ACE2 EUROPEAN UNIVERSITY

Applied Connected Entrepreneurial & Engaged

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SANTARÉM POLYTECHNIC UNIVERSITY

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LATVIAN ACADEMY OF CULTURE

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MEDICAL UNIVERSITY OF GDAŃSK

KÄRNTEN University of Applied Sciences

UFV Universidad Francisco de Vitoria

Technische Hochschule Ingolstadt

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Training course :
Person-centered prostheses

Stakeholders & Challenges:

NGO-Fundation: “How to improve the design and implementation of person-centered prostheses?”

General Course Overview

➢**TYPE: ABC (Applied Blended Challenge Programmes).** A course based on **experiential learning** and interdisciplinary collaboration. Developing solutions for **real-world challenges** proposed by stakeholders (e.g., NGOs, special and mainstream schools, day/residential units for children with SN).

➢**DURATION: 50 hours online asynchronous** and **40 hours onsite** (theory + practice) .

➢**TARGET AUDIENCE:** Students from **ACE²-EU** universities (any specialization)

➢**SHORT DESCRIPTION:**
- This is a **fully applied course** based on multidisciplinary learnings to improve the design and implementation of person-centered prostheses
- Students will receive **tools** for working with and for **people with prostheses**
- Participants will work on **real-life cases** alongside professionals from NGOs or foundation

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Training course :

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GENERAL OBJECTIVES:

- Customized manufacturing adapted to