



# ECOdesign4EU

New Training Contents and Joint VET Qualifications on Ecodesign for Creative and Cultural Industries

INTELLECTUAL OUTPUT 1: European ECVET Curriculum of Reference on Ecodesign for Sustainable Creative and Cultural Industries



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## ECODESIGN4EU ECVET CURRICULUM Table of Contents

- 2 General Aim of the Curriculum
- 2 Target Group
- 3 Prerequisites for participation
- **3** Course Structure
- 4 ECVET ECOdesign4EU Curriculum of Reference
- 5 Key Area A: Ecodesign Strategies & Sustainability
- 9 Key Area B: Business & Sustainability
- 12 Key Area C: Production & Sustainability
- 14 The Curriculum Summary







### General Aim of the Curriculum

The European ECVET Curriculum provides a reference of competences in Ecodesign for sustainable Creative and Cultural Industries, using a common language to describe competences, skills, knowledge and proficiency levels that can be understood across Europe, following European standards and frameworks of reference. This Intellectual Output is designed to meet the needs of VET and in-company teachers, trainers and managers working to support I-VET and C-VET students on how to apply Ecodesign principles for sustainable CCIs.

The aim is to serve as a common basis for the elaboration of syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe. It describes what learners have to learn and what knowledge and skills they have to develop so as to be able to act effectively in the application of Ecodesign principles for sustainable Creative and Cultural Industries. It provides the means for educational administrators, course designers, teachers, teacher trainers, examining bodies, etc., to reflect on their current practice, with a view to situating and co-ordinating their efforts and to ensuring that they meet the real needs of the learners for whom they are responsible.



The target audience for this course is:

- Educational administrators
- Course designers
- Teachers
- Teachers' trainers

that are engaged in the creative and cultural sector and are interested in applying the Ecodesign principles in order to achieve sustainability in Creative and Cultural Industries.



## ECOdesign4EU ECVET CURRICULUM



## Prerequisites for participation

Suggested main prerequisites for participation are:

- Main pedagogical training experience already in place
- A minimum ground base level of IT proficiency (in terms of basic work with computers, search engines and software installation, word and image processing programs).
- Teachers that are engaged in the creative and cultural sector

The ECOdesign4EU ECVET Curriculum is developed at EQF level 6. The learning outcomes relevant to level 6 are characterised by:

Knowledge: Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles

Skills: Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study

**Competences**: Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups

## 👸 Course Structure

The key areas to be addressed by this course are:

Key Area A Ecodesign Strategies & Sustainability	Unit A.1: Basic components of ecodesign principles Unit A.2: Strategic Foresight in the CCIs market Unit A.3: Sustainable Strategic Business Plan in CCIs Unit A.4: Implementation of Sustainable Design concepts
Key Area B Business & Sustainability	Unit B.1: Circular supply chain system Unit B.2: Lifecycle assessment methodology Unit B.3: Sustainable digital transformation of CCIs
Key Area C Production & Sustainability	Unit C.1: Sustainable Resources & their Selection Unit C.2: Adaptation of the concepts of circular economy to the CCI sector



The following pages includes the competencies, knowledge and skills needed to apply Ecodesign principles in CCIs for all the key areas that are addressed by this course.

Below, there is a description of the three main key areas of the Ecodesign Curriculum:

### KEY AREA A ECODESIGN STRATEGIES & SUSTAINABILITY

### KEY AREA B BUSINESS & SUSTAINABILITY

### KEY AREA C PRODUCTION & SUSTAINABILITY



Includes ecodesign principles, sustainable design concepts, strategic foresight in CCIs & sustainable business plan



Includes notions of circular supply chain system, lifecycle assessment & sustainable digital transformation for CCIs



Includes identification of sustainable resources and adaptation of the concepts of circular economy to the CCI sector



## **KEY AREA A ECODESIGN STRATEGIES & SUSTAINABILITY**

#### UNIT A.1

#### **BASIC COMPONENTS OF ECODESIGN PRINCIPLES**

The learner is able to:



#### **KNOWLEDGE**

- define the meaning, the context and the principles of ecodesign
- discuss the emerging trends related to sustainability
- describe the ten unifying principles of nature as identified in Biomimicry
- outline the three essential elements of Biomimicry

#### SKILLS

- analyse the market trends and European policy on the implementation of ecodesign principles
- identify consumer demand for sustainable practice in their sector
- interpret the ten unifying principles in nature into an ecodesign plan for CCIs
- incorporate the three essential elements of Biomimicry into an ecodesign plan for CCIs

- instruct trainees to the meaning, the context and basic principles of ecodesign
- incorporate the principles of nature (Biomimicry) in ecodesign



