



## BIOMECHANICAL ASSESSMENT OF FOOT PATHOLOGIES, AND DESIGN AND MANUFACTURE OF ORTHOTIC SOLUTIONS

### PRESENTATION

This online course was developed during the Project TrainOrthot, funded by European Union through the Programme Leonardo da Vinci, Lifelong learning programme. The professionals in this field will be able to learn the latest technological and material progress through a course supervised by the Institute of Biomechanics of Valencia.

The project was led by APTO (Association of workers in Technical Orthopaedics) with the support and collaboration of ISPO (International Society for Prosthetics and Orthotics) and FEDOP (Spanish federation of orthotics and prosthetists). The rest of the consortium included the Czech University UTB (Tomas Bata University), The English University Uos (University of Salford) and the Biomechanics Institute of Valencia from Spain (IBV).

The training material of this course has been transferred and adapted from the results of the research project Innofoot (Innovative Treatment of Foot Disorders, COLL -CT- 2006-030468 ). In particular, the content was taken from a part of a collection of books published by the Association of Dutch orthopaedic NVOS ('Orthopedische Schoentechniek'), and from a Knowledge Management System about main foot diseases, also developed during the project Innofoot (<http://innofoot.ibv.org>).

### OBJETIVES

- Know the specific techniques for examining the lower extremities of the human body.
- Identify and assess the most common foot pathologies and diseases.
- Learn the different methods to acquire the foot shape in 2D and 3D.
- Be able to draw up a footwear plan for designing or adapting orthotic footwear.
- Know the most common techniques used in the process of last generation.
- Know how to make a pattern design.
- Become familiar with the different shoe manufacturing methods.
- Learn how to make shoe adaptations, supplements, footbeds and foot orthoses.

### ADRESSED TO

Professionals of the foot orthopaedic sector taking into account the needs of the market in different European countries.

### METHODOLOGY

- **Online course** (<http://campus.ibv.org>)

#### • **Key to success of our methodology**

- ✓ Clarity and usability: structure divided into modules and course work daily sessions. IBV Campus complies with accessibility standard AA. Study materials are in pdf format.
- ✓ Ease of assimilation: Reinforcement and extension activities in each work session and self-evaluation at the end of each module.
- ✓ Personal Tracking: by the dynamic course based on program results and activities in the recommended study schedule.
- ✓ Interactivity with peers and teachers through the forum and participatory activities.
- ✓ Tutoring: dynamic support and constant course and teaching guide.
- ✓ Continuous assessment: conducting online activities, delivery of work and final exam.

### CONTENTS

- Module 1: Examination of the human lower extremities
- Module 2: Assessment of the most relevant foot diseases
- Module 3: Methods for measuring and recording the foot shape
- Module 4: Footwear specific design for different pathologies
- Module 5: Last production and adjustments
- Module 6: Pattern design and methods of shoe manufacturing
- Module 7: Adjustments to footwear and insoles



## TEACHERS

- **Sergio Puigcerver.** Industrial Engineer specialized in Mechanics by the Polytechnic University of Valencia (UPV). He is a member of the Research and development area of the Institute of Biomechanics of Valencia from 2004 when he started to work on different research areas focused on comfort and functionality of footwear and the application of biomechanics to the design of products. He has been involved in different R&D projects at European level as well as consulting projects with different companies of footwear and foot health. He has proven experience in developing training materials for professionals in the field of footwear and orthopaedic lower limb.
- **Raquel Portilla Parrilla.** Degree in Education, Master in Human Resource Management. Senior Training Technician at Biomechanics Institute of Valencia. She has participated and conducted R+D projects in several calls as Lifelong Learning Programme and Projects funded by the Ministry of Education, Culture and Sport in Spain.

## TAYLORED TRAINING SERVICES

If you wish this course to be adapted to your specific needs, please do not hesitate to contact our Customer Service (+34 96 111 11 70) to receive a customized quote.

## BASIC INFORMATION

**Duration:** 55 hours online **Language:** English

**Certificate of achievement:** the student who has passed the evaluation, a certificate of achievement of the training, issued by the Institute of Biomechanics of Valencia will be provided.

### **Information and registration:**

- **Web:** [campus.ibv.org/ibv/form.php?id=534&lang=en](https://campus.ibv.org/ibv/form.php?id=534&lang=en)
- Customer Service: +34 96 111 11 70 [atencion.cliente@ibv.upv.es](mailto:atencion.cliente@ibv.upv.es)  
**Software and hardware required:** Computer with audio and internet access, web browser and email.  
Prior knowledge required: Basic operation of a computer and web browser.