



**Improvement of Vocational Education and Training
related to Ecodesign and Sustainable Production
in the Furniture Sector**

WP2 – D2.1

**WP2 - Definition of the
training path and learning
contents and
D2.1 Training Guidelines**

V3.0



**Lifelong
Learning
Programme**

**This project has been funded with
support from European Commission**

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Context

Grant Agreement Number	2013 - 3692 / 001 - 001	
Project Number	539774-LLP-1-2013-1-ES-LEONARDO-LMP	
Call identifier	EAC/S07/12	
Programme	LIFELONG LEARNING PROGRAMME Centralized	
Sub-programme	LEONARDO DA VINCI	
Action	Multilateral Projects for Development of innovation	
Project Acronym	ECO4VET	
Project Title	Improvement of Vocational Education and Training related to Ecodesign and Sustainable Production in the Furniture Sector	
Project Starting date	1 st December 2013	
Project Duration	24 months	
Deliverable Number	D2.1	
Deliverable Title	Training Guidelines	
Nature of Deliverable	REPORT	
Dissemination Level	PUBLIC	
Due date of deliverable	M6	
Actual Date of deliverable	02/10/2014	
Produced by	PERA FINE ARTS – Karolin Basmacıyan	Date: 08/05/2015
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Validated by	CENFIM - Joaquim Solana	Date: 07/08/2015

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Issue Date	Version	Author	Sections affected / Change
11/08/2014	v0.1	PERA FINE ARTS – Karolin Basmacıyan	First draft
26/09/2014	V0.2	PERA FINE ARTS – Karolin Basmacıyan	Second draft
29/09/2014	V0.3	PERA FINE ARTS – Karolin Basmacıyan	Third draft
02/10/2014	V1.0	PERA FINE ARTS – Karolin Basmacıyan	Accepted deliverable version
08/05/2015	V2.0	PERA FINE ARTS – Karolin Basmacıyan	Template change. Inclusion of methodological information.
05/08/2015	V3.0	CENFIM – M ^a Carmen Cobos	Review of Unit's contents

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D2.1 Training Guidelines

1 Introduction

1.1 Objective

Training guidelines is a **reference document for Ecodesign and Sustainable Production VET for Furniture Industries**. It has been produced from the detection of the sector's training needs regarding these subjects.

The document has **dual functionality**:

- **For VET providers:** reference document for implementing the qualifications detailed here and develop contents according to them.
- **For VET trainees:** reference document about the different qualifications available, their units and its requirements and the learning outcomes that can be achieved depending on the selected units for a personal training path.

This document is divided in two parts:

1. Training paths.

This section contains three qualifications corresponding to three different profiles of staff in furniture industries:

- General Manager: Ecodesign and Sustainable Production General Management in Furniture Industries Diploma
- Production Manager: Sustainable Production Management in Furniture Industries Diploma
- Designer/ Design Technician: Ecodesign Management in Furniture Industries Diploma

It provides information about the ECVET points, the EQF Grade and the different modules and units.

2. Learning units.

This section provides information about the different units: ECVET points, aims, contents, learning outcomes to be achieved coursing the unit, recommended training and assessment methods and, if any, the prerequisites to access the unit.

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2 Methodology

Training guidelines describes training objective, learning units and learning outcomes in order to ensure that the training course meets the industry requirements (as identified in WP1). The guidelines summarize the joint curriculum designed, inform on its classification in reference to EFQ, and define training objectives, learning units and training and assessment methods.

Training Guidelines were defined from the learning outcomes pointed in WP1, that are listed in the result of WP1 “National qualification profile”.

The learning outcomes were analyzed and grouped into units. 14 units were defined as result. More learning outcomes were added to the units because of their relation with the previously established ones.

For each unit, besides “learning outcomes”, the fields “aims”, “Unit number and name” and “contents” for each unit were completed taking into account their “learning outcomes”. Furthermore, recommended training and assessment methods were proposed and prerequisites were established.

Units were grouped into modules and three training paths were defined for the following profiles:

- General manager
- Designer
- Production manager

Each training path leads to a qualification. According to the professional profile of the qualification the type of units was set to compulsory, optional and free-choice. Also, an EQF grade was defined for each qualification.

For providing additional information in numerical form on the relative weight of a unit in relation to a full qualification, ECVET points were attributed to each unit. The effort for the whole learning outcomes achievement was determined and it was turned into ECVET points (60 points are allocated to the learning outcomes expected to be achieved in a year of formal full time VET).

