Developing Innovative and Attractive CVET programmes in industrial shoe production

Curriculum

Romania

IO 4

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Content

1 Environmental Management

1.1 Objectives:

- Carry out advanced training in the field of environmental management
- Acquire theoretical and applied skills in designing an environmental management system and specific environmental management procedures
- Acquire competencies in applications of environmental management systems, ISO 14001, integrated environmental management systems, integrated quality-environment systems and environmental performance.

Duration: 14 weeks

Theoretical teaching/learning classes: 56 hours (28 lectures + 28 project work)

Self-learning: 69

Credits: 5

Total number of hours: 125 (25 / credit)

Work Basel-Learning: double the theoretical and self-learning hours?

Level 6 - minimum 150 hours

1.2 Lecturers:

Topic	Content	Duration	Mode
International and European Environmental Management Framework.	• Environmental Management Standard • Environmental Management Systems • European Eco-Management and Audit Scheme (EMAS) • International standard ISO 14001	4 hours	
ISO 14000 series	• Comparison between EMAS and ISO 14001 International Standard • Environmental Management System (EMS)	4 hours	
Development of an Environmental Management System (EMS)	• ISO14001 series standards • Advantages and disadvantages of implementing environmental management systems • Tools of environmental management systems (environmental audit, environmental performance assessment, life cycle assessment, eco-labelling)	6 hours	

Topic	Content	Duration	Mode
Developing and implementing an Environmental Management System (EMS)	• Staged implementation of environmental management systems in accordance with ISO 14001 (environmental policy of the organization, planning, implementation and operation of EMS, environmental reporting).	6 hours	
Environmental performance	• Environmental performance indicators system • Monitoring environmental performance indicators • Integrated environmental dashboard	4 hours	
Sisteme de management integrat. Conceptul integrat calitate-mediu. Standardele ISO de calitate-mediu, etc. (seria de standarde ISO 9000 si ISO 14001) Integrated management systems	• The integrated quality-environment concept. • ISO quality-environment standards (ISO 9000 and ISO 14001 series)	4 hours	
	Total	**28**	

1.3 Project work:

Environmental Management [MM] (conceptual approaches, reasons / causes / importance / objectives associated with MM, environmental factors, polluting factors of a company - generalities, analysis of the project theme, etc.)	6 hours
The environmental management system of a company (design, implementation, etc.)	18 hours
Integrated environmental management system procedures	4 hours
Total	**28**

2 Sustainability Management

2.1 Objectives:

- Develop knowledge, skills and competencies regarding sustainability in footwear industry
- Acquire knowledge on standardization and certification systems in the footwear industry
- Acquire knowledge regarding REACH and safety of products legislations and contractual, social and commercial legislation
- Gain knowledge on sustainable materials and components for footwear and technologies and processes for sustainable footwear manufacturing.
- Gain theoretical and practical on footwear Carbon footprint

Duration: 14 weeks

Theory: 56 hours (28 lectures + 28 project work)

Self-learning: 69

Credits: 5

Total number of hours: 125 (25 / credit)

2.2 Lecturers:

Topic	Content	Duration	Mode
Sustainable Materials and Components for Footwear	• Criteria to be taken into account in the manufacture of sustainable footwear • Types of materials for the upper assembly • Types of materials for the lower assembly • Components and accessories • Examples of sustainable materials	4 hours	
Eco-labeling and eco-certification of footwear materials and products	• Ecological criteria and parameters • Environmental impact and life cycle analysis • Certification systems	4 hours	
REACH regulation and consumer product safety	• Legislative norms • Regulations regarding consumer health and safety • REACH regulation	4 hours	
Sustainable technologies and manufacturing processes	• Cutting • Pre-stitching • Stitching • Pre-lasting • Lasting	6 hours	

Topic	Content	Duration	Mode
	• Finishing		
Managing methods supporting a sustainable approach	• 5S – a system focused on the creation of individual working places • Total Quality maintenance (TQM) • Total productive maintenance (TPM) • Visual control • Continuous flow	4 hours	
Carbon footprint – a sustainability measurement indicator	• Value chain analysis • Sustainable solutions for reducing environmental impact • The concept of Life Cycle Assessment • Techniques to calculate the carbon footprint	6 hours	
	Total	**28**	

2.3 Project work:

Sustainability evaluation for footwear product 1. Identify the polluting factors for a footwear product 2. Identify the value chain links for the studied product 3. Improving the impact of a footwear product by implementing different sustainable solutions 4. Life cycle impact assessment 5. Selection of impact categories for footwear 6. Carbon footprint calculation	28 hours
Total	**28**

3 Corporate social responsibility (CSR)

3.1 Objectives:

- Acquire knowledge on CSR concepts, consumer perspective, regulations and benefits
- Develop and implement a CSR plan.

