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

TICHE ACADEMY

Training Offer

ABSTRACT

TICHE - Training Innovation for Circularity and Holistic economies - is an Erasmus project aims at establishing a **European VET Academy on Circular Economy**, based on a transnational cooperation of a very experienced and complementary partnership, (including associated partners), joining Research centers, Vet centres, University, SMEs, clusters, Umbrella organizations and international networks, public administrations, that will work together as an ecosystem to increase capacity building and responsiveness of the VET systems, according to an “European Education Area”.

LEARN MORE ABOUT THE PROJECT

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TICHE Academy training offer's detailed description

General Description of the training initiative

Training initiative (title) *(ex. Expert in an eco-design for circular economy in the textile and fashion industries)*	CEIS - Circular Economy Innovation & Skills
EQF Level (if applicable)	None
Proficiency level *(foundation/basic, intermediate, advanced, high specialized level)*	High specialized level
Expected learning outcomes *(By the end of this course, the learners will acquire …….)*	Realization of a course that provides knowledge and skills related to environmental sustainability and circular economy in production processes, combining economic concepts and evaluations with elements of energy efficiency analysis and sustainability in product design
Methodologies	Educational course 128 hours of lessons, 2 editions, each edition for groups of 20 participants
Mode of Learning *(Blended, online, onsite)*	Hybrid form- Onsite and Online. Blended learning: 80 hours at distance and 48 hours in presence in Ferrara (2 weeks)
Assessment *(ex. test)*	None
Certification and recognition	Certificate of attendance
Targets	Students, academics, experts in the field, employees in public organizations
Delivery Language/s	English

Modules of the training initiative

Module N.	Title of the Module/s	Learning/training hours (total)
MODULE 1	1st set of lessons	52 Hours
MODULE 2	2nd set of lessons	24 Hours
MODULE 3	3rd set of lessons	36 Hours
MODULE 4	4th set of lessons	16 Hours

Module's detailed description

MODULE 1	
Tile of the module: Sustainable Development and Industrial Production	
Main objectives of the module	
The module aims to provide the basics of the circular economy from a macro- and microeconomic perspective and to give an overview of the relevant legislation	
Contents/subjects of the module	
1. SUSTAINABLE DEVELOPMENT Economic-environmental sustainability: technological innovation, policies and international scenarios. Macroeconomic aspects, structural changes in sectors, business dynamics. Themes: greenhouse gas emissions, energy, circular economy 2. **CIRCULAR ECONOMY** The role of enterprises and productive sectors in the transition towards a green economy (low carbon and circular economy). Environmental policies based on market incentives (taxation, emissions trading, liability) and innovative business strategies and responses. 3. **ENVIRONMENTAL LEGISLATION** The reference regulatory framework on environmental issues, both EU and national, the related institutional architecture, authorisation regimes, standards and control systems **4. ENERGY PERFORMANCE** • Energy markets and policies: electricity markets and the role of renewables. • Economic tax incentives • Energy audit methodologies. Overview of energy consumption in various industrial sectors	
Learning Outcomes **The Learner will** *(ex. Have a clear understanding of the concept of CE, its historic development, its definitions, its principles. Know key examples of CE inpractice.)*	**Assessment criteria:** **The learner can** *(ex. Define the concept of CE and provide relevant examples. Identify relevant supporting concepts related to CE.)*
Have a clear understanding of key environmental sustainability theories Have a clear understanding of energy, circular economy and legislative aspect	Identify relevant supporting concepts related to CE

Achievements

Module: Sustainable Development and Industrial Production		
Knowledge *(Means the body of facts, principles, theories and practices that is related to afield of work or study. It is described as theoretical and/or factual knowledge)*	***Skills*** *(Means the ability to apply knowledge and use know-how to complete tasks and solve problems. They are described as cognitive (logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments)*	***Competencies*** *(Means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and personal development. It is described in terms of responsibility and autonomy)*
At the end of this unit the participant ***will know:***	*At the end of this unit the participant* ***will be able to:***	*At the end of this unit, the participant* ***will have acquired the responsibility and***

		autonomy to:
How environmental impact can be reduced with the adoption of more environmentally focused and sustainable/circular model	Knowledge about sustainable development Practical frameworks, and a future-focused circular models	Develop inter-personal, analytical and presentation skills; to give detailed insights into the challenges and problems encountered

MODULE 2	
Tile of the module: The Economic Evaluation of Environmental Innovation Projects in Relation to Company Performance	
Main objectives of the module	
The module aims to provide basics of environmental and economic evaluation of environmental projects	
Contents/subjects of the module	
1. Cost-Benefit Analysis (CBA) The economic valuation of the environment. Basic principles of economic evaluation: measuring environmental and non-environmental values, benefits and costs; evaluation methods; aggregation of values over time. Use of Cost-Benefit Analysis as a tool for the evaluation of public policies and private investment choices. Applications to the energy market. Study of cost-benefit analysis for ex-ante evaluations of the effectiveness and impact of different types of intervention. The module will be organised into the following sub-units: structure and use of cost-benefit analysis; choice and implications of different discount rates; cost and benefit estimation techniques; practical examples. 2. **LCA (Life Cycle Assessment)** Study of the entire life cycle of the product or service, including the relationship in the supply chain; detailed analysis of ecological, human health impacts in integration with technological and economic development	
Learning Outcomes **The Learner will** *(ex. Have a clear understanding of the concept of CE, its historic development, its definitions, its principles. Know key examples of CE inpractice.)*	**Assessment criteria:** **The learner can** *(ex. Define the concept of CE and provide relevant examples. Identify relevant supporting concepts related to CE.)*
Have a clear understanding of key environmental and economic evaluation theories	Knowledge of main evaluation techniques