What are ECVET points?¹

“ECVET points are a numerical representation of the overall weight of learning outcomes in a qualification and of the relative weight of units in relation to the qualification.

Together with units, descriptions of learning outcomes and information about the level of qualifications, ECVET points can support the understanding of a qualification. The number of ECVET points allocated to a qualification, together with other specifications, can indicate for example, that the scope of the qualification is narrow or broad.

¹ The European Credit System for Vocational Education and Training - ECVET Questions and Answers – European Commission Education and Culture Lifelong learning: Policies and Programme ,Professional training; Leonardo da Vinci Revised-2011

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The number of ECVET points allocated to a unit provides the learner with information concerning the relative weight of what s/he has accumulated already. It also provides the learner with information concerning what remains to be achieved."

"Allocation of ECVET points to a qualification is based on using a convention according to which 60 points are allocated to the learning outcomes expected to be achieved in a year of formal full time VET."

What is EQF?²

"The **European Qualifications Framework (EQF)** acts as a translation device to make national qualifications more readable across Europe, promoting workers' and learners' mobility between countries and facilitating their lifelong learning. The EQF aims to relate different countries' national qualifications systems to a common European reference framework. Individuals and employers will be able to use the EQF to better understand and compare the qualifications levels of different countries and different education and training systems. Since 2012, all new qualifications issued in Europe carry a reference to an appropriate EQF level."

"The core of the EQF concerns eight reference levels describing what a learner knows, understands and is able to do – 'learning outcomes'. Levels of national qualifications will be placed at one of the central reference levels, ranging from basic (Level 1) to advanced (Level 8). This will enable a much easier comparison between national qualifications and should also mean that people do not have to repeat their learning if they move to another country."

	Knowledge	Skills	Competence
	In the context of EQF, knowledge is described as theoretical and/or factual	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments)	In the context of EQF, competence is described in terms of responsibility and autonomy
Level 1 The learning outcomes relevant to Level 1 are	basic general knowledge	basic skills required to carry out simple tasks	work or study under direct supervision in a structured context
Level 2 The learning outcomes relevant to Level 2 are	basic factual knowledge of a field of work or study	basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	work or study under supervision with some autonomy
Level 3 The learning outcomes relevant to Level 3 are	knowledge of facts, principles, processes and general concepts, in a field of work or study	a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems

² Official Journal of the European Union 6.5.2008. Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning

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<p>Level 4 The learning outcomes relevant to Level 4 are</p>	<p>factual and theoretical knowledge in broad contexts within a field of work or study</p>	<p>a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study</p>	<p>exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change</p> <p>supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities</p>
<p>Level 5 (*) The learning outcomes relevant to Level 5 are</p>	<p>comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge</p>	<p>a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems</p>	<p>exercise management and supervision in contexts of work or study activities where there is unpredictable change</p> <p>review and develop performance of self and others</p>
<p>Level 6 (**) The learning outcomes relevant to Level 6 are</p>	<p>advanced knowledge of a field of work or study, involving a critical understanding of theories and principles</p>	<p>advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study</p>	<p>manage complex technical or professional activities or projects, taking responsibility for decisionmaking in unpredictable work or study contexts</p> <p>take responsibility for managing professional development of individuals and groups</p>
<p>Level 7 (***) The learning outcomes relevant to Level 7 are</p>	<p>highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research</p> <p>critical awareness of knowledge issues in a field and at the interface between different fields</p>	<p>specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields</p>	<p>manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches</p> <p>take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams</p>
<p>Level 8 (****) The learning outcomes relevant to Level 8 are</p>	<p>knowledge at the most advanced frontier of a field of work or study and at the interface between fields</p>	<p>the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice</p>	<p>demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research</p>
<p>Compatibility with the Framework for Qualifications of the European Higher Education Area The Framework for Qualifications of the European Higher Education Area provides descriptors for cycles. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle. (*) The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the Joint Quality Initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5. (**) The descriptor for the first cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 6. (***) The descriptor for the second cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 7. (****) The descriptor for the third cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 8.</p>			

