	WEAKNESSES /	ACTION TAKEN
AREAS		IMPROVEMENT NEEDS	
Learning			Updated according
Pathways			partner's
			contribution
Graphics			Updated according to the
			European directive for visually
			impaired individuals
Overall			Updated according
Content			partner's
			suggestions