CREATIVE TRANSFER OF COMPETENCE IN 3D FOOTWEAR CAD TO VET PROFESSIONALS

TRAINING FOR VET TEACHERS, TRAINERS AND TUTORS IN THE FOOTWEAR SECTOR

Find out more at http://www.inga3d.eu/

Acknowledgment: This publication presents the Training Program of the INGA 3D project, titled “Creative Transfer of Competence in 3D Footwear CAD to VET Professionals” (contract LLP-LdV-ToI/2013-RO-024) which has been funded by ANPCDEFP Romania within the framework of the European LLP/LdV programme.

www.inga3d.eu
PROJECT OBJECTIVES

The INGA 3D project aims to transfer and extend innovative software solutions and 3D technologies for computer-aided footwear design. This will be achieved through four complementary activities:

- by transferring the innovation from Spain to other countries, namely Romania, Portugal, and UK;

- by developing skills and competencies in 3D footwear computer-aided design in VET professionals (teachers, trainers and tutors) so that they can teach ICT based technical courses that support creativity and innovation among their own VET students/trainees;

- by developing new training content and supportive e-learning tools based on units of learning outcomes and competencies. This will ensure effective assessment, evaluation and validation;

- by setting up an Online Learning Platform.
PROJECT OBJECTIVES

The INGA 3D project aims to transfer and extend innovative software solutions and 3D technologies for computer-aided footwear design. This will be achieved through four complementary activities:

- by transferring the innovation from Spain to other countries, namely Romania, Portugal, and UK;

- by developing skills and competencies in 3D footwear computer-aided design in VET professionals (teachers, trainers and tutors) so that they can teach ICT based technical courses that support creativity and innovation among their own VET students/trainees;

- by developing new training content and supportive e-learning tools based on units of learning outcomes and competencies. This will ensure effective assessment, evaluation and validation;

- by setting up an Online Learning Platform.
The designed structure of the INGA 3D training course is ensuring the balance of content.

**Module I**
Footwear CAD by Icad3d+ Software

**Module II**
3D CAD - Applications to Basic Footwear Constructions

**Module III**
3D CAD - Applications to Orthopaedic Footwear

**Module IV**
3D CAD - Applications to Fashionable Footwear

Modules I and II are focusing on practical exercises and activities with Icad3d+ software, whereas Modules III and IV have greater mix of theory and practical activities. Each module enables blended learning scenarios, where the face to face training sessions are combined with online lectures.

The online lectures include web-based and educational media tools like videos, assessment tasks and demonstrative resources with learning purposes that emphasize and enrich the lessons' content. The trainees have to study the theoretical content of the lesson and then to perform practical activities and exercises by using the Icad3D+ software. Moreover, the online platform enables communication between trainers and trainees about any issue which may arise.
INGA 3D RESULTS

- Integrated Report on Peer Learning Scenarios in Footwear Computer Aided Design in partner countries
- INGA 3D training program based on learning outcomes and articulated to ECVET system
- 3D Footwear Computer Aided Design – Handbook designed in an effective educational approach to modules and units of learning outcomes.
- 3D Footwear Computer Aided Design - Multimedia supportive guide for VET teachers, trainers and tutors
- INGA 3D Online Learning Platform
- Piloting training sessions based on blended learning in Spain, Romania and UK
- Icad 3d+ software installed in the training facilities of the partners

TRAINING COURSE

The designed structure of the INGA 3D training course is ensuring the balance of content.

**Module I**
Footwear CAD by Icad3d+ Software

**Module II**
3D CAD – Applications to Basic Footwear Constructions

**Module III**
3D CAD - Applications to Orthopaedic Footwear.

**Module IV**
3D CAD- Applications to Fashionable Footwear.

Modules I and II are focusing on practical exercises and activities with Icad3d+ software, whereas Modules III and IV have greater mix of theory and practical activities. Each module enables blended learning scenarios, where the face to face training sessions are combined with online lectures.

The online lectures include web-based and educational media tools like videos, assessment tasks and demonstrative resources with learning purposes that emphasize and enrich the lessons’ content. The trainees have to study the theoretical content of the lesson and then to perform practical activities and exercises by using the Icad3D+ software. Moreover, the online platform enables communication between trainers and trainees about any issue which may arise.
Module I

FOOTWEAR CAD BY ICAD3D+ SOFTWARE

This module provides a basic understanding of utilizing the Icad3D+ software. Hands-on exercises throughout the units demonstrate techniques that can be applied to the Footwear Design. The primary objective of this module is to provide students with a thorough understanding of all the steps in 3D designing processes as well as skills and competencies necessary for creating accurate virtual prototypes by using the Icad3D+ software. After completing this course, students will know how to:

- operate with various features of Icad3D+ specific software;
- create footwear prototypes on virtual lasts, including accessories and components;
- obtain accurate virtual models using the rendering software and to prepare technical sheets.