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3 Training paths

Qualification: Ecodesign and Sustainable Production General Management in Furniture Industries Diploma			
Total ECVET points: 4 ECVET points			
EQF Grade: 6			
Module	Unit type	Unit number and name	ECVET points
Module 1 Management Systems for furniture Industries (1 ECVET points)	Compulsory (1 ECVET points)	1- Introduction to Management Systems	0,25
		2- Management Systems Implementation in Furniture Sector I	0,5
		3- Management Systems Implementation in Furniture Sector II	0,25
Module 2 Environmental Management Systems and their application in the furniture Industry (1,25 ECVET points)	Compulsory (0,5 ECVET points)	4- Business and Environment	0,5
	Optional (0,25 ECVET points)	5- Environmental Managements System Implementation I	0,25
	Free-choice (0,5 ECVET points)	6- Environmental Management System Implementation II	0,5
Module 3 Sustainable Production for Furniture Industries (1,25 ECVET points)	Compulsory (0,25)	7- Sustainable Production I	0,25
	Optional (0,5 ECVET points)	8- Sustainable Production II	0,5
	Free-choice (0,5 ECVET points)	9- Sustainable Production III	0,5
Module 4 Ecodesign for Furniture Industries (1,25 ECVET points)	Compulsory (0,5 ECVET points)	10- Introduction to Ecodesign in the Furniture Sector	0,25
		13- Ecodesign Strategies	0,25
	Optional (0,25 ECVET points)	11- Ecodesign Certification ISO14006	0,25
	Free-choice (0,75 ECVET points)	12- Ecodesign and Environmental Analysis I	0,25
		14- Ecodesign and Environmental Analysis II	0,5

To obtain this qualification the following points must be obtained:

- 2,25 compulsory points
- 0,5 optional points
- 1,25 free choice/optional points

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Qualification: Sustainable Production Management in Furniture Industries Diploma			
Total ECVET points: 4 ECVET points			
EQF Grade: 6			
Module	Unit type	Unit number and name	ECVET points
Module 1 Management Systems for furniture Industries (1 ECVET points)	Compulsory (0,25)	1- Introduction to Management Systems	0,25
	Optional (0,5)	2- Management Systems Implementation in Furniture Sector I	0,5
	Free-choice (0,25)	3- Management Systems Implementation in Furniture Sector II	0,25
Module 2 Environmental Management Systems and their application in the furniture Industry (1,25 ECVET points)	Compulsory (0,5)	4- Business and Environment	0,5
	Optional (0,25)	5- Environmental Managements System Implementation I	0,25
	Free-choice (0,5)	6- Environmental Management System Implementation II	0,5
Module 3 Sustainable Production for Furniture Industries (1,25 ECVET points)	Compulsory (1,25)	7-Sustainable Production I	0,25
		8-Sustainable Production II	0,5
		9- Sustainable Production III	0,5
Module 4 Ecodesign for Furniture Industries (1,25 ECVET points)	Compulsory (0,5)	10- Introduction to Ecodesign in the Furniture Sector	0,25
		13- Ecodesign Strategies	0,25
	Optional (0,25)	11- Ecodesign Certification ISO14006	0,25
	Free-choice (0,75)	12- Ecodesign and Environmental Analysis I	0,25
		14- Ecodesign and Environmental Analysis II	0,5

To obtain this qualification the following points must be obtained:

- 2,5 compulsory points
- 0,5 optional points
- 1,0 free choice/optional points

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Qualification: Ecodesign Management in Furniture Industries Diploma			
Total ECVET points: 4 ECVET points			
EQF Grade: 6			
Module	Unit type	Unit number and name	ECVET points
Module 1 Management Systems for furniture Industries (1 ECVET points)	Compulsory (0,25)	1- Introduction to Management Systems	0,25
	Optional (0,5)	2- Management Systems Implementation in Furniture Sector I	0,5
	Free-choice (0,25)	3- Management Systems Implementation in Furniture Sector II	0,25
Module 2 Environmental Management Systems and their application in the furniture Industry (1,25 ECVET points)	Compulsory (0,5)	4- Business and Environment	0,5
	Optional (0,25)	5- Environmental Managements System Implementation I	0,25
	Free-choice (0,5)	6- Environmental Management System Implementation II	0,5
Module 3 Sustainable Production for Furniture Industries (1,25 ECVET points)	Compulsory (0,25)	7- Sustainable Production I	0,25
	Optional (0,5)	8-Sustainable Production II	0,5
	Free-choice (0,5)	9- Sustainable Production III	0,5
Module 4 Ecodesign for Furniture Industries (1,25 ECVET points)	Compulsory (1,25)	10- Introduction to Ecodesign in the Furniture Sector	0,25
		11- Ecodesign Certification ISO14006	0,25
		12- Ecodesign and Environmental	0,25
		13- Ecodesign Strategies	0,25
		14- Ecodesign and Environmental Analysis II	0,5