## **KEY AREA A ECODESIGN STRATEGIES & SUSTAINABILITY**

#### UNIT A.2

#### STRATEGIC FORESIGHT IN THE CCI MARKET

The learner is able to:



#### **KNOWLEDGE**

- identify target groups connected with the CCIs
- name the yields, excesses and deficits the CCI industry produces
- outline emerging technologies, innovations and practices that can enhance sustainability
- name the key factors of change that can influence the CCI industry
- recognize the importance of goals and strategy in accordance to sustainability
- explain what sustainability strategic vision is and the impact to CCIs

#### SKILLS

- plan a target group-specific strategy when planning ecodesign for CCIs
- recognize the gaps and the potential of the CCI industry market
- respond to consumer trends in adapting and innovating design and production
- identify the key factors that can influence the CCI industry sector at present time
- illustrate goals and organize sustainable strategies
- develop a sustainability strategic vision related to CCIs

- incorporate the required elements of the CCI industry market on an eco-design plan for CCIs
- adapt and develop new products and practices and has a critical mindset in assessing and analyzing information
- identify the key internal and external influences faded by the CCI industry
- develop sustainable goals and strategies appropriate to the industry and evaluate environmental performance
- analyse the industry and build an energy-saving strategy and identify saving opportunities



## **KEY AREA A ECODESIGN STRATEGIES & SUSTAINABILITY**

#### UNIT A.3

#### SUSTAINABLE STRATEGIC BUSINESS PLAN IN CCI

The learner is able to:



#### **KNOWLEDGE**

- identify sustainable business goals
- set SMART indicators of success and review
- assess the sustainability goals in performance
- identify future risks and impacts of ecodesign
- explain ecodesign strategic processes and measurements
- measure impact of activities of CCIs on environment

#### **SKILLS**

- define the need for business adaptation to sustainability
- develop business plans to apply environmental policy to the activities and processes of the CCIs
- construct indicators of impact of activities of CCIs on environment

- explain the interaction between mitigation, adaptation and sustainable design
- apply sustainability policies to CCI businesses
- apply measurement tools and indicators to manage and minimize the impact of activities of CCIs on the environment



## **KEY AREA A ECODESIGN STRATEGIES & SUSTAINABILITY**

#### UNIT A.4

#### **IMPLEMENTATION OF SUSTAINABLE DESIGN CONCEPTS**

The learner is able to:

#### KNOWLEDGE

- discuss the primary concepts of sustainability
- describe specific improvements to design/production processes that can reduce the environmental impact of the products and resources they use
- identify that changing use of materials improves sustainability
- describe how specific re-use and upcycling measures can improve the waste cycle in their activities
- calculate the impact of measures to reduce energy consumption
- name tools that measure carbon footprint of a design/production/project

#### SKILLS

- differentiate between finite resources and renewable resources
- discover how to address the needs of the current generation without compromising the needs of future generations
- measure the environmental impact of a design/production concept
- demonstrate improvements in use of sustainable materials and resources in the production process
- predict the impact of energy reduction measures
- calculate the carbon footprint of a design or production

- foster an open attitude to change, keeps long-term benefits in mind and follows a process
  of design thinking in the implementation
- develop organizational and operational methods, policies, procedures or standards and to envision eco-innovation strategies and action plans to achieve them



### **KEY AREA B BUSINESS & SUSTAINABILITY**

### UNIT B.1 CIRCULAR SUPPLY CHAIN SYSTEM

The learner is able to:



#### **KNOWLEDGE**

- identify the stakeholders involved within the supply chain of the CCI sector
- define circular, sustainable and strategic design with a business vision
- describe the concepts and the range of a circular supply chain system
- organise entrepreneurial financial issues

#### **SKILLS**

- designate the different types of waste that is produced through the supply chain system and differentiate between forward and reverse logistics
- plan and analyse innovative processes within the supply chain of the CCI sector
- manage a circular supply chain system in a given CCI business

- apply design management techniques based on circular, sustainable and strategic methodology to minimize environmental impact while maximizing stakeholders' benefits
- take responsibility about the overall supervising of the process
- analyse and apply eco-innovation processes



### KEY AREA B BUSINESS & SUSTAINABILITY

#### UNIT B.2

#### LIFECYCLE ASSESSMENT METHODOLOGY

The learner is able to.



