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Experimental phase and content of Ecosign Course for ECO-DESIGNERS

Introduction

Ecosign is a 3-year project co-founded by The Erasmus+ Program of the European Union, started on 1st November 2015, with the core objective to eliminate the lack of knowledge and skills of designers in industries related to eco-design and sustainable production**.** The final aim of Ecosign project is to develop and recognize a Joint Curricula on product eco-design by implementing innovative methods in e-learning and recommendations for face-to-face learning that will be available on the Ecosign platform at the end of the project foreseen on 31 October 2018.

How it goes?

After 28 months of intensive work, the Ecosign consortium has developed the structure of the courses and their contents. From April 2018 to end July 2018, the experimental phase of the ECOSIGN project will be kicked off with the implementation of "Pilot Cases experiences", which will test the training paths developed for the sectors involved: food packaging, electric & electronic goods, textile & clothing.

The courses will be free and divided into two modules. The first introduces the topic of eco-design considering various aspects, such as general principles, trends, legislative framework, life cycle cost analysis and environmental management systems.

The second module, on the other hand, will introduce Eco-design principles for each specific sector. At the end of the course a "project work" is foreseen where participants will have to set up a "close to market" project by applying expertise and knowledge acquired during the course.

Training courses will be targeted both at professional already working in companies and students enabling them to acquire knowledge and skills in environmental technologies.

Content of the Ecosign courses

The course consists of four modules, one general and three specific for each sector.

- 1ST MODULE**: Basic Concepts of Eco-Design.**

This module consists of 13 units regarding the main issues of eco-Design that will allow students to get a basic overview of Eco-Design and its applications. It must be completed before approaching the specific ones that follows in order to acquire the basic concepts of Eco-Design, the supporting tools to carry it out and the environmental aspects to think about.

Unit 1: Introduction to Eco-Design
Unit 2: Traditional Design against Eco-Design
Unit 3: European legal framework on environment and Eco-Design
Unit 4: Analysis and costs of Life-Cycle
Unit 5: Eco-Design principles
Unit 6: Environmental aspects of the company
Unit 7: Implementing Eco-Design
Unit 8: Environmental management
Unit 9: Eco-Design in the Environmental management
Unit 10: Introduction to eco-labelling communication
Unit 11: Environmental product declaration communication
Unit 12: Eco-Design practical cases
Unit 13: Final review course

- 2nd MODULE: **Concepts of Eco-Design in the Food Packaging sector.**

Unit 1: Introduction and general approach to food packaging Eco-Design
Unit 2: International and European standards and directive on food packaging Eco-Design
Unit 3: Concepts of food deterioration and preservation methods
Unit 4: Packaged product quality and shelf life
Unit 5: Logistical packaging for food marketing systems
Unit 6: Metal cans
Unit 7: Glass containers
Unit 8: Plastics in food packaging
Unit 9: Paper and paperboard packaging
Unit 10: Active and smart packaging
Unit 11: Modified atmosphere packaging
Unit 12: testing of food packaging

- 3rd MODULE: **Concepts of Eco-Design in the Electrical & Electronics sector.**

Unit 1: Introduction to Eco-Design in electronics
Unit 2: International and European environmental standards and directives on electronics
Unit 3: Eco certifications and labelling on electronic devices
Unit 4: General approaches and concepts in Electronic design
Unit 5: Management system in electronics sector
Unit 6: Life Cycle assessment of the electronic devices
Unit 7: Recycling of the electronic devices
Unit 8: Eco-Design in electronics and microelectronics system Part I
Unit 9: Eco-Design in electronics and microelectronics system Part II
Unit 10: Eco-Design in power electronics
Unit 11: Computer aided design CAD-tools for Electronics
Unit 12: Case study – Example
Unit 13: Internet of Things, IoT (Smart Cities, Smart Mobility, Smart Health)

- 4th MODULE: **Concepts of Eco-Design in the Textile & Clothing sector.**

Unit 1: Materials: natural & Man Made fibres; textile surfaces
Unit 2: Sustainability theme along the textile supply chain. Processes: spinning, weaving, finishing and making up
Unit 3: Compulsory and voluntary requirements at European and international level: Export rules
Unit 4: Compulsory and voluntary requirements at European and international level
Unit 5: Environmental Management systems
Unit 6: Life Cycle Assessment in the textile sector
Unit 7: Environmental certifications in the textile industry
Unit 8: Recycling processes in the textile sector
Unit 9: Eco-Design approaches in the textile sector
Unit 10: Sustainable Business Models

The participants/students will receive the training material in the following languages:

A) **1st Module "Basic Concepts"**: English, Italian, Romanian, Slovenian and Spanish
B) **2nd Module "Food Packaging"**: English, Romanian and Spanish
C) **3rd Module "Electrical & Electronics"**: English and Slovenian
D) **4th Module "Textile & Clothing"**: English and Italian

After each units, the participant/students will have to perform comprehension and testing exercises (unit quiz).

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Partners of the Ecosign Project

www.ecosign-project.eu