To obtain this qualification the following points must be obtained:

- 2,75 compulsory points
- 0,5 optional points
- 0,75 free choice/optional points

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4 Learning units

Unit Number and name 1- Introduction to Management Systems
Module Number and name: 1- Management Systems for furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Getting an overview of management systems. Understanding quality management systems and identifying the advantages of implementing it in a furniture manufacturing company.</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Management System concept and types • Quality Management Systems: <ul style="list-style-type: none"> ○ Quality concept ○ Customers and processes approaches ○ Introduction to ISO 9001 ○ Quality management principles ○ General requirements of a QMS ○ QMS Certification process • Management Systems and QMS benefits
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Define a management system • Understand the need to implement a MS • List the basic principles of a quality management system • Identify the requirements of a QMS Standard • Describe the benefits and results of the implementation of a QMS <p>Skills</p> <ul style="list-style-type: none"> • Follow a QMS certification process <p>Competence</p> <ul style="list-style-type: none"> • Involve employees and process owners
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory. • Exercise: Sections of ISO 9001
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step A: Introducing the company for the project
<p><u>Prerequisites:</u> There are no prerequisites for this unit.</p>

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Unit Number and name 2- Management Systems Implementation in Furniture Sector I
Module Number and name: 1- Management Systems for furniture Industries
ECVET points: 0.5
<p><u>Aims:</u> Development of professional skills and acquisition of technical knowledge for implementing a Quality Management System in a furniture company</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • ISO 9001 Implementation: <ul style="list-style-type: none"> ○ Steps ○ Considerations ○ Main characteristics ○ Requirements: <ul style="list-style-type: none"> ▪ Context ▪ Leadership ▪ Planning ▪ Support • Process maps definition <ul style="list-style-type: none"> ○ Process approach ○ Process-based QMS ○ PDCA methodology ○ Process maps
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Identify the steps for quality management systems implementation • List examples of processes • Define the necessary records to achieve the context, leadership, planning and support requirements <p>Skills</p> <ul style="list-style-type: none"> • Describe the organizational structure of a company • Itemise all processes and procedures of a business • Analyze different requirements for a Quality Management System implementation and draft procedures for its application in the organization <p>Competence</p> <ul style="list-style-type: none"> • Assume commitment and leadership responsibilities • Be able to organize a company
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Examples • Exercise: Understanding the meaning of QMS important terms
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step B: Listing processes
<p><u>Prerequisites:</u> There are no prerequisites for this unit.</p>

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Unit Number and name 3- Management Systems Implementation in Furniture Sector II
Module Number and name: 1- Management Systems for furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Acquisition of knowledge about the documentary and procedural requirements related to Management Systems and development of skills for continuous improvement in a furniture company</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • ISO 9001 Implementation: <ul style="list-style-type: none"> ◦ Requirements: <ul style="list-style-type: none"> ▪ Operations ▪ Evaluation ▪ Improvement
<p><u>Learning outcomes:</u></p> <p><u>Knowledge</u></p> <ul style="list-style-type: none"> • Define the necessary records to achieve the operation, evaluation and improvement requirements <p><u>Skills</u></p> <ul style="list-style-type: none"> • Collect all registration documentation • Determine criteria and methods needed to ensure that both the operation and monitoring are effective • Identify what needs to be done and establish an action plan • Apply corrective and preventive actions • Conduct an internal audit: verify that the implementation is appropriate and all instructions are met <p><u>Competence</u></p> <ul style="list-style-type: none"> • Lead the organization for better performance
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Examples • Exercise: Understanding the meaning of QMS important terms
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step C: Fulfilling ISO/DIS 9001:2015 requirements
<p><u>Prerequisites:</u> To access this unit, unit 2- <i>Management Systems Implementation in Furniture Sector I</i> must have been coursed.</p>