PROGRAM

UNITS

Basics of Footwear CAD
Virtual Model
Presenting Virtual Models: Rendering and Producing Technical Sheets

Module II

3D CAD - APPLICATIONS TO BASIC FOOTWEAR CONSTRUCTIONS

This module introduces practical lessons which are based on the learning outcomes accumulated by students in Module I. Each lesson is designed as a tutorial which covers the 3D modelling steps and the necessary Icad3D+ tools for completing basic models for women's, men's and children's footwear by: processing the lasts, designing the 3D model lines, transferring and controlling 3D lines with 2D drawings, creating pieces, adding texture, stitches and accessories, modelling the 3D shape of sole and heel, rendering. The main objectives of this module are:

- to apply the 3D CAD technology powered by Icad3D+ software for designing basic footwear constructions types;
- to practice the 3D modelling process to a range of different footwear styles, characteristics and features which are compatible with design requirements and expectations;
- to develop skills and competences in producing detailed virtual models of women’s, men’s and children’s footwear.

PROGRAM

UNITS

3D CAD – Basic Constructions for Women’s Footwear
3D CAD – Basic Constructions for Men’s Footwear
3D CAD – Basic Constructions for Children’s Footwear
This module provides a basic understanding of utilizing the Icad3D+ software. Hands-on exercises throughout the units demonstrate techniques that can be applied to the Footwear Design. The primary objective of this module is to provide students with a thorough understanding of all the steps in 3D designing processes as well as skills and competencies necessary for creating accurate virtual prototypes by using the Icad3D+ software. After completing this course, students will know how to:

- operate with various features of Icad3D+ specific software;
- create footwear prototypes on virtual lasts, including accessories and components;
- obtain accurate virtual models using the rendering software and to prepare technical sheets.

Module I

**FOOTWEAR CAD BY ICAD3D+ SOFTWARE**

This module introduces practical lessons which are based on the learning outcomes accumulated by students in Module 1. Each lesson is designed as a tutorial which covers the 3D modelling steps and the necessary Icad3D+ tools for completing basic models for women's, men's and children's footwear by: processing the lasts, designing the 3D model lines, transferring and controlling 3D lines with 2D drawings, creating pieces, adding texture, stitches and accessories, modelling the 3D shape of sole and heel, rendering. The main objectives of this module are:

- to apply the 3D CAD technology powered by Icad3D+ software for designing basic footwear constructions types;
- to practice the 3D modelling process to a range of different footwear styles, characteristics and features which are compatible with design requirements and expectations;
- to develop skills and competences in producing detailed virtual models of women’s, men’s and children’s footwear.

Module II

**3D CAD - APPLICATIONS TO BASIC FOOTWEAR CONSTRUCTIONS**

This module introduces practical lessons which are based on the learning outcomes accumulated by students in Module 1. Each lesson is designed as a tutorial which covers the 3D modelling steps and the necessary Icad3D+ tools for completing basic models for women's, men's and children's footwear by: processing the lasts, designing the 3D model lines, transferring and controlling 3D lines with 2D drawings, creating pieces, adding texture, stitches and accessories, modelling the 3D shape of sole and heel, rendering. The main objectives of this module are:

- to apply the 3D CAD technology powered by Icad3D+ software for designing basic footwear constructions types;
- to practice the 3D modelling process to a range of different footwear styles, characteristics and features which are compatible with design requirements and expectations;
- to develop skills and competences in producing detailed virtual models of women’s, men’s and children’s footwear.
Module III

3D CAD - APPLICATIONS TO ORTHOPAEDIC FOOTWEAR

This module explores how to select lasts and to design footwear for specific foot pathologies. The main objectives of this module are:

- to apply knowledge of 3D CAD technology powered by Icad3D+ software in order to select orthopaedic lasts appropriate for the specific foot pathology;
- to practice the 3D modelling process to a range of different footwear styles, therapeutic features and modifications which are compatible with the specific foot pathology and users expectations;
- to develop the skills and competences to produce virtual models of women’s and men’s orthopaedic footwear designs.