#### **KNOWLEDGE**

- describe the key factors for successful lifecycle assessment within the CCI sector
- describe the characteristics of an LCA project is (following ISO 14040 & 14044), the applications and limits of the LCA process and the specification for CCIs
- explain marketing sustainability achievements

#### **SKILLS**

- examine the influence of stakeholders within the CCI sector affecting product assessment
- outline how to implement LCA to assess the products of CCI businesses
- evaluate LCA tools

- apply the ecodesign strategy wheel to prompt design and solution improvements at key stages in the life cycle of CCI products
- interpret LCA results for an ecodesign project
- identify if LCA is the tool to use for each case
- apply circular approaches and consumption styles



### **KEY AREA B BUSINESS & SUSTAINABILITY**

### UNIT B.3 SUSTAINABLE DIGITAL TRANSFORMATION OF CCI

The learner is able to:



#### **KNOWLEDGE**

- discuss the advantages of digitization within the CCI sector
- define digital transformation and its implications in the context of European Digital Strategy
- describe the environmental impact of digital technologies and their use on CCIs
- list available sustainable digital solutions for CCIs

#### **SKILLS**

- outline how to combine digital transformation and CCIs
- evaluate the economic benefit digitalization investments can bring to the business
- identify appropriate digital solutions for CCI businesse
- develop a sustainable digitalization plan for CCIs

- develop ecodesign iterations based on test results
- develop digital transformation strategies for CCIs business models
- recognise the costs / benefits of digitalization in the CCIs



## KEY AREA C PRODUCTION & SUSTAINABILITY

#### UNIT C.I

#### SUSTAINABLE RESOURCES & THEIR SELECTION

The learner is able to:



#### **KNOWLEDGE**

- discuss carbon literacy
- classify resources in the categories of waste, recyclable and reusable
- define sustainable production and sustainable design strategies in CCIs
- explain how sustainability plans can support the selection of sustainable resources

#### SKILLS

- identify where waste and pollution occur in economic activity
- develop a plan for use of sustainable resources
- differentiate the resources in reference to sustainability in the CCI sector

- select sustainable resources
- develop strategy for CCI business and the use of sustainable resources



## **KEY AREA C PRODUCTION & SUSTAINABILITY**

#### UNIT C.2

#### ADAPTATION OF THE CONCEPTS OF CIRCULAR ECONOMY TO THE CCI SECTOR

The learner is able to:



#### **KNOWLEDGE**

- describe the core principles of the circular economy
- define the principles of waste and pollution elimination
- identify and apply the appropriate technology to produce prototypes of ecodesign concepts for the CCI sector

#### SKILLS

• plan, prepare and conduct usability tests with ecodesign prototypes

- identify circular economy concepts
- maintain an unbiased approach towards problem solving
- apply prototyping techniques to build ecodesign products for the CCI sector for evaluation

## **The Curriculum Summary**



#### **KEY AREA A: Ecodesign Strategies & Sustainability**



#### A.1 BASIC COMPONENTS OF ECODESIGN PRINCIPI FS

instruct trainees to the meaning, the context and basic principles of ecodesign
incorporate the principles of nature (Biomimicry) in ecodesign



#### A.2 STRATEGIC FORESIGHT IN THE CCI MARKET

- identify the key internal and external influences faded by the CCI industry

-analyse the industry and build an energy-saving strategy and identify saving opportunities



#### A.3 SUSTAINABLE STRATEGIC BUSINESS PLAN IN

#### CCI

 apply sustainability policies to CCI businesses
 apply measurement tools and indicators to manage and minimize the impact of activities of CCIs on the environment



#### A.4 IMPLEMENTATION OF SUSTAINABLE DESIGN CONCEPTS

- foster an open attitude to changeand follow a process of design thinking in the implementation

 develop organizational and operational methods and to envision eco-innovation strategies and action plans to achieve them

### **KEY AREA B: Business & Sustainability**



#### B.I CIRCULAR SUPPLY CHAIN SYSTEM

apply design management techniques based on circular, sustainable and strategic methodology to minimize environmental impact while maximizing stakeholders' benefits



#### B.2 LIFECYCLE ASSESSMENT METHODOLOGY

apply the ecodesign strategy wheel to prompt design and solution improvements at key stages in the life cycle of CCI products



#### B.3 SUSTAINABLE DIGITAL TRANSFORMATION OF CCI

 develop digital transformation strategies for CCIs business models
 recognise the costs / benefits of digitalization in the CCIs

### **KEY AREA C: Production & Sustainability**



#### C.1 SUSTAINABLE RESOURCES & THEIR SELECTION

 select sustainable resources
 develop strategy for CCI business and the use of sustainable resources



#### C.2 ADAPTATION OF THE CONCEPTS OF CIRCULAR ECONOMY TO THE CCI SECTOR

 identify circular economy concepts
 apply prototyping techniques to build ecodesign products for the CCI sector for evaluation



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