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Unit Number and name 4- Business and Environment
Module Number and name: 2 - Environmental Management Systems and their application in the Furniture Industry
ECVET points: 0.5
<p><u>Aims:</u> Understanding of the environmental impact of the economic activities of a furniture company and being aware of its negative consequences</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Sustainability concept • Furniture sustainability issues: <ul style="list-style-type: none"> ○ Environmental ○ Economical ○ Social • Pollution effects <ul style="list-style-type: none"> ○ Environmental problems ○ Environmental indicators ○ Furniture sector pollution effects ○ Prevention of pollution • The environmental impact of furniture business <ul style="list-style-type: none"> ○ Input-output diagrams for process steps ○ Qualitative risk assessment in process flow • Environmental impact and management
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • List main environmental issues of the furniture industry • Communicate the importance of improvements which reduce the environmental impact <p>Skills</p> <ul style="list-style-type: none"> • Identify the environmental links imposed to products and the environmental impact they may cause <p>Competence</p> <ul style="list-style-type: none"> • Be involved with environmental improvement • Analytical skills
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Exercise: Understanding environmental impact indicators
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

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Unit Number and name 5- Environmental Managements System Implementation I
Module Number and name: 2 - Environmental Management Systems and their application in the Furniture Industry
ECVET points: 0.25
<p><u>Aims:</u> Getting an overview of environmental management systems at an strategic level</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • ISO14000 Implementation: <ul style="list-style-type: none"> ○ Considerations ○ Main characteristics ○ General requirements ○ Requirements <ul style="list-style-type: none"> ▪ Context ▪ Leadership ▪ Planning ▪ Support
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Enumerate General requirements of ISO 14000 • Explain ISO 14000 requirements for context, leadership, planning and support <p>Skills</p> <ul style="list-style-type: none"> • Establish structure and responsibilities. • Define structure and responsibilities of a EMS • Develop the planning of a EMS. Set objectives and targets. <p>Competence</p> <ul style="list-style-type: none"> • General competences described in "management systems".
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Examples • Exercise: Understanding the meaning of EMS important terms
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step D: Identifying and assessing environmental aspects
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

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Unit Number and name 6- Environmental Management System Implementation II
Module Number and name: 2 - Environmental Management Systems and their application in the Furniture Industry
ECVET points: 0.25
<p><u>Aims:</u> Acquisition of knowledge about the documentary and procedural requirements related to Environmental Management Systems and development of technical skills for continuous environmental improvement in a furniture company</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • ISO14000 Implementation: <ul style="list-style-type: none"> ○ Requirements <ul style="list-style-type: none"> ▪ Operations ▪ Evaluation ▪ Improvement
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Explain ISO 14000 requirements for operations, evaluation and improvement <p>Skills</p> <ul style="list-style-type: none"> • Control, verify and implement corrective measures. "Continuous improvement" • Develop documentation of the environmental management system • Conduct an internal environmental audit • Establish operational control <p>Competence</p> <ul style="list-style-type: none"> • Monitor environmental performance • Lead the company to a better environmental performance
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Examples • Exercise: Understanding the meaning of EMS important terms
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step E: Fulfilling ISO/DIS 14001:2015 requirements
<p><u>Prerequisites:</u> To access this unit, unit 5- <i>Environmental Managements System Implementation I</i> must have been coursed.</p>

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Unit Number and name 7- Sustainable Production I
Module Number and name: 3 - Sustainable Production for Furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Acquisition of knowledge about environmental legislation and good environmental practices that can be applied in the furniture industry</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Sustainable Production concept • Good environmental practices definition, benefits and implementation • GEP's program <ul style="list-style-type: none"> ○ Development ○ Key people ○ Implementation SWOT • Good environmental practices for furniture companies by areas: <ul style="list-style-type: none"> ○ Purchases ○ Offices ○ Storage ○ Machining ○ Coating ○ Painting ○ Assembly ○ Packaging ○ Energy ○ Heating ○ Maintenance • Environmental legislation for furniture companies
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Become familiar with current legislation in the environmental area • Recognize good environmental practices: production processes improvement, raw materials source management, stocks reduction, packaging optimization, transport management, clean energy sources use, waste recovery,... <p>Skills</p> <ul style="list-style-type: none"> • Draft a Good Environmental Practices program <p>Competence</p> <ul style="list-style-type: none"> • Be involved with environmental improvement
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Exercise: Understanding the meaning of EMS important terms
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

