



Step 2  
Sustainability

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# Training Program on Sustainable Manufacturing in Footwear

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*How to Implement Sustainable Manufacturing in Footwear  
- New Occupational Profile and Training Opportunities -*

# *How to Implement Sustainable Manufacturing in Footwear - New Occupational Profile and Training Opportunities*

## **Credits**

### ***Title***

Training Program on Sustainable  
Manufacturing in Footwear

### ***Coordination***

TUIASI

### ***Layout and Editorial***

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### ***Date***

January 2015

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### Executive Summary

The goal of WP 5- **Development of Training Programme on “Sustainable Manufacturing in Footwear”** is to define, organize, implement and evaluate all necessary actions for developing a new training programme in order to meet training needs of the new occupation and qualification profile and articulation with ECVET and EQAVET and to look for the transparency and transferability of the learning outcomes.

The main deliverable of this WP consists in a Training Programme aiming at meeting the development of all necessary skills and competences of the new occupation and qualification profile of Expert on “Sustainable Footwear Manufacturing” providing the articulation of the learning outcomes with ECVET and with the quality principles of EQAVET, seeking the transferability and recognition Europe wide.

The **“Training Programme on Sustainable Manufacturing in Footwear”** fits the new qualification profiles for two EQF levels of qualification. It's also target to all education and training entities and other agents related to training / employment. The training units merge and they should be common to both levels. In addition, the learning units /modules can be used separately for tailor-made training, and other objectives in the support of implementation of sustainable manufacturing in Footwear SMEs.

The training programme includes Objectives, Units, Learning Outcomes, Structure of each unit, as well as the training strategies and approaches in terms of Learning Activities, Assessment of learning, and ECVET points. It will be delivered in all consortium languages. This product is the input for the development of contents in WP6.

## 1. Introduction

The 5th WP of the STEP to SUSTAINABILITY project aims at defining, organizing, implementing and evaluating all necessary actions to develop the training programme to meet training needs of the new occupation and qualification profile and articulation with ECVET and EQAVET seeking the transparency and transferability of the learning outcomes. This work package was coordinated by TUIASI and the partners with experience in promoting and providing training (CTCP, INESCOP, ISC, IRCUO, ARS, COKA) were directly and intensively involved in designing process. The partners CEC and KLAVENESS followed-up all the work, analysed and validated the results.

The training program has been defined in several steps:

- Customization of the “content conception grid” which oriented the process, consisting in a tool that evaluated the lack of competences identified in the research, according to their relevance for the occupational profile. This tool helped the partners to fill the existing gap in terms of skills and competences with necessary for the implementation of a sustainable manufacturing system in footwear companies. The partners providers of training and education are familiar with this tool, however a customization process of it was necessary in order to provide all information needed for the STEP 2 SUSTAINABILITY specific programme.

- Identification of knowledge areas and field to be addressed to each developer partner according with their professional expertise, and assignment of training units to each one.

- Filled in the content development tools with all information regarding identification of the units of learning outcomes, designing the content of each unit, attribution of a time load to each content depending on the training methodology (lectures, demonstrations, queries, case studies, work based projects, etc.), set out the entrance-skills to every contents to be developed, design of possible itineraries to reach each one of those entrance-skills.

- Bridging the training program to ECVET, EQF and EQAVET.

- Presentation of the training programme to deciding on the further developments and strategies.

- Evaluation and validation.

- Translation into consortium languages.

The WP5 Deliverable is used as an input to WP6 and its final version will published in the website in order to be evaluated by stakeholders.

## 2. Customization of the content conception grid

### 2.1. Defining a new training programme in articulation with ECVET system

Starting with 2009, member countries of the European Union joined the efforts to achieve a major shift by introducing the system of transferable credits in vocational education and training system<sup>1</sup>.

In 2010, the European Commission issued a new call for proposal to finance a new generation of pilot projects under the Lifelong Learning Programme. The aim was to support national projects to test and develop the ECVET system. The selected European pilot projects were engaged in joint work and exchange about the methodologies for ECVET implementation<sup>2</sup>. As a result of this action, in the period 2011-2014, were developed by a number of ECVET tools which may constitute examples of good practice and starting points in the implementation of this system on a wider scale, all around the Europe.

An important promoter of the ECVET system is CEDEFOP (European Centre for the Development of Vocational Training). It supports the gradual implementation of ECVET, in cooperation with the European Commission, and addresses ECVET from European, national and sectoral perspectives. It monitors the ECVET implementation processes and strategies in Europe and publishes annual monitoring reports<sup>3</sup>.

The Thematic Network (NetECVET), that was responsible for developing the ECVET Mobility Toolkit, has led to the accumulation of very useful information in a web platform<sup>4</sup> where projects and examples of the application of the ECVET system for a wide variety of occupational profiles and training programs can be identified. Moreover, ECVET National Coordination Points were created in all European countries, so that through this system spreading throughout Europe, its application is only a matter of time and resources that the member countries are determined to allocate in the next period.

Apart from its aim to support the movement between different countries and different learning environments, the ECVET system also aims towards better compatibility between the different vocational education and training (VET) systems in place across Europe, and their qualifications. Among its various benefits, the ECVET system is a “European instrument that target improvements in recognition and transparency” and it “provides a framework for the assessment, validation and recognition of learning outcomes, alongside a series of common tools and instruments able to support quality in mobility”<sup>5</sup>. Also, the ECVET system “contributes to the development of a common language for use by different VET stakeholders and promotes mutual trust within the wider VET community”<sup>6</sup>.

The application of the ECVET system has to be in accordance with the legislation, rules and regulations applicable in the Member States and is based on the following principles and technical specifications<sup>7</sup>:

- **Learning Outcomes** - Statements of what a learner knows, understands and is able to do on completion of a learning process, and which are defined in terms of *knowledge, skills and competence*.
- **Units** - Coherent set of knowledge, skills and competence that can be assessed and validated. The occupational activities, tasks or processes are used as reference for designing units
- **ECVET points** - Numerical representation of the overall weight of learning outcomes in a qualification and of the relative weight of units in relation to the qualification.
- **Credit Transfer and Accumulation** - Credit for learning outcomes (i.e. credit) designates individuals’ learning outcomes which have been assessed and which can be accumulated towards a qualification or transferred to other learning programmes or qualifications.

<sup>1</sup> RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the establishment of a European Credit System for Vocational Education and Training (ECVET), 2009, <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:155:0011:0018:EN:PDF>

<sup>2</sup> <http://www.ecvet-projects.eu/>

<sup>3</sup> <http://www.cedefop.europa.eu/>

<sup>4</sup> <http://www.ecvet-toolkit.eu/site/introduction>

<sup>5</sup> MaecVET project, <http://www.maecvet.eu/wp-content/uploads/2015/03/MaecVET-Green-Paper-FI-.pdf>

<sup>6</sup> <http://www.ecvet-toolkit.eu/site/introduction/whyuseecvet>

<sup>7</sup> RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the establishment of a European Credit System for Vocational Education and Training (ECVET), 2009, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:155:0011:0018:EN:PDF>

- **Memorandum of Understanding (MoU)** - An agreement between competent institutions which sets the framework for credit transfer. It formalises the ECVET partnership by stating the mutual acceptance of the status and procedures of competent institutions involved.

- **Learning Agreement** - Individualised document which sets out the conditions for a specific mobility period. It specifies, for a particular learner, which learning outcomes and units should be achieved together with the associated ECVET points.

- **Personal Transcript** - A record of learning achievements. It contains information on learners' assessed learning outcomes, units and ECVET points awarded.

The ECVET system is seen as very important because it allows for openness and the learning process respects the trainee's/ learner's convenience. However, the implementation of this system might depend on the level of qualifications. Also, it depends on the national regulations of various bodies involved in training and education. In this respect, it is highly important that the training/education done in one country to be recognized in other countries, too. The ECVET is also seen as a tool to open doors for up skilling and continuous training. For instance, if the ECTS credit points could be matched to a certain level of qualification, the learner would not repeat some of the courses or units when he/she wishes to follow a new training or study program on a higher level.