Duration: 14 weeks

Theory: 56 hours (28 lectures + 28 project work)

Self-learning: 69

Credits: 5

Total number of hours: 125 (25 / credit)

3.2 Lecturers:

Topic	Content	Duration	Mode
Corporate social responsibility (CSR)	• Conceptual approaches regarding CSR • Consumer perspective on CSR • Regulations associated with CSR	6 hours	
CSR benefits	• CSR Aspects • CSR benefits • Competitive advantage and financial performance	6 hours	
Social responsibility and community involvement	• Charities and volunteering actions • Sponsorships • Supporting local economic growth • Fair trade practices	4 hours	
Implementation of CSR	• CSR framework • Approaches associated with CSR implementation and development	8 hours	
Study cases	• Examples of Footwear companies that have implemented CSR	4 hours	
	Total	**28**	

3.3 Project work:

Development of an integrated CSR strategic plan • Raising CSR awareness • Assessing the corporate purpose of the organization in the current • social context • Establish CSR mission and vision • CSR evaluation • Development of an integrated CSR strategic plan • Implementation of the integrated CSR strategic plan • Maintaining internal and external communication • Evaluation of integrated strategies and the communication process • associated with CSR • Real integration (institutionalization) of CSR	28 hours
Total	**28**

4 Design

4.1 Objectives:

- Acquire knowledge regarding design and product development and identifying the particularities of design in the footwear industry
- Presentation and experimentation of modern concepts in the design of footwear products
- Acquire skills to develop innovative concepts footwear

Duration: 14 weeks

Theory: 56 hours (28 lectures + 28 project work)

Self-learning: 69

Credits: 5

Total number of hours: 125 (25 / credit)

4.2 Lecturers:

Topic	Content	Duration	Mode
Footwear Design tools, methods and practices	• Product development • Product design and value analysis • Design optimization	4	
Consumer-Orientated Footwear Design	• Trends - Sustainability, Comfort, Multifunctional and Smart, Personalization • Customer needs and requirements • QFD – Quality Function Deployment	8	
Modular design	• Concepts and instruments • Methodology • DSM - Design Structure Matrix • DFM - Design for manufacturing • MFD - Modular Function Deployment • AD - Axiomatic Design	8	
Digital Design	• Virtual prototyping • Digital Materials and Rendering • Rapid prototyping • Virtual Reality and Augmented Reality • Virtual testing	8	
	Total	**28**	

4.3 Project work:

Development of an innovative footwear concept • Define design concepts and prepare presentation panels • Translate the design concept into a 3D model • Define model components and technical details • Develop a model collection • Evaluate and analyse the footwear concept.	28 hours
Total	**28**

5 Technical Development

5.1 Objectives:

- Learning the principles of computer-aided footwear design in order to ensure ergonomic, functional, hygienic, aesthetic and economic characteristics for the designed products.

Duration: 14 weeks

Theory: 56 hours (28 lectures + 28 project work)

Self-learning: 69

Credits: 5

Total number of hours: 125 (25 / credit)

5.2 Lecturers:

Topic	Content	Duration	Mode
Shoe lasts	• Last measurements and grading • Development of digital lasts	4	
Footwear uppers development (3D modelling)	• Last digitalization • Development of upper pieces • Development of accessories • Materials and textures	10	
Footwear uppers development (2D modelling)	• Last flattening • 2D patterns • Grading • Nesting	8	
Footwear bottom components development	• Bottom components for footwear • Moulds for bottom components • 3D CAD of soles • 3D CAD of heels • Bottom components grading	6	
	Total	**28**	

5.3 Project work:

Technical Development of a footwear model • Digital last • Upper pieces • Bottom components • Textures and colours	28 hours
Total	**28**