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Unit Number and name 8- Sustainable Production II
Module Number and name: 3 - Sustainable Production for Furniture Industries
ECVET points: 0.5
<p><u>Aims:</u> Development of skills for applying good environmental practices in the furniture industry</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Furniture production environmental impacts • Environmental improvement areas <ul style="list-style-type: none"> ○ Resources and raw materials selection ○ Storage ○ Woodworking ○ Finishing ○ Maintenance ○ Cleaning ○ Waste management • Responsible purchasing of forest products • Improvements in production processes • Waste areas and valorization • Clean energy sources • Check operations • Problem's solution examples for Sustainable Production
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Understand, assess, minimize and prevent environmental impacts associated with furniture production. <p>Skills</p> <ul style="list-style-type: none"> • Detect environmental improvement areas in furniture manufacturing companies • Implement good environmental practices <p>Competence</p> <ul style="list-style-type: none"> • Be able to solve sustainable production problems
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Examples • Sustainable production problems: identifying environmental impacts and finding solutions
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step F: Identifying processes environmental impact
<p><u>Prerequisites:</u> To access this unit, unit 7- <i>Sustainable Production I</i> must have been coursed.</p>

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Unit Number and name 9- Sustainable Production III
Module Number and name: 3 - Sustainable Production for Furniture Industries
ECVET points: 0.5
<p><u>Aims:</u> Gaining knowledge and competences about environmental improvement measurement</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Environmental Performance Evaluation (EPE) <ul style="list-style-type: none"> ◦ Definition, objectives and benefits ◦ Environmental Performance Indicators (EPIs) definition and categories • EPE Implementation • EPI's examples • EPI's System Case Study
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Describe Environmental Performance Evaluation benefits • Recognize Environmental Performance Indicators <p>Skills</p> <ul style="list-style-type: none"> • Implement an Environmental Indicators System • Measure environmental improvements <p>Competence</p> <ul style="list-style-type: none"> • Monitor environmental performance of the production processes • Lead production operators to a better environmental performance
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Examples • Case Study • Exercise: understanding important Environmental Performance Evaluation terms
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step G: Establishing environmental performance indicators
<p><u>Prerequisites:</u> To access this unit, unit 8- <i>Sustainable Production II</i> must have been coursed.</p>

D2.1 Training Guidelines

Unit Number and name 10- Introduction to Ecodesign in the Furniture Sector
Module Number and name: 4 - Ecodesign for Furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Getting an overview of Ecodesign and its application in the Furniture Industry while understanding the benefits of its implementation.</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Ecodesign definition • Ecodesign key concepts <ul style="list-style-type: none"> ○ Lifecycle ○ Product system ○ Functional unit • Ecodesign process in the furniture sector <ul style="list-style-type: none"> ○ Strategic planning / Motivating factors, ecodesign team and reference product ○ Information and analysis/environmental assessment ○ Requirements definition/ecobriefing ○ Concept design/Environmental improvement ideas ○ Detailed design/environmental improvements definition ○ Verification and production and marketing planning/Quantification and communication of environmental improvements • Ecodesign difficulties and benefits for furniture industries
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Outline the peculiarities of Ecodesign in the furniture industry • Describe an ecodesign process • Emphasize the main factors that encourage the use of Ecodesign in the furniture industry <p>Skills</p> <ul style="list-style-type: none"> • Plan an Ecodesign process • Designate an ecodesign team • Select a reference product • Formulate ecodesign motivating factors <p>Competence</p> <ul style="list-style-type: none"> • Lead an ecodesign team
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Discussion: pros and cons of the integration of ecodesign in furniture companies • Exercise: lifecycle stages
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Completing design/ecodesign process diagram • Personal project step H: Defining ecodesign process
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

D2.1 Training Guidelines

Unit Number and name 11- Ecodesign Certification ISO14006
Module Number and name: 4 - Ecodesign for Furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Acquiring knowledge about recent eco design environmental management certification ISO14006 and the guidelines for eco design incorporation</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Ecodesign Certification • The ISO 14006 Environmental Management Systems: Guidelines for incorporating eco design. <ul style="list-style-type: none"> ○ Role of top management ○ Guidelines for incorporating eco design into an EMS <ul style="list-style-type: none"> ▪ Plan ▪ Do <ul style="list-style-type: none"> • Operational control <ul style="list-style-type: none"> ○ Plan ○ Do ○ Check ○ Act ▪ Check ▪ Act ○ Ecodesign activities ○ Correlation with other standards
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Identify the present environmental regulation about product design (eco design) • Describe auditable requirements of ISO 14006 • Recognize the opportunities of industrial competitiveness that account for Eco-design <p>Skills</p> <ul style="list-style-type: none"> • Apply ecological criteria in the design and development process according to the International Ecodesign Regulation ISO 14006 <p>Competence</p> <ul style="list-style-type: none"> • Lead the eco design implementation in a company
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Exercise: ISO 14006 contents • Exercise: Ecodesign activities
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Interactive quizzes regarding ISO 14006 Standard • Personal project step I: Fulfilling ISO 14006 requirements
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

D2.1 Training Guidelines

Unit Number and name 12- Ecodesign and Environmental Analysis I
Module Number and name: 4 - Ecodesign for Furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Acquiring skills for a reference product environmental analysis, identifying critical environmental points as a basis for eco design</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Environmental Analysis concept and types • Tools for environmental analysis <ul style="list-style-type: none"> ○ Strategic Environmental Valuation ○ Lifecycle Assessment <ul style="list-style-type: none"> ▪ Ecoindicator 99 • Critical environmental points detection • Ecobriefing
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Have knowledge of environmental analysis tools <p>Skills</p> <ul style="list-style-type: none"> • Calculate environmental impact of products from the qualitative and quantitative point of view • Generate environmental specifications for new product development • Find Significant Environmental Aspects of the products <p>Competence</p> <ul style="list-style-type: none"> • Analyze environmental impact of products
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Exercise: SEV scoring of a product • Exercise: Ecoindicator 99 Lifecycle assessment
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Case study solving: Reference product environmental analysis • Personal project step J: Reference product environmental analysis
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

D2.1 Training Guidelines

Unit Number and name 13- Ecodesign Strategies
Module Number and name: 4 - Ecodesign for Furniture Industries
ECVET points: 0.25
<p><u>Aims:</u> Gaining knowledge about the strategies that can be applied in each product lifecycle Stage for ecodesign</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Ecodesign strategies concept • Definition of the 8 ecodesign strategies and examples of their application in furniture: <ul style="list-style-type: none"> ○ New concept ○ Low impact materials ○ Elements reduction ○ Production optimization ○ Distribution optimization ○ Use's impact reduction ○ Lifespan optimization ○ End of life optimization
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • List ecodesign strategies and substrategies <p>Skills</p> <ul style="list-style-type: none"> • Generate Ideas for environmental improvement • Set the generation of conceptual alternatives <p>Competence</p> <ul style="list-style-type: none"> • Ability to include the environmental factor in the design field, by applying tools and strategies that can help to reduce the environmental impact of products and services throughout all the life cycle.
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Discussion: sharing ecodesign strategies examples • Exercise: ecodesign strategies
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Personal project step K: Finding environmental improvement ideas
<p><u>Prerequisites:</u> There are no prerequisites for this unit</p>

D2.1 Training Guidelines

Unit Number and name 14- Ecodesign and Environmental Analysis II
Module Number and name: 4 - Ecodesign for Furniture Industries
ECVET points: 0.5
<p><u>Aims:</u> Development of skills for checking the design of the product in terms of environmental improvement and take decisions that involve environmental criteria.</p>
<p><u>Contents:</u></p> <ul style="list-style-type: none"> • Environmental improvement actions • Environmental improvement actions' feasibility study • Environmental improvement alternatives selection • Improved product environmental analysis • Environmental Improvement evaluation • Environmental communication: ecolabels <ul style="list-style-type: none"> ○ Type I: ecolabels ○ Type II: environmental self-declaration claims ○ Type III: environmental product declarations
<p><u>Learning outcomes:</u></p> <p>Knowledge</p> <ul style="list-style-type: none"> • Recognize environmental communication tools (ecolabels) <p>Skills</p> <ul style="list-style-type: none"> • Check the detailed design of the new product • Evaluate the project and its results • Evaluate conceptual proposals and select the most appropriate <p>Competence</p> <ul style="list-style-type: none"> • Ability to make decisions that involve environmental criteria with products and processes, with the same importance as other criteria: functional, aesthetic, economical, ergonomic, etc
<p><u>Recommended training methods:</u></p> <ul style="list-style-type: none"> • Interactive theory • Exercise: SEV improvements calculation
<p><u>Recommended assessment methods:</u></p> <ul style="list-style-type: none"> • Questions exam • Case study solving: Reference product environmental analysis • Personal project step L: Evaluating environmental improvement
<p><u>Prerequisites:</u> To access this unit, unit 12- Ecodesign and Environmental Analysis must have been coursed</p>