### *2.2. Evaluating the lack of skills and competences identified in training needs research*

The STEP 2 SUSTAINABILITY project aims to assisting footwear companies to improve the sustainability in their production by creating, developing and piloting a new occupation and qualification profile and the correspondent training course. Through an extended field research based on questionnaires applied to 82 footwear companies, the project partners investigated the state on knowledge and understanding of the sustainability issues. This research revealed that the footwear companies are currently more aware to address the lack of competences and training needs in this field in order to be able to face the challenge of producing more environmentally friendly products and services.

The STEP 2 SUSTAINABILITY research report, namely Research on occupation and training needs on sustainable manufacturing in Footwear, underlined the willingness of the participants to increase their competitiveness by implementing a sustainable manufacturing strategy in their companies. Although achieving a sustainable production has been demonstrated as a priority, an outstanding level of knowledge, skills and competences as well as the training possibilities in this direction are still missing. All respondents were aware of the potential of sustainability and would like to learn how to optimize the use of resources, to reduce energy costs, to use new "green" materials, to design and to develop environmental friendly products, and to implement sustainable manufacturing processes, while being able to address new customers. Therefore, a training program for sustainable manufacturing in footwear should be concentrated on the identified lack of skills and competences in following areas:

- Environment
- Innovative materials
- Biodegradability
- Design and process optimisation
- Product liability
- Energy rationalization
- Social responsibility affairs
- Labour requirements. Healthy and safety
- Customer and supplier relationships
- Fair economic practices

According to surveyed companies, two main areas were identified for concentrating the Step 2 Sustainability training: Product design and Production optimisation. This is an important indicator of the needs that companies have and the new training programme will address a relevant number of hours to these areas of knowledge. Also Materials, Machine operations, Quality management, Energy efficiency, and Marketing areas registered that training in the field related with sustainability is needed.

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### 2.3. Occupational Profile – Input for designing the training programme

The starting point for designing the new training programme is the second main outcome produced by STEP 2 SUSTAINABILITY project, namely “New occupation and qualification profile – Expert on Sustainable Manufacturing in Footwear”. In turn, this occupational profile was developed based on the results of the survey and it was combined with already existing studies on sustainable manufacturing. In order to define the new occupational profile, the methodology described in the European Qualifications Framework (EQF) has been applied. Based on the EQF (European Qualification Framework) and according to the ECVET (European Credit System for Vocational Education and Training) available guidelines, the most suitable levels for the STEP 2 SUSTAINABILITY training programme have been selected:

#### • Level 4 – Technician on Footwear Sustainable

**Manufacturing.** This program will be provided by VET institutes, being awarded with double certification – scholar and professional;

#### • Level 5 – Specialist Technician on Sustainability for Footwear Industry.

This course will be provided by VET institutes in articulation with High Education entities.

The occupational profile for each level summarizes **activities** and **tasks**, as well the related **knowledge, skills and competences**. In the table below the differentiation between the two proposed levels of qualification is presented.

**Table nº 1 - Activities and tasks in the Occupational Profile**

ACTIVITY — TASK	DESCRIPTION	LEVEL 4 EQF TECHNICIAN ON FOOTWEAR SUSTAINABLE MANUFACTURING	LEVEL 5 EQF SPECIALIST TECHNICIAN ON SUSTAINABILITY FOR FOOTWEAR INDUSTRY
<b>ACTIVITY 1</b>	<b>IDENTIFICATION AND CONTROL OF THE COMPLIANCE WITH THE ENVIRONMENTAL LEGISLATION FOR THE FOOTWEAR INDUSTRY</b>		
Task 1 (A1-T1)	Searching footwear sector-related environmental legislation	x	x
Task 2 (A1-T2)	Identification of mandatory environmental legislation	x	x
Task 3 (A1-T3)	Control of the compliance with the mandatory environmental legislation for the footwear industry	x	x
<b>ACTIVITY 2</b>	<b>IDENTIFICATION AND CONTROL OF THE COMPLIANCE WITH OTHER LEGISLATION FOR THE FOOTWEAR INDUSTRY</b>		
Task 1 (A2-T1)	Control of the compliance with the mandatory Health and Safety at Work (HSW) legislation for the footwear industry	x	x
Task 2 (A2-T2)	Control of the compliance with the mandatory product legislation for the footwear industry (REACH and consumer safety)	x	x
Task 3 (A2-T3)	Control of the compliance with the mandatory labour, social and trade legislation	–	x

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ACTIVITY — TASK	DESCRIPTION	LEVEL 4 EQF TECHNICIAN ON FOOTWEAR SUSTAINABLE MANUFACTURING	LEVEL 5 EQF SPECIALIST TECHNICIAN ON SUSTAINABILITY FOR FOOTWEAR INDUSTRY
<b>ACTIVITY 3</b>	<b>IDENTIFICATION AND CONTROL OF NON LEGISLATED ENVIRONMENTAL IMPACTS PRODUCED BY FOOTWEAR COMPANIES</b>		
Task 1 (A3-T1)	Identification of non legislated environmental impacts produced by footwear companies.	x	x
Task 2 (A3-T2)	Use of environmentally-friendly materials	x	x
Task 3 (A3-T3)	Eco-design	x	x
Task 4 (A3-T4)	Eco-processes and technologies	x	x
Task 5 (A3-T5)	Control of packing and packaging resources	–	x
Task 6 (A3-T6)	Control of logistic resources (storage, transportation and distribution)	–	x
Task 7 (A3-T7)	Control of marketing resources	–	x
<b>ACTIVITY 4</b>	<b>IDENTIFICATION AND CONTROL OF OTHER NON LEGISLATED IMPACTS PRODUCED BY FOOTWEAR COMPANIES</b>		
Task 1 (A4-T1)	Control of implementation of certification systems	–	x
Task 2 (A4-T2)	Control of Social Corporate Responsibility Practices	–	x

The Occupational Profile has been evaluated by STEP 2 SUSTAINABILITY partners and following inputs were noticed to be used for the development of the training program:

- The “expert” in sustainability should be technician / specialist being aware of the possible target-group who will be interested in acquire this qualification. Therefore, two levels of qualification were considered, within Vocational Education Training framework, to open wider possibilities to trainees and companies and to provide wider opportunities for employability in Footwear sector. In this line, at least two training programmes has to be defined (both related to each other) to cope with these qualifications. Later on, other training opportunities could be defined, such as tailor-made training for niches/specific target-groups, post-graduation curricula, etc.
- The structure of the Occupational Profile which describes **activities, tasks, knowledge, skills and competences** is very useful for the further development of the training programme.

- The Occupational Profile includes a wider number of activities and tasks **to cope with all the aspects regarding sustainability** and to sustain other aspects besides environment. Therefore, activities not directly related to environment were introduced, such as: *“Identification and control of the compliance of the other legislation”* and *“Identification and control of other non legislated impacts produced by footwear companies”*.

- In order to promote the **employability**, the training program has to provide a broader knowledge framework, apart from the environment issues. Although an important part of the requirements for sustainability come from the environment agenda, the training program will consider other fields such as: product engineering, HSW, manufacturing, certification systems, marketing, logistics and sales etc.

- The training programme will be focused on themes/issues, rather than on activities. The **training units will be designed according to the field of knowledge**, such as: Environment regulations and standards, HSW legislation, Materials and components, Design and product engineering/Eco design, Process production and technology, etc.).

## 2.4. Model of the content conception grid

For the purpose of using all the information obtained from the evaluation of the Research on the Training Needs, corroborated with the Occupational Profile developed in this project for two levels of qualifications, and on the other hand for highlighting the technical aspects related to the implementation of the ECVET principles, the STEP 2 SUSTAINABILITY partners have been developed a tool called Content Conception Grid, whose structure is presented in table no.1.