Each trainee has to study the theoretical content of the lesson and then to perform practical activities with Icad3D+ software, such as:

- to choose lasts for specific pathologies applying knowledge of these pathologies, to apply the knowledge of design requirements for specific foot pathologies, to modify a footwear collection, applying the orthopaedic modifications and combinations of modifications to sole and heels for the specific cases presented in theoretical lessons.

Module IV

3D CAD - APPLICATIONS TO FASHIONABLE FOOTWEAR

Module IV is dedicated to professionals with special interest for fashionable footwear. Its main goal is to acquire comprehensive knowledge of all aspects surrounding the launch of footwear collections from idea to production. The main objectives of this module are:

- to design footwear collections mainly focused on operating with various materials, footwear components, trimmings and ornamentations.
- to apply 3D CAD technology powered by Icad 3D+ software for fashionable footwear through collection development;
- 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;
- to develop the skills and competences to produce virtual models of women’s and men’s orthopaedic footwear designs.

Each trainee has to study both the theoretical content of the lessons and the available resources which enrich each unit. The next step in progressing with learning of this module is to perform practical activities with Icad3d+software. 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. Students will develop 3D virtual models along the same style but adding also his/her own creativity.
Module III

3D CAD - APPLICATIONS TO ORTHOPAEDIC FOOTWEAR

This module explores how to select lasts and to design footwear for specific foot pathologies. The main objectives of this module are:

- to apply knowledge of 3D CAD technology powered by Icad3D+ software in order to select orthopaedic lasts appropriate for the specific foot pathology;
- to practice the 3D modelling process to a range of different footwear styles, therapeutic features and modifications which are compatible with the specific foot pathology and users expectations;
- to develop the skills and competences to produce virtual models of women’s and men’s orthopaedic footwear designs.

Each trainee has to study the theoretical content of the lesson and then to perform practical activities with Icad3D+ software, such as: to choose lasts for specific pathologies applying knowledge of these pathologies, to apply the knowledge of design requirements for specific foot pathologies, to modify a footwear collection, applying the orthopaedic modifications and combinations of modifications to sole and heels for the specific cases presented in theoretical lessons.

Module IV

3D CAD - APPLICATIONS TO FASHIONABLE FOOTWEAR

Module IV is dedicated to professionals with special interest for fashionable footwear. Its main goal is to acquire comprehensive knowledge of all aspects surrounding the launch of footwear collections from idea to production. The main objectives of this module are:

- to apply 3D CAD technology powered by Icad 3D+ software for fashionable footwear through collection development;
- 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;
- to design footwear collections mainly focused on operating with various materials, footwear components, trimmings and ornamentations.

Each trainee has to study both the theoretical content of the lessons and the available resources which enrich each unit. The next step in progressing with learning of this module is to perform practical activities with Icad3d+software. 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. Students will develop 3D virtual models along the same style but adding also his/her own creativity.
PARTNERS

COORDINATING PARTNER:
“Gheorghe Asachi” Technical University of Iasi
Address: B-dul D. Mangeron No.29, 700050, Iasi, Romania
Tel: +40 232 278 683/1267
http://www.tex.tuiasi.ro/
Email: amihai@tex.tuiasi.ro

Contact:

COORDINATING PARTNER:
“Gheorghe Asachi” Technical University of Iasi
Address: B-dul D. Mangeron No.29, 700050, Iasi, Romania
Tel: +40 232 278 683/1267
http://www.tex.tuiasi.ro/
Email: amihai@tex.tuiasi.ro
PARTNERS

COORDINATING PARTNER:
“Gheorghe Asachi” Technical University of Iasi
Address: B-dul D. Mangeron No.29, 700050, Iasi, Romania
Tel: +40 232 278 683/1267
http://www.tex.tuiasi.ro/
Email: amihai@tex.tuiasi.ro

Contact:

RO Universitatea Tehnica 'Gheorghe Asachi' din Iasi
ES INESCOP-Instituto Technologico del Calzado
PT Virtual Campus, Lda
ES IED- Instituto Europeo di Design
UK University of Salford
ES RED 21 SL
CREATIVE TRANSFER OF COMPETENCE IN 3D FOOTWEAR CAD TO VET PROFESSIONALS

TRAINING FOR VET TEACHERS, TRAINERS AND TUTORS IN THE FOOTWEAR SECTOR
Find out more at http://www.inga3d.eu/

Acknowledgment: This publication presents the Training Program of the INGA 3D project, titled “Creative Transfer of Competence in 3D Footwear CAD to VET Professionals” (contract LLP-LdV-ToI/2013-RO-024) which has been funded by ANPCDEFP Romania within the framework of the European LLP/LdV programme.

www.inga3d.eu