



## **INGA 3D - Creative transfer of competence in 3D footwear CAD to VET professionals**

**LLP-LdV-ToI/2013-RO-024**

# **MODULE IV : 3D CAD- APPLICATIONS TO FASHIONABLE FOOTWEAR**

Training Program

**Prepared by IED**

**MODULE IV : 3D CAD- APPLICATIONS TO FASHIONABLE FOOTWEAR**

**Total Teaching Hours – Lectures and Activities in class: 25 hours**

**Individual Study: 25 hours**

**ECVET : 2**

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| <b>Objectives</b> | <ul style="list-style-type: none"> <li>• To acquire a comprehensive knowledge of all aspects surrounding the launch of footwear collections from ideation to production</li> <li>• To apply 3D CAD technology powered by Icad 3D+ software for fashionable footwear through collection development</li> <li>• To practice the 3D modelling process to a range of different styles, characteristics and features which are compatible with design specifications of the fashionable footwear</li> <li>• To develop skills and competences to design footwear collections mainly focused on operating with various materials, footwear components, trimmings and ornamentations</li> </ul> |
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**UNIT 1. Structure of Footwear Collections (8 Hrs: 1Hrs Intro+ 1Hrs Theory+ 6 hrs activities in class/exercises)**

| <b>Knowledge</b>  | <b>Skills</b>   | <b>Competences</b>   |
|---|---|--|
| <ul style="list-style-type: none"> <li>• Understand the 3D designing process applied to fashionable footwear</li> <li>• Know how to produce 3D CAD models for women’s and men’s footwear</li> <li>• Meet the technical process required to create and develop a collection</li> </ul> | <ul style="list-style-type: none"> <li>• To be able to identify the different types of shoes and the possibilities to create a good collection</li> <li>• To be able to identify the resources needed to develop a footwear collection in line with commercial basis through technical 3D CAD tools</li> <li>• To be able to produce 3D CAD fashionable footwear for women’s and men’s</li> </ul> | <ul style="list-style-type: none"> <li>• To produce detailed 3D virtual prototypes and renderings useful for business and production</li> <li>• To acquire the right knowledge of all aspects surrounding the launch of a footwear collection</li> <li>• To demonstrate the ability to analyze, evaluate and verify productive viability of a footwear collection</li> </ul> |

This module has 3 units with the following structure:

- **Theory + Trends**

Will be explained the tendency contents of each unit and the theoretical aspects of it.

- **Activities in class/Software exercises**

Exercises will be perform related to the theory developed in the first part of each unit using a previously defined collection, this allows to have a general overview about the basics models that a Shoe Design collection has to have. Student will develop these models along the same style but adding also his own creativity during the creation of the 3D models.

Lesson 1.1. **BASIC FOOTWEAR COLLECTION – CASE STUDY (1 hour)**

The introduction module is based on a case study reflecting all points of each unit. In this way, students have a general overview in order to know what they are going to learn and begin to think in a future possible personal collection.

A Basic Collection is previously chosen by the trainers, this collection is compose of: Pumps, Wedge and Wingtips

Lesson 1.2. **STRUCTURE OF FOOTWEAR COLLECTION (1 hour)**

- Basic models
- Analysis of collections
- What features should have a collection to be successful: correct interpretation of trends, successful market and viability study in all level productions, Customer Prospective study.
- Versatile vision of design, learn skills to build a collection under the same concept and using the same language

**Activities in class/exercises (6 hours).** Exercises will be perform related to the theory developed in the first part using a previously defined collection, this allows to have a general overview about the basics models that a Shoe Design collection has to have. Student will develop these models along the same style but adding also his own creativity during the creation of the 3D models.

**Activity 1.1.** (2 hours): Design a Collection through Icad 3D+ for Pumps

**Activity 1.2.** (2 hours): Design a Collection through Icad 3D+ for Wedge

**Activity 1.3.** (2 hours): Design a Collection through Icad 3D+ for Wingtips (men’s footwear)

**UNIT 2 Heels and Outsoles (7 Hrs: 2Hrs Theory+ 5 Hrs activities in class/exercises)**

| <b>Knowledge</b>  | <b>Skills</b>   | <b>Competences</b>   |
|---|---|--|
| <ul style="list-style-type: none"> <li>• Learn to conceptualize a design collection taking particular attention to the components of the shoe</li> <li>• Understand the 3D designing process applied to the basic construction types</li> </ul> | <ul style="list-style-type: none"> <li>• To be able to develop different kinds of outsoles</li> <li>• To be able to customize a heel according with trends that dictate the fashion scene</li> <li>• To translate the design</li> </ul> | <ul style="list-style-type: none"> <li>• To conceptualize and to design collections taking particular attention to soles and heels</li> <li>• To demonstrate an ability to produce detailed prototypes and renderings</li> </ul> |