Achievements

Module: The Economic Evaluation of Environmental Innovation Projects in Relation to Company Performance		
Knowledge *(Means the body of facts, principles, theories and practices that is related to afield of work or study. It is described as theoretical and/or factual knowledge)*	***Skills*** *(Means the ability to apply knowledge and use know-how to complete tasks and solve problems. They are described as cognitive (logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments)*	***Competencies*** *(Means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and personal development. It is described in terms of responsibility and autonomy)*
At the end of this unit the participant ***will know:***	*At the end of this unit the participant* ***will be able to:***	*At the end of this unit, the participant* ***will have acquired the responsibility and autonomy to:***

Basics evaluation theories	Evaluate environmental and projects	Assess the impacts of environmental projects

MODULE 3
Tile of the module: Drivers and Indicators for the Economic and Financial Monitoring of Interventions
Main objectives of the module
The module aims to provide basics of environmental and economic evaluation of environmental projects
Contents/subjects of the module

1. **PROJECT MANAGEMENT OF RESOURCE EFFICIENCY INTERVENTIONS**
   - Basis of project management. Drivers and indicators for economic and financial monitoring of interventions. Presentation of sectoral case studies on the adoption of green innovations and their impacts on economic performance (profits, productivity).
   - Introductory part on Energy Performance Indices and the Baseline concept.
   - Indicators for Energy Efficiency Cost Benefit Analysis with particular reference to the concept of Net Present Value (NPV) and Cost of Energy Conserved (CEC).
   - BAT (Best Available Technology) and income statement examples for an industrial energy efficiency intervention.

2. **INVESTMENT EVALUATION AND PROJECT FINANCING OF THE ENERGY AND ENVIRONMENT SECTOR**
   - Main financing sources and instruments. Regional energy plan
   - The analysis of the identification and development of green patents with reference to technologies used in manufacturing sectors, in order to understand the formal ways of appropriating the value of R&D investments.

3. **BUDGETING**
   - Estimated physical resources needed
   - Estimated human resources needed
   - Cost estimation of the necessary physical and human resources in relation to the project timeframe
   - analysis of possible suppliers

4. **PHYSICAL-FINANCIAL MONITORING and RISK MANAGEMENT Project monitoring** techniques
   - Main accounting and reporting tools and techniques
   - Identification of internal and external risks and opportunities
   - Identification of early warning signs of risks and identification of possible actions to address them.

5. **SUSTAINABILITY BUDGETS AND SOCIO-ECONOMIC AND ENVIRONMENTAL CSR STRATEGIES. COMPANY CASE STUDIES**.
   - Sustainability budgets and socio-economic and environmental CSR (Corporate Social Responsibility) strategies.
   - Carbon footprint.
   - Business case studies.

Learning Outcomes **The Learner will**	**Assessment criteria:** **The learner can**
(ex. Have a clear understanding of the concept of CE, its historic development, its definitions, its principles. Know key examples of CE in practice.)	*(ex. Define the concept of CE and provide relevant examples. Identify relevant supporting concepts related to CE.)*

Have a clear understanding of key pillars of project management and financing	Definition, management and financing of a project

Achievements

Module: Drivers and Indicators for the Economic and Financial Monitoring of Interventions		
Knowledge *(Means the body of facts, principles, theories and practices that is related to afield of work or study. It is described as theoretical and/or factual knowledge)*	***Skills*** *(Means the ability to apply knowledge and use know-how to complete tasks and solve problems. They are described as cognitive (logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments)*	***Competencies*** *(Means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and personal development. It is described in terms of responsibility and autonomy)*
At the end of this unit the participant ***will know:***	*At the end of this unit the participant* ***will be able to:***	*At the end of this unit, the participant* ***will have acquired the responsibility and autonomy to:***
Basics theories of project management and financing	Management and coordination of environmental projects	Management and coordination of environmental projects

MODULE 4
Tile of the module: Budgeting and production processes for circular economy
Main objectives of the module
The module aims to provide basics of budgeting and project monitoring
Contents/subjects of the module
1. CIRCULAR ECONOMY IN PRODUCTION PROCESSES • Energy recovery (cogeneration, heat, incentives) • Food waste (biogas, bioplastics • Fashion • Solid waste (aluminium, glass, paper) 2. **DESIGN FOR RE-MANUFACTURING** • Environmental sustainability and industrial design • Principles of design for remanufacturing - disassembly • Concrete examples of design for remanufacturing

Learning Outcomes **The Learner will** *(ex. Have a clear understanding of the concept of CE, its historic development, its definitions, its principles. Know key examples of CE in practice.)*	**Assessment criteria:** **The learner can** *(ex. Define the concept of CE and provide relevant examples. Identify relevant supporting concepts related to CE.)*
Have a clear idea of circular processes with a focus on eco-design and remanufacturing	Define di the concept of remanufacturing and eco-design

Achievements

Module: Budgeting and production processes for circular economy		
Knowledge	***Skills***	***Competencies***

(Means the body of facts, principles, theories and practices that is related to afield of work or study. It is described as theoretical and/or factual knowledge)	*(Means the ability to apply knowledge and use know-how to complete tasks and solve problems. They are described as cognitive (logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments)*	*(Means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and personal development. It is described in terms of responsibility and autonomy)*
At the end of this unit the participant ***will know:***	*At the end of this unit the participant* ***will be able to:***	*At the end of this unit, the participant* ***will have acquired the responsibility and autonomy to:***
Steps for circular processes and role of remanufacturing	Address strategies for circular processes	Address strategies for circular processes