**Table nº 1 - Model of the content conception grid**

	ELF Level		Title of the Training Unit	Partner	Objectives of the Training Unit	Learning Outcomes of the Unit		
	Level 4	Level 5				Knowledge	Skills	Competences
<b>DEFINITIONS</b>	Technician on Footwear Sustainable Manufacturing (to be provided by VET institutes) (double certification – scholar an professional)	Specialist Technician on Sustainability for Footwear Industry (to be provided by VET institutes in articulation with High Education Entities)	To use occupational activities, tasks or processes as reference for designing units	Developer partner of the unit	The main objective of the unit accordingly with the Activities and tasks described in the Occupational Profile	Statements of what a learner knows, understands and is able to do on completion of a learning process, and which are defined in terms of knowledge, skills and competence		

	Content of the Unit (structure)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>DEFINITIONS</b>	Description of the unit in terms of its content. It will be further developed by partners within the framework of WP6, being accordingly modified in order to avoid overlapping among various units. A detailed structure of the units and subunits will be included in WP6.	The learning activities may contain, but not limited at: contact hours (in class) for theory and practical sessions/ exercises, self-study, individual projects, assessment).  Indicate how the module/unit will be delivered. Select from the following options:  <ul style="list-style-type: none"> <li>• discussions</li> <li>• fieldwork</li> <li>• hands-on</li> <li>• lectures</li> <li>• lessons</li> <li>• work placement</li> <li>• presentations</li> <li>• project</li> <li>• role-play</li> <li>• seminar</li> <li>• tutorials</li> <li>• other (please specify)</li> </ul>	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.	Procedures and criteria for assessment of the learning outcomes  Indicate how the module/unit will be assessed. Select from the following options:  <ul style="list-style-type: none"> <li>• Test or examination,</li> <li>• Portfolio</li> <li>• Presentation</li> <li>• Project report</li> <li>• Research paper/report</li> <li>• Seminar/laboratory report</li> <li>• Other (please specify)</li> </ul>

## 3. Methodology for development of the training programme

The use of ECVET and its related accreditation/certification schemes specifically oriented to the qualifications for the footwear industry would be beneficial. Consequently, the project STEP TO SUSTAINABILITY brings an important contribution in this field of education and training by defining a new training programme in articulation with the ECVET system.

The STEP 2 SUSTAINABILITY training programme is designed taking in consideration the existing ECVET guides and recommendations, in particular the first set more related with the Transparency of Qualifications: *Learning outcomes, Units of learning outcomes, ECVET points and Assessment of learning outcomes*. For what concerns the other technical components associated with the Credit accumulation and transfer process, these are related with ECVET implementation for learner's mobility and therefore they has to be defined in the specific context of the involved organizations. *Validation and recognition of learning outcomes, Learning agreement, and Personal transcript* are defined in the framework of mutual trust among partner institutions and these agreements are formalized in a *Memorandum of Understanding*. The ECVET guides and recommendations provide orientation on how to define these technical components and delivers templates for writing the formal documents.

The training programme has been incrementally developed for creating a structured description of its content. The steps of the developing process are presented in the following chart.



The process of identification of the training needs which are reflected in the Occupational profile is previously described, at point 2.2. *Evaluating the lack of skills and competences identified in training needs research* and point 2.3. *Occupational Profile – Input for designing the training programme*.

The Activities and Tasks from the occupational profile have been transformed into following Units of learning outcomes:

- Standardization and Certification Systems
- Sustainable Materials and Components for Footwear
- Eco Design and Product Engineering
- Sustainable Manufacturing Technologies and Processes
- Environment Regulations and Standards
- Health and Safety at Work (HSW) in Footwear Industry
- REACH and consumer safety-Product legislation for footwear industry
- Contractual, Social and Trade Legislation
- Sustainable Packaging for Footwear
- Supply Chain and Logistics Management in Footwear Companies
- Green Marketing
- Social Corporate Responsibility Practices

Each Unit has a main Objective and, the Learning Outcomes were established by transforming the Knowledge, Skills and Competences (KSC) from the Occupational Profile according with the principles and rules for designing training curricula.

The Units, Objectives and Learning Outcomes are presented in table no 2.

In order to comply with the Learning Outcomes (KSC), the Structure of each unit was established and Learning Activities have been set. The training program for level 5 EQF is designed for a complete program of one year; therefore 60 ECVET points were allocated. This amount of ECVET points were distributed to each unit, based on their relevance and keeping the criteria of 25 hours for 1 ECVET point. In some cases, several adjustments were necessary in order to weight the importance of various units in the general framework of the training programme. The Structure, Learning Activities, ECVET points and Assessment of learning are presented in table no. 3

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**Table nº 2- Units, Objectives and Learning Outcomes**

EQF Level		Title of the Training Unit	Objectives of the Training Unit	Learning Outcomes of the Unit		
Level 4	Level 5			Knowledge	Skills	Competences
x	x	<b>Standardization and Certification Systems</b>	This training unit enhances the knowledge and the abilities of using the existing standards, recognizing their importance as a strategic tool and their impact on organizational effectiveness.	<ul style="list-style-type: none"> <li>• To have knowledge on standardization and conformity assessment -types, procedures, strategies, relevant organizations, legal system</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to use standards as decision making tool for increasing the company's competitiveness</li> <li>• To be able to identify necessary information on standardization and conformity assessment by searching relevant catalogs and sources</li> <li>• To apply the procedures for certification system in the company</li> </ul>	<ul style="list-style-type: none"> <li>• To demonstrate the ability of using standards as decision making tool for increasing the company's competitiveness</li> <li>• To decide on the add value for the company, in terms of organization, sustainability and gains of image</li> </ul>
x	x	<b>Sustainable Materials and Components for Footwear</b>	This training unit provides knowledge, skills and competences in order to identify, to characterize, to select, to control and to use various materials and components that have ecological/sustainable impact on footwear manufacturing	<ul style="list-style-type: none"> <li>• To know various types, structures and characteristics of materials and components used in footwear industry, with a view to their ecological / sustainable impact</li> <li>• To know the hazardous substances in footwear materials and final product</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to identify and to select environment friendly materials and components</li> <li>• To be able to decide on the substitution of certain materials by the one that are environment friendly, maintaining the same level of functionality and other characteristics of the model</li> <li>• To be able to evaluate/control the hazardous substances in footwear materials and final product</li> </ul>	<ul style="list-style-type: none"> <li>• To take decisions on the applicability of certain materials based on their ecological impact</li> <li>• To select suppliers of materials and components with ecological characteristics</li> <li>• To promote an "environment friendly" view toward the entire lifecycle of the footwear product</li> </ul>
x	x	<b>Eco Design and Product Engineering</b>	This training unit provides knowledge, skills and competences in order to know and to apply various eco-design concepts, models, tools and techniques for designing environment friendly footwear with a view to optimizing material consumption and manufacturing processes	<ul style="list-style-type: none"> <li>• To know how to design eco-friendly footwear in relation with type of materials, components and manufacturing processes</li> <li>• To know eco-design concepts, models and techniques in order to anticipate the environmental impact of the footwear from the designing stage</li> <li>• To identify various 3D computer-aided design tools in order to reduce physical samples and prototypes for production</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to apply eco designing concepts, models and techniques to footwear</li> <li>• To be able to design new models and to change the previous designs in order to reduce the variety of materials for a product, to achieve a better material consumption and to optimize the production time</li> <li>• To be able to use computer-aided design tools (Photoshop, 3D CAD design, etc.) for creating virtual prototypes</li> </ul>	<ul style="list-style-type: none"> <li>• To manage the product designing process from environmental perspective relating to the footwear sector, including both materials with eco-friendly characteristics and eco-efficient manufacturing processes.</li> <li>• To produce footwear designs and collections that fulfill environment criteria by using 3D CAD tools for virtual prototyping</li> <li>• To integrate the footwear eco-designs into the business model of the company</li> </ul>

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EQF Level		Title of the Training Unit	Objectives of the Training Unit	Learning Outcomes of the Unit		
Level 4	Level 5			Knowledge	Skills	Competences
x	x	<b>Sustainable Manufacturing Technologies and Processes</b>	<p>This training unit provides knowledge, skills and competences in order to plan and to manage highly efficient production processes by adopting sustainable technologies for footwear manufacturing in various production rooms: cutting, closing, assembling.</p>	<ul style="list-style-type: none"> <li>• To know the entire footwear production process: cutting room, closing room, assembling room.</li> <li>• To identify the energy sources and energy efficiency systems in each stage of the manufacturing process</li> <li>• To know the methods, techniques and tools for transforming the traditional footwear manufacturing into an environmental friendly process</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to select and to apply sustainable technologies to footwear manufacturing for cutting, closing, assembling and finishing</li> <li>• To plan and to evaluate the production process stages with environmental impact by: reducing variety and quantity of footwear materials, components and tools, reducing energy consumption and using renewable energy sources, reducing wastes, using materials that do not require additional treatments</li> <li>• To plan highly efficient production processes by introducing computer aided manufacturing (CAM) systems and robots</li> </ul>	<ul style="list-style-type: none"> <li>• To design and to manage the stages of footwear manufacturing in order to make the production process more sustainable</li> <li>• To demonstrate responsibility in decision-making for optimizing the resource within the framework of the footwear production processes</li> </ul>
x	x	<b>Environment Regulations and Standards</b>	<p>This training unit provides knowledge, skills and competences in order to search, to identify and to control the compliance of the mandatory environmental legislation for footwear industry</p>	<ul style="list-style-type: none"> <li>• To have extensive knowledge on environmental issues, especially regarding air, water, wastes, and noise</li> <li>• To know the general structure of national and European legislations on environment issues</li> <li>• To know the mandatory environmental legislation about hazardous substances, dust in working place, water restrictions, level of noise inside and outside the factory</li> <li>• To have knowledge on waste management</li> </ul>	<ul style="list-style-type: none"> <li>• To use legislative databases and search engines on environmental issues</li> <li>• To be able to control the parameters associated to environmental regulations and restrictions</li> <li>• To be able to act for reducing the level of environmental parameters according to the applied legislation by minimizing dust, noise, wastes, water usage, VOC and hazardous substances, and other practices that imply extra resources other than the minimum necessary</li> <li>• To select the suppliers of raw materials based on criteria of compliance to the environmental restrictions</li> <li>• To identify and to report any possible situation of risk</li> </ul>	<ul style="list-style-type: none"> <li>• To supervise the environmental practices of the company in order to comply with the national and EU legislations</li> <li>• To control the compliance with the mandatory environmental legislation about: hazardous substances, dust in work environment, water restrictions, level of noise inside and outside the factory and management of wastes.</li> </ul>

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EQF Level		Title of the Training Unit	Objectives of the Training Unit	Learning Outcomes of the Unit		
Level 4	Level 5			Knowledge	Skills	Competences
	x	<b>Health and Safety at Work (HSW) in Footwear Industry</b>	This training unit provides knowledge, skills and competences in order to control the compliance of the mandatory HSW legislation for footwear industry	<ul style="list-style-type: none"> <li>• To know national and European legislations on HSW</li> <li>• To know the risks within footwear manufacturing processes: risk for accidents and professional illnesses; harmful substances; devises and tools for production; electrical, fire and gas risks</li> <li>• To have general knowledge on machinery safety, as well as on plant and equipment maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to identify and to act for controlling and minimizing the risks with footwear manufacturing processes, including machinery and equipment safety, harmful substances, accidents and professional illnesses.</li> <li>• To be able to coordinate a team and to act according with the company's procedures for emergency situations</li> </ul>	<ul style="list-style-type: none"> <li>• To plan, to implement and to control the accomplishment of HSW to certain requirements according with legislation and company's strategies and regulations</li> </ul>
	x	<b>REACH and consumer safety-Product legislation for footwear industry</b>	This training unit provides knowledge, skills and competences in order to control the compliance of the mandatory product legislation for footwear industry (REACH and consumer safety)	<ul style="list-style-type: none"> <li>• To know the European legislation, regulations and procedures for products and materials: General Product Safety Directive and REACH</li> <li>• To know the procedures for REACH-Registration, Evaluation, Authorization and Restriction</li> </ul>	<ul style="list-style-type: none"> <li>• To collaborate and to implement with the Design/Product development department and with the Logistic department for materials acquisition in order to comply with the REACH regulations on restricted chemicals and their restriction limits</li> <li>• To be able to control if the footwear produced by the company accomplishes the relevant requirements according with REACH regulations</li> <li>• To be able to identify the suppliers and accredited testing laboratories that certify the compliance with the legislation on safety footwear components and hazardous chemicals</li> </ul>	<ul style="list-style-type: none"> <li>• To collaborate and to implement with the Design/Product development department and with the Logistic department for materials acquisition in order to comply with the REACH regulations on restricted chemicals and their restriction limits</li> </ul>
	x	<b>Contractual, Social and Trade Legislation</b>	This training unit provides knowledge, skills and competences in order to control the compliance of the mandatory contractual, social and trade legislation	<ul style="list-style-type: none"> <li>• To know the national and European legislation regarding human rights, contractual rules, social aspects and fair trade</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to select relevant requirements according with national, European and international trade legislations applied in footwear sector.</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to collaborate with the human resources, financial and selling departments in order to elaborate and to control the contractual requirements according with the trade legislation that is applied for import/export operations</li> </ul>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

EQF Level		Title of the Training Unit	Objectives of the Training Unit	Learning Outcomes of the Unit		
Level 4	Level 5			Knowledge	Skills	Competences
	x	<b>Sustainable Packaging for Footwear</b>	This training unit provides knowledge, skills and competences in order to adopt environment friendly packaging solutions	<ul style="list-style-type: none"> <li>• To have knowledge on the eco friendly packaging solutions, being aware on their environmental impact</li> </ul>	<ul style="list-style-type: none"> <li>• To identify the most environment friendly packaging techniques: recyclable materials, biodegradable materials, reusable packaging, etc.</li> <li>• To be able to select the suppliers that can provide environment friendly solutions for packing</li> <li>• To be able to adopt packing solutions packaging by efficiently using the own resources of the company</li> </ul>	<ul style="list-style-type: none"> <li>• To demonstrate capacity and responsibility for selecting, adopting and implementing the environment friendly packaging solutions.</li> </ul>
	x	<b>Supply Chain and Logistics Management in Footwear Companies</b>	This training unit provides knowledge, skills and competences in order to operate with logistic resources, including warehouse, transportation and distribution.	<ul style="list-style-type: none"> <li>• To know the LEAN manufacturing concepts and principles and related organization methods</li> <li>• To know advanced internal and external logistics solutions (AIELS).</li> <li>• To know highly-receptive techniques of production (HRTOP) on demand</li> <li>• To know the RFID technique for the accurate control of inventories and the systematic verification of orders and goods received</li> </ul>	<ul style="list-style-type: none"> <li>• To be able to apply advanced internal and external logistics solutions (AIELS)</li> <li>• To be able to apply the highly-receptive techniques of production (HRTOP) on demand.</li> <li>• To control of inventories and perform the systematic verification of orders and goods by applying the RFID technique for the accurate control of inventories</li> </ul>	<ul style="list-style-type: none"> <li>• To collaborate with the other departments (sales, marketing, production etc.) and to demonstrate responsibility and capacity to im-plement advanced methods, solu-tions and techniques for an effi-cient logistic system in company.</li> </ul>
	x	<b>Green Marketing</b>	This training unit provides knowledge, skills and competences in order to reformulate the marketing strategies of the company toward sustainability and to implement the green marketing tools	<ul style="list-style-type: none"> <li>• To know the green marketing concepts and principles/rules</li> <li>• To know the new business concepts: B2B, B2C and e-commerce.</li> </ul>	<ul style="list-style-type: none"> <li>• To identify the changes in the consumer behaviour and their lifestyle, to identify the market demands for eco friendly products</li> <li>• To be able to evaluate the companies' performance in terms of environmentally friendly operations and to identify areas for developing green marketing strategies;</li> <li>• To be able to propose changes of the marketing strategy of the company in order to respond to the requirements of the new business models: on-line purchases, B2B, B2C, e-commerce.</li> </ul>	<ul style="list-style-type: none"> <li>• To incorporate sustainable marketing strategies and principles in own company by reformulating the marketing mix tool.</li> <li>• To develop and to implement a green marketing plan for footwear based on company's social and environmental performance</li> </ul>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

EQF Level		Title of the Training Unit	Objectives of the Training Unit	Learning Outcomes of the Unit		
Level 4	Level 5			Knowledge	Skills	Competences
	x	<b>Social Corporate Responsibility Practices</b>	This training unit provides knowledge, skills and competences in order to plan, to implement and to control the company's Social Corporate Responsibility practices	<ul style="list-style-type: none"> <li>To know the SCR concepts, key actions, advantages and disadvantages and best practices</li> <li>To know how to act for SCR on various levels: community, environment, market, relation with employees, suppliers and clients</li> </ul>	<ul style="list-style-type: none"> <li>To care for the implementation of good practices of SCR,</li> <li>To be able to act for implementation and maintenance of the good practices on SCR</li> </ul>	<ul style="list-style-type: none"> <li>To apply critical success actions and best practices in SCR on key topics: involvement in communities, relations with employees, relations with suppliers and clients, responsibility on the environment issues</li> <li>To develop and to implement a SCR plan</li> </ul>

**Table n° 3- Structure, Learning Activities, ECVET points and Assessment of learning**

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>Standardization and Certification Systems</b>	<ol style="list-style-type: none"> <li>Introduction</li> <li>Concepts and definitions. Standard types and classification</li> <li>National and International standardisation: market relevance               <ol style="list-style-type: none"> <li>Standardisation organisations</li> <li>Standards search and catalogues</li> </ol> </li> <li>Conformity assessment: types and strategy               <ol style="list-style-type: none"> <li>Legal framework</li> </ol> </li> <li>Standardisation as a tool for strategic decision making and a key factor for competitiveness</li> <li>European Directives and Harmonised Standards</li> <li>IPR, patents and standardisation</li> <li>Management System Standards: ISO 9001:2015, ISO 14000, OHSAS 18000, SA 8000</li> <li>Environmental Management Systems: ISO 14001 and EMAS               <ol style="list-style-type: none"> <li>Environmental policy</li> <li>Identification of environmental issues</li> <li>Environmental issues in the footwear sector</li> <li>Assessment of the environmental issues identified</li> <li>Identification of legal requirements and main environmental regulations affecting the footwear sector</li> <li>Objectives, targets and environmental schemes</li> <li>Structure and responsibilities in environmental management</li> <li>Documentation and records in environmental management, operational control, follow-up and measuring. Audit and revision by the management</li> </ol> </li> </ol>	<p><b>I. Teaching in class/online:</b></p> <ol style="list-style-type: none"> <li>Lectures/Lessons - 50 hours</li> <li>Practical sessions: Exercises - 15 hours</li> </ol> <p><b>II. Self Study: 48 hours</b></p> <p><b>III. Assessment:</b></p> <ol style="list-style-type: none"> <li>Assessment test/Test quiz - 2 hours</li> </ol> <p><b>Total : 115 hours</b></p>	5 ECTEV points	<ol style="list-style-type: none"> <li>Quiz test</li> <li>Exercises reports</li> </ol>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>Sustainable Materials and Components for Footwear</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Concepts</li> <li>3. Leather               <ol style="list-style-type: none"> <li>3.1. Definition and classification</li> <li>3.2. Leather manufacturing</li> <li>3.3. Finishing and categorization</li> <li>3.4. Environmental impact of leather Industry</li> <li>3.5. More sustainable leather for footwear</li> <li>3.6. New Leather Materials</li> <li>3.7. Quality control and requirements</li> </ol> </li> <li>4. Textiles and Synthetics               <ol style="list-style-type: none"> <li>4.1. Origin and Classification</li> <li>4.2. Fibres</li> <li>4.3. More sustainable textiles and synthetics for footwear</li> <li>4.4. New materials</li> <li>4.5. Requirements and Quality Control</li> </ol> </li> <li>5. Soles and Midsoles               <ol style="list-style-type: none"> <li>5.1. Classification</li> <li>5.2. Natural origin materials</li> <li>5.3. Synthetic materials</li> <li>5.4. Soles and midsoles processing processes</li> <li>5.5. More sustainable sole materials for footwear</li> <li>5.6. New materials</li> <li>5.7. Requirements and Quality Control</li> </ol> </li> <li>6. Miscellaneous components and accessories               <ol style="list-style-type: none"> <li>6.1. Components and accessories</li> <li>6.2. More sustainable miscellaneous components and accessories for footwear</li> <li>6.3. Requirements and Quality Control</li> </ol> </li> <li>7. Eco labelling and eco certification of materials and footwear products               <ol style="list-style-type: none"> <li>7.1. EU footwear ecolabel</li> <li>7.2. Other ecolabels</li> </ol> </li> <li>8. Quality Control and Requirements               <ol style="list-style-type: none"> <li>8.1. Physical Properties</li> <li>8.2. Chemical Properties</li> <li>8.3. REACH Regulation</li> <li>8.4. CADS - List of Restricted substances in shoes</li> <li>8.5. Footwear Critical Substances</li> <li>8.6. Footwear Performance requirements</li> </ol> </li> </ol>	<b>I. Teaching in class/online:</b> 1. Lectures/Lessons - 30 hours  2. Practical sessions: Seminar / laboratory work - 30 hours  <b>II. Self Study - 63 hours</b> 1. Assessment test/Test quiz (2 hours) - 50%  2. Evaluation of Seminar/ Laboratory reports - 50%  <b>Total : 125 hours</b>	6 ECTEV points	<ol style="list-style-type: none"> <li>1. Quiz test</li> <li>2. Laboratory / Seminar report</li> </ol>

# TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>Eco Design and Product Engineering</b>	<p><b>I. Introduction: What Is Eco-Design?</b></p> <p><b>II. Strategies For Sustainable Product Design</b></p> <p>1. Design for Environment</p> <p>1.1 What is Design for Environment</p> <p>1.2 Aesthetic, performance and technical analysis of eco-materials</p> <p>1.3 Durability of the materials as a mean of sustainability</p> <p>2. Design for Manufacturing</p> <p>2.1 What is Design for Manufacturing</p> <p>2.2 Use of CAD (integration design – engineering - costing) to reduce consumption and waste in the design stage</p> <p>2.3 Virtual prototyping (rendering) and 3D printing</p> <p>2.4 Design optimization in the structure of a collection: optimisation of materials purchasing; reduction of tools (e.g. cutting dies)</p> <p>2.5 Lightness of the shoe as a mean to facilitate disposal</p> <p>2.6 Sustainable packaging</p> <p>3. Design for Recycling</p> <p>3.1 Aesthetic and functional analysis of the recycled materials</p> <p>3.2 Aesthetic and functional analysis of the recyclable materials</p> <p><b>III. Sources of Inspiration for Eco-Design</b></p> <p>1. Analysis of brands that convey the concept of sustainability through their styles</p> <p>2. Analysis of brands that convey the concept of sustainability not through their styles but rather through the labeling</p> <p>3. Analysis of vegan-brands</p> <p>4. Analysis of slow design brands (ONG fair-trade)</p> <p>5. Analysis of brands that use recycled materials</p>	<p><b>I. Teaching in class/online:</b></p> <p>1. Lectures / Lessons - 50 hours</p> <p>2. Practical sessions: Project work - 50 hours</p> <p><b>II. Self Study and Individual work on project - 48 hours</b></p> <p><b>III. Assessment:</b></p> <p>1. Evaluation of the Project work/report - 70%</p> <p>2. Assessment test / Test quiz (2 hours) - 30%</p> <p><b>Total: 150 hours</b></p>	<p>7 ECTEV points</p>	<p>1. Quiz test</p> <p>2. Project work</p>
<b>Sustainable Manufacturing Technologies and Processes</b>	<p>1. Introduction</p> <p>2. Preproduction activities. Product development</p> <p>3. Cutting department. Cutting machines</p> <p>4. Preparation department</p> <p>4.1. Splitting</p> <p>4.2. Skiving</p> <p>4.3. Ironing</p> <p>5. Stitching (closing) department</p> <p>5.1. Stitching machines</p> <p>5.2. Manual operations – different ways of gluing</p> <p>6. Making department – shoe assembly department</p> <p>6.1 Back part moulding</p> <p>6.2 Activation</p> <p>6.3 Toe lasting</p> <p>6.4 Seat and side lasting</p> <p>6.5 Heat and cool setting</p> <p>7. Bottoming department</p> <p>7.1 Roughing (and washing and halogenating)</p> <p>7.2 Gluing and pressing</p> <p>8. Finishing department</p> <p>9. Decision making: Process organization</p> <p>10. Decision making: Production planning</p> <p>11. Methods to achieve and maintain a sustainable production process</p> <p>12. Management tools</p>	<p><b>I. Teaching in class/online:</b></p> <p>1. Lectures / Lessons - 40 hours</p> <p>2. Practical sessions: Case Study work - 20 hours</p> <p><b>II. Self Study: 58 hours</b></p> <p><b>III. Project preparation - 20 hours</b></p> <p><b>IV. Assessment:</b></p> <p>1. Evaluation of the Case Study work / report - 70%</p> <p>2. Assessment test / Test quiz (2 hours) - 30%</p> <p><b>Total : 175 hours</b></p>	<p>8 ECTEV points</p>	<p>1. Quiz test</p> <p>2. Case study work</p>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>Environment Regulations and Standards</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. General structure of the environmental legislation</li> <li>3. Emissions to the atmosphere</li> <li>4. Water consumption</li> <li>5. Liquid effluents discharge</li> <li>6. Waste</li> <li>7. Environmental noise</li> <li>8. Energy efficiency</li> <li>9. Life Cycle Analysis, Greenhouse gases emissions, Footwear Carbon Footprint and Environment labels and declarations</li> <li>10. Environmental Responsibility</li> </ol>	<p><b>I. Teaching in class/online:</b></p> <ol style="list-style-type: none"> <li>1. Lectures: 25 hours</li> <li>2. Practical sessions: Activities for seminar / Exercises - 20 hours</li> </ol> <p><b>II. Self Study: 28 hours</b></p> <p><b>III. Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Evaluation of the Practical sessions / exercises reports - 50%</li> <li>2. Assessment test / Test quiz (2 hours) - 50%</li> </ol> <p><b>Total : 75 hours</b></p>	4 ECTEV points	<ol style="list-style-type: none"> <li>1. Quiz test</li> <li>2. Practical sessions reports / exercises</li> </ol>
<b>Health and Safety at Work (HSW) in Footwear Industry</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. National and European legislation on HSW               <ol style="list-style-type: none"> <li>2.1. National Legislation on HSW</li> <li>2.2. European Legislation on HSW. List of EU Directives on HSW. Indicative content of major EU directives on HSW</li> </ol> </li> <li>3. Corporate Health and Safety Policy and Strategy. HSW for the company, workers and the workplace               <ol style="list-style-type: none"> <li>3.1. Corporate HSW policy</li> <li>3.2. HSW for the company, workplace and staff</li> </ol> </li> <li>4. Planning HSW. Risk management. Supervising, professional training and information. HSW Planning and Risk Management</li> <li>5. Accidents (injuries) and investigations. First aid. Emergencies and reporting procedures.               <ol style="list-style-type: none"> <li>5.1. Accidents and injuries in the workplace</li> <li>5.2. First aid for injuries at work</li> <li>5.3. The reporting procedure of emergency incidents at workplace</li> </ol> </li> <li>6. Safety – electricity, fire and gas               <ol style="list-style-type: none"> <li>6.1. Fire protection in the workplace</li> <li>6.2. Fire protection in footwear industry</li> </ol> </li> <li>7. Safety of machinery, production equipment and maintenance equipment. Principles of work safety on machines and technical equipment</li> <li>8. Harmful substances in the workplace. Control of regulations (directives, regulations) on health hazardous substances in footwear production. Handling of hazardous chemicals and products in the workplace</li> <li>9. Process risks in the footwear industry: cutting machines, bottom parts warehouse, closing and preparation, lasting, scouring, soles and heels attaching (bonding), moulding, finishing, cleaning</li> </ol>	<p><b>I. Teaching in class/online:</b></p> <ol style="list-style-type: none"> <li>1. Lectures: 30 hours</li> <li>2. Practical sessions: Activities for seminar / exercises- 20 hours</li> </ol> <p><b>II. Self Study: 48 hours</b></p> <p><b>III. Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Evaluation of the Practical sessions / exercises reports - 50%</li> <li>2. Assessment test/Test quiz (2 hours) - 50%</li> </ol> <p><b>Total : 100 hours</b></p>	5 ECTEV points	<ol style="list-style-type: none"> <li>1. Quiz test</li> <li>2. Practical sessions reports / exercises</li> </ol>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>REACH and consumer safety-Product legislation for footwear industry</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Definition of a safe products. <ol style="list-style-type: none"> <li>2.1. General Product Safety Directive (GPSD)</li> </ol> </li> <li>3. General procedures of the REACH regulation: Registration, Evaluation, Authorization and Restriction of Chemicals</li> <li>4. Important definitions to understand the implementation of the REACH regulation in the footwear sector</li> <li>5. Critical substances regulated by the REACH potentially present in footwear <ol style="list-style-type: none"> <li>5.1. Substances of Very High Concern (SVHC)</li> <li>5.2. Substances subject to Authorisation (annex XIV of REACH)</li> <li>5.3. Substances subject to Restriction (annex XVII de REACH)</li> </ol> </li> <li>6. REACH's effect on companies <ol style="list-style-type: none"> <li>6.1. Role and obligations of company in the supply chain.</li> <li>6.2. Communication in the supply chain for the footwear sector</li> <li>6.3. Letters for communication in the supply chain for the footwear sector</li> </ol> </li> <li>7. REACH for non-EU companies</li> <li>8. Enforcement. Inspection bodies</li> <li>9. Practical exercises <ol style="list-style-type: none"> <li>9.1. Calculation of the substance volume released in footwear</li> <li>9.2. Calculation of SVHC in footwear including different components</li> <li>9.3. Calculation of SVHC imported in different articles</li> </ol> </li> <li>10. Relevant guidance documents, manuals and legislation</li> </ol>	<p><b>I. Teaching in class/online:</b></p> <ol style="list-style-type: none"> <li>1. Lectures: 35 hours</li> </ol> <p>2. Practical sessions: Project work - 15 hours</p> <p><b>II. Self Study and Individual work for project: 48 hours</b></p> <p><b>III. Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Assessment test / Test quiz (2 hours)</li> </ol> <p><b>Total : 100 hours</b></p>	5 ECTEV points	<ol style="list-style-type: none"> <li>1. Quiz test</li> <li>2. Project work</li> </ol>
<b>Contractual, Social and Trade Legislation</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. National, European and international markets. Sustainable Business</li> <li>3. Global sourcing, industry relocation and its impact on environment <ol style="list-style-type: none"> <li>3.1. Globalization and Global sourcing</li> <li>3.2. International markets</li> <li>3.3. Sustainability – sustainable business. Cost-benefit analysis</li> <li>3.4. Accounting, auditing and reporting</li> <li>3.5. Common actions. Risk management</li> </ol> </li> <li>4. Export regulations, licensing and certifications in the footwear sector <ol style="list-style-type: none"> <li>4.1. ECO label</li> <li>4.2. Leather footwear exports Growing in India</li> <li>4.3. Integrated System for Managing Licences (SIGL)</li> <li>4.4. Certifications: Management of production quality control certification. Benefits of certification</li> </ol> </li> <li>5. Tariffs and duties in the footwear industry <ol style="list-style-type: none"> <li>5.1. Import Tariffs in European Union</li> <li>5.2. Germany Import Turnover Tax</li> <li>5.3. Import Tariffs in U.S. Korea</li> <li>5.4. Federal regulatory U.S. authorities and technical regulations</li> </ol> </li> <li>6. Import regulations in the footwear sector <ol style="list-style-type: none"> <li>6.1. Import into the EU: EU action when imports are not fair. Facts about EU imports</li> <li>6.2. Low cost footwear</li> </ol> </li> <li>7. Legislation, authorities and the regulatory issues that influence footwear international trade <ol style="list-style-type: none"> <li>7.1. Trade Barriers</li> <li>7.2. Import Requirements and Documentation</li> <li>7.3. U.S. Export Controls</li> <li>7.4. Temporary Entry</li> <li>7.5. Labelling and Marking Requirements. Product origin marking, Made in EU</li> <li>7.6. Prohibited and Restricted Imports</li> <li>7.7. Customs Regulations and Contact Information</li> <li>7.8. Standards</li> </ol> </li> <li>8. Case study in the Czech republic-Impacts of the international / European directives and regulations on the footwear market</li> </ol>	<p><b>I. Teaching in class/online:</b></p> <ol style="list-style-type: none"> <li>1. Lectures: 30 hours</li> </ol> <p>2. Practical sessions: Case Study work: 20 hours</p> <p><b>II. Self Study: 48 hours</b></p> <p><b>III. Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Evaluation of the Case Study work/report - 70%</li> <li>2. Assessment test / Test quiz (2 hours) - 30%</li> </ol> <p><b>Total : 100 hours</b></p>	5 ECTEV points	<ol style="list-style-type: none"> <li>1. Quiz test</li> <li>2. Case study work</li> </ol>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECTEV sub-points	Assessment of Learning
<b>Sustainable Packaging for Footwear</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Definition and purpose of packaging</li> <li>3. Packaging classification               <ol style="list-style-type: none"> <li>3.1. Packaging material</li> <li>3.2. Purpose of packaging use and packaging layer</li> <li>3.3. Durability of packaging</li> <li>3.4. Field of use</li> <li>3.5. Contact with the product</li> <li>3.6. Other packaging categorizations</li> </ol> </li> <li>4. Packaging materials               <ol style="list-style-type: none"> <li>4.1. Wood</li> <li>4.2. Metal</li> <li>4.3. Glass</li> <li>4.4. Plastic</li> <li>4.5. Paper and cardboard: Materials in production of paper and production process of paper. Paper types</li> </ol> </li> <li>5. Packaging made from corrugated paper               <ol style="list-style-type: none"> <li>5.1. Structure of corrugated board</li> <li>5.2. Flute structures</li> <li>5.3. Designing and printing corrugated box</li> </ol> </li> <li>6. Key problems of packaging in connection with sustainability               <ol style="list-style-type: none"> <li>6.1. Waste packaging</li> <li>6.2. Rational use of primary source material for packaging</li> </ol> </li> <li>7. The corporate and business decisions for development and use of sustainable packaging</li> <li>8. Analysis of environmental life cycle of packaging               <ol style="list-style-type: none"> <li>8.1. Environmental life cycle assessment (E-LCA)</li> <li>8.2. Carbon footprint</li> </ol> </li> <li>9. Environmental design of packaging – packaging eco-design</li> <li>10. Design for a minimal amount of packaging (dematerialisation)</li> <li>11. Design for recycling               <ol style="list-style-type: none"> <li>11.1. Environmental legislation for packaging</li> <li>11.2. Labels for recycled materials</li> </ol> </li> <li>12. Designing reusable (returnable) packaging</li> <li>13. Design for composting</li> <li>14. Avoiding harmful substances in packaging</li> </ol>	<p><b>I. Teaching in class/online:</b> 1. Lectures: 25 hours</p> <p><b>II. Self Study: 23 hours</b></p> <p><b>III. Assessment test / Test quiz (2 hours) - 100%</b></p> <p><b>Total: 50 hours</b></p>	4 ECTEV points	1. Quiz test
<b>Supply Chain and Logistics Management in Footwear Companies</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Supply chain               <ol style="list-style-type: none"> <li>2.1. Definitions of supply chain and supply chain management</li> <li>2.2. The evolving structure of supply chain</li> <li>2.3. Participants in the supply chain</li> <li>2.4. Aligning the supply chain with business strategy</li> </ol> </li> <li>3. Logistics               <ol style="list-style-type: none"> <li>3.1. Development of the logistics</li> <li>3.2. The main objective of the logistics</li> <li>3.3. Elements of logistics</li> <li>3.4. Logistics subsystems in a company</li> <li>3.5. Impact of the logistics on the price of the final product</li> </ol> </li> <li>4. Transport               <ol style="list-style-type: none"> <li>4.1. External transport</li> <li>4.2. Internal transport</li> <li>4.3. Warehouses</li> <li>4.4. Supplies of the material</li> <li>4.5. Tracking of goods and shipments</li> <li>4.6. EAN Standard</li> </ol> </li> <li>5. Developing sustainable supply chain strategy               <ol style="list-style-type: none"> <li>5.1. Ingredients of a sustainable supply chain strategy</li> <li>5.2. An iterative approach to developing your sustainable supply chain strategy</li> </ol> </li> </ol>	<p><b>I. Teaching in class/online:</b> 1. Lectures: 20 hours</p> <p>2. Practical sessions: Activities for Seminar / Exercises - 20 hours</p> <p><b>II. Self Study: 33 hours</b></p> <p><b>III. Assessment:</b> 1. Evaluation of the Practical sessions / exercises reports - 50%</p> <p>2. Assessment test/Test quiz (2 hours) - 50%</p> <p><b>Total : 75 hours</b></p>	5 ECTEV points	1. Quiz test  2. Practical sessions reports / exercises

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>Supply Chain and Logistics Management in Footwear Companies</b>	6. Monitoring performance 6.1. Benefits and use of performance management 6.2. Problems with measuring performance 6.3. Supply chain performance measurement: Methods and approaches 7. Megatrends in the global environment – (managing the unexpected) 7.1. Globalization 7.2. Individualisation of the company – mass customization 7.3. Sustainability and environmental issues 7.4. Infrastructure and information technology 7.5. Terrorism and crime 7.6. Future development of megatrends			
<b>Green Marketing</b>	1. Introduction 2. Green marketing paradigm, concepts and principles 2.1. Meaning and definition 2.2. Evolution of green marketing 2.3. What are green companies? 2.4. Reasons to be green 2.5. Benefits of green marketing 2.6. Key of successful green marketing 2.7. Green products and their characteristics 3. Green consumer segments 3.1. Demands for green products and services 3.2. Consumer behaviour and motivations. Trends and lifestyles 3.3. Think broadly about the consumers 3.4. Innovative approach 3.5. Integrate the brands 3.6. Customer satisfaction 4. Strategies for green marketing and new business models 4.1. Business to Business (B2B) green marketing 4.2. Business to Consumer (B2C) and e-commerce 4.3. Incorporating sustainable marketing strategies in footwear companies 4.4. Challenges of green marketing 4.5. Why green product brands fail? 4.6. Ethical green claims and “green-washing” attacks. 5. Green marketing mix - Reformulating the marketing mix as a tool for green marketing 5.1. Green product 5.2. Green price 5.3. Green place 5.4. Green promotion 6. Communicating sustainability and promoting green products 6.1. Advertising 6.2. Public relations 6.3. Personal selling, 6.4. Consumer promotions 6.5. Social media 6.6. Event marketing 6.7. Digital marketing 6.8. Mobile marketing 6.9. Grassroots promotion and marketing 7. How to elaborate a Green Marketing Plan ? – project work	<b>I. Teaching in class/online:</b> 1. Lectures: 20 hours  2. Practical sessions: Project work: 10 hours  <b>II. Self Study and Individual work for project: 28 hours</b>  <b>III. Assessment:</b> 1. Evaluation of the Project work / report - 70%  2. Assessment test / Test quiz (2 hours) - 30%  <b>Total : 60 hours</b>	4 ECTEV points	1. Quiz test  2. Project work

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

Title of the Training Unit	Structure of the Unit (Sub-units)	Learning activities within the Unit / Total learning hours	ECVET sub-points	Assessment of Learning
<b>Social Corporate Responsibility Practices</b>	<ol style="list-style-type: none"> <li>1. What is corporate social responsibility ?               <ol style="list-style-type: none"> <li>1.1. Definition and scope</li> <li>1.2. Consumer's perspectives on CSR</li> <li>1.3. Legal background of CSR</li> </ol> </li> <li>2. Social responsibility for environmental sustainability               <ol style="list-style-type: none"> <li>2.1. Concept of environmental sustainability. Waste management. Water resources. Energy efficiency. Recycling and reusing</li> <li>2.2. EU and sustainable development</li> </ol> </li> <li>3. Social responsibility and community involvement               <ol style="list-style-type: none"> <li>3.1. Charities and volunteering actions</li> <li>3.2. Sponsorships</li> <li>3.3. Supporting local economic growth and employing local workers</li> <li>3.4. Fair trade practices</li> </ol> </li> <li>4. Actions for ethical marketing. Fair advertising campaigns               <ol style="list-style-type: none"> <li>4.1. Business ethics and socially responsible marketing. Ethical marketing. Social responsibility and marketing</li> <li>4.2. Developing and implementing a socially responsible marketing plan</li> <li>4.3. Main aspects of socially responsible marketing</li> <li>4.4. Characteristics of socially responsible marketing</li> </ol> </li> <li>5. Advantages and benefits of CSR</li> <li>6. How to elaborate a CSR plan?</li> <li>7. Study cases – footwear companies that have implemented CSR plan</li> </ol>	<p><b>I. Teaching in class/online:</b></p> <ol style="list-style-type: none"> <li>1. Lectures: 10 hours</li> <li>2. Practical sessions: Study cases - 10 hours</li> </ol> <p><b>II. Self Study and individual work for project: 18 hours</b></p> <p><b>III. Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Evaluation of the practical sessions/study case - 50%</li> <li>2. Assessment test / Test quiz (2 hours) - 50%</li> </ol> <p><b>Total: 40 hours</b></p>	3 ECTEV points	<ol style="list-style-type: none"> <li>1. Quiz test</li> <li>2. Study case Report</li> </ol>

### 4. Evaluation and validation of the training program

The evaluation and validation of the training program has been made by STEP 2 SUSTAINABILITY partners through a continuous process based on following criteria:

- The use of occupational activities /work processes/tasks which are typical for a particular profession. The occupational profiles as basis for the design/composition of units have certain advantages.
- Together all of the units cover the entire qualification. Because full qualifications for two EQF levels are aimed in the STEP2 SUSTAINABILITY project, the training programme gives a detailed description for all units.
- Units of learning outcomes should be completed independently from other units of learning outcomes. The overlaps of contents among units should be avoided;
- The description of learning outcomes should reflect the following elements: knowledge, skills and competence.

The description of each unit includes the following information:

- title of the unit and its objectives;
- EQF level of the qualification;
- ECVET points associated with the unit;
- learning outcomes contained in the unit: knowledge, skills and competences;
- components of a training programme / curriculum (modules / units / subunits);
- procedures and criteria for assessment of the learning outcomes.

The methodology used for identifying units of learning outcomes is linked with the specific purpose of the training programme. Based on the needs for systemic approaches for structuring the new qualifications for levels 4 and 5 in units of learning outcomes, the ECVET points have been allocated according with both the time to complete each unit and the relevance of the learning outcomes in the overall framework of the training program. Through an iterative process of evaluation, the partners validated the number of total hours allocated to the training programme for level 5, which is covering all learning activities for formal education in one year; those are dedicated 60 ECVET points. Each unit is independent of other units, so that it may be a course in itself for further customized training to be provided to footwear companies on their request. The units A, B, C, D and E are proposed for a full training programme of level 4 EQF, which corresponds to 30 ECVET points, with a total of 600 hours.

UNIT	LEVEL 5 EQF		LEVEL 4 EQF	
	HOURS	ECVET POINTS	HOURS	ECVET POINTS
<b>A</b> Standardization and Certification Systems	115	5	115	5
<b>B</b> Sustainable Materials and Components for Footwear	125	6	125	6
<b>C</b> Eco Design and Product Engineering	150	7	150	7
<b>D</b> Sustainable Manufacturing Technologies and Processes	175	8	175	8
<b>E</b> Environment Regulations and Standards	75	4	75	4
<b>F</b> Health and Safety at Work (HSW) in Footwear Industry	100	5	-	-
<b>G</b> REACH and consumer safety-Product legislation for footwear industry	100	5	-	-
<b>H</b> Contractual, Social and Trade Legislation	100	5	-	-
<b>I</b> Sustainable Packaging for Footwear	50	4	-	-
<b>J</b> Supply Chain and Logistics Management in Footwear Companies	75	4	-	-
<b>K</b> Green Marketing	60	4	-	-
<b>L</b> Social Corporate Responsibility Practices	40	3	-	-
<b>TOTAL</b>	<b>1175</b>	<b>60</b>	<b>640</b>	<b>30</b>

## TRAINING PROGRAM ON SUSTAINABLE MANUFACTURING IN FOOTWEAR

The number of hours for a full training programme of one year has been established according with national regulation on duration of the formal VET in Germany, Italy and Spain.

In Germany there are dual vocational training programs of 2 years for level 3 EQF and programs of 3 or 3,5 years for 4 EQF. The qualification of footwear technician corresponds to level 6 EQF. The German VET system is based on a dual approach, therefore for the level 4 EQF, for example, the students/learners have to spend 1000 hours in school and additional 2400 hour in companies, totally 3400 hours for a full 3 years program.

In Italy it is possible to start “professional training” right after the first cycle of the secondary school, at the age of 13 years old (so called “scuole medie”). There are various options:

- 3 years at Istituti Professionali / EQF 3 (National Level – MIUR Ministero Istruzione e Ricerca)
- 3 years at IeFP / EQF 3 (regulated by the local authority Regional level)
- 4 years at IeFP / EQF 4 (regulated by the local authority Regional level)
- 5 years at Istituti Tecnici / EQF 4 (National Level – MIUR Ministero Istruzione e Ricerca)
- 5 years at Istituti Professionali / EQF 4 (National Level – MIUR Ministero Istruzione e Ricerca)

Also in Italy there is then another level of professional training:

- for those that completed the 5 years of secondary school it is possible to apply to I.T.S (Istituto Tecnico Superiore) that is a 2 years course / EQF 5 (regulated by the local authority Regional level)
- for those that completed the 5 years of secondary school or that have gone through a competence accreditation process (until the age of 35 years), it is possible to attend I.F.T.S. (Istruzione e Formazione Tecnica Superiore) that is a 1 year course / EQF 4 (regulated by the local authority Regional level)

In addition, there are plenty of courses financed with the support of FSE (Fondo Sociale Europeo) or with specific funds (at different levels: region, province, city, etc) that aim to train different categories of people such as “relocation and qualification” of people that lost their jobs, but also NEETs etc.

In Spain, there are two types of VET courses:

**1.** Courses that depend on “Ministerio de Educación” (Ministry of Education). For accessing to these courses the student goes through the traditional education system (secondary education, maybe through Baccaureate, university courses, etc.)

- Intermediate Level Vocational Training Program for EQF 3 and 4. A program of 2 years has 2000 hours and a program of one year 1000 hours, having 60 ECVET credits per year.

- Advanced vocational education for level 5 EQF. This program is for 2 years with 2000 hours. 60 ECVET credits correspond to 1000 hours.

**2.** Courses that depend on “Ministerio de Trabajo” (Ministry of Labour) provided with Professional certificates. Duration of these courses is less than one year (300-700 hours), and the certified EQF level are from 1 to 5. These courses are designed for re-skilling unemployed persons.

Based on their previous experience in creating training contents and expertise in different areas of knowledge, the development of each unit has been agreed between the partners as follows:

DEVELOPER PARTNER	UNIT
INESCOP	Standardization and Certification Systems
CTCP	Sustainable Materials and Components for Footwear
ARS	Eco Design and Product Engineering
ISC	Sustainable Manufacturing Technologies and Processes
CTCP	Environment Regulations and Standards
COKA	Health and Safety at Work (HSW) in Footwear Industry
INESCOP	REACH and consumer safety-Product legislation for footwear industry
COKA	Contractual, Social and Trade Legislation
IRCUO	Sustainable Packaging for Footwear
IRCUO	Supply Chain and Logistics Management in Footwear Companies
TUIASI	Green Marketing
TUIASI	Social Corporate Responsibility Practices

The partners CEC and KLAIVENESS followed up the process of content development. They analysed and validated the results, adding their experience and view from the perspective of the footwear companies.

### References

<sup>1</sup> RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the establishment of a European Credit System for Vocational Education and Training (ECVET), 2009.

<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:155:0011:0018:EN:PDF>

<sup>2</sup> <http://www.ecvet-projects.eu/>

<sup>3</sup> <http://www.cedefop.europa.eu/>

<sup>4</sup> <http://www.ecvet-toolkit.eu/site/introduction/whyuseecvet>



Lifelong  
Learning  
Programme

Project Number:  
539823-LLP-1-PT-LEONARDO-LMP

Project Duration:  
30 months  
October 2013 - March 2016

## ***How to implement Sustainable Manufacturing in Footwear - New Occupational Profile and Training Opportunities -***

The project ***STEP to SUSTAINABILITY*** aims at:

Developing a new qualification profile  
and correspondent training in the field  
of sustainable manufacturing.

Training technicians with knowledge and  
skills to implement manufacturing  
strategies envisaging the sustainability in  
Footwear and Leather goods.

*[www.step2sustainability.eu](http://www.step2sustainability.eu)*