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| of components  | specifications into technical 3D computer-aided designs of soles and heels   | useful for business and production  |
| <p><b>Lesson 2. 1. FOOTWEAR COMPONENTS-OUTSOLES, 1 hour</b></p> <ul style="list-style-type: none"> <li>• Outsoles: materials (leather, rubber, wood .)</li> <li>• Outsoles types by shape and construction (Cuban, back sole, wedge sole, block..)</li> </ul> <p><b>Lesson 2.2. FOOTWEAR COMPONENTS-HEELS and PLATFORMS, 1 hour</b></p> <ul style="list-style-type: none"> <li>• Heels: materials (abs, wood, board ...) form typologies (wedge heel, pumps, silingback, kniotter heels, prism heels, spool heels, cone heels, stiletto ...)</li> <li>• Platforms and blocks: materials (cork, rubber, wood, resins ...), types (full, ½ floor, composite ...) and finishes (coated, lined ...)</li> </ul> <p><b>Activities in class/exercises (5 hours):</b> Understanding the tools: heels, platforms, outsoles, testing the variations in the model, changing outsoles components and customizing the heel.</p> <p><b>Activity 2.1.</b> (3 hours): Design heels and outsoles through Icad 3D+ for Pumps/Wedge</p> <p><b>Activity 2.2.</b> (2 hours): Design heels and outsoles through Icad 3D+ for Wingtips (men’s footwear)</p> |  |   |
| <p><b>UNIT 3 Materials. Trimmings and Ornamentation (10 Hrs: 2Hrs Theory+ 8 hrs activities in class/exercises)</b></p>   |  |   |
| <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Know how to analyze, evaluate and verify productive viability of ornamentations, based on criteria of formal innovation and market demands.</li> <li>• Know different type of materials used in footwear and handle in production processes and developing designs.</li> <li>• Know how to produce 3D CAD ornamentation models for women’s and men’s footwear</li> <li>• Understand the 3D designing process applied to the fashionable footwear using digital materials with Icad 3d+</li> </ul>   | <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>•To be able to select among various types of ornamentations based on their usability and in line with the trends that dictate the fashion scene in ornamentation field.</li> <li>•To be able to identify and to define footwear materials, to find environmentally sustainable solutions, and to optimize the use of resources</li> <li>•To be able to translate the design requirements into technical 3D computer-aided designs using materials/ornaments that resemble the characteristics of the real material/ornament in appearance</li> </ul> | <p><b>Competences</b></p> <ul style="list-style-type: none"> <li>•To produce detailed accessories in order to improve the quality of the whole shoe.</li> <li>• To develop footwear collections under established parameters and within the same commercial line taking particular attention to the use of materials, trimmings and ornaments</li> <li>•To produce detailed prototypes and renderings useful for business and production by operating with various materials and ornaments</li> </ul> |

**Lesson 3.1 TRIMMINGS AND ORNAMENTATION. Theory and Trends , 1 hour**

- Types of trimmings: flower, fittings, ornaments of various materials (wood, resin, metal ...), applications of strass, thumbtack, tassels etc.
- Possibilities of ornamentation: embroidery, bunch, beads, embossed stitching.

**Lesson 3.2. MATERIALS . Theory and Trends , 1 hour**

- External materials: Types and special finishes (leather, textile, synthetic, PVC, patent leather, transfer, laser, screenprints )
- Interior materials: Linings and Customization of personal brand
- Interaction of different materials in the same shoe: Textures and colours.
- Colour Chart

**Activities in class/exercises (8 hours):** Understanding the following tools: ornamental seams, zippers, buckles, laces, threads, perforations giving students the opportunity to use some or all of the tools of the unit. Making exercises on the chosen model, giving students the opportunity to apply some or all of the unit's tools.

**Activity 3.1.** (4 hours): Trimmings and ornamentation through Icad 3D+ for Pumps/Wedge/ Wingtips.

**Activity 3.2** (4 hours): Materials through Icad 3D+for Pumps/Wedge/ Wingtips(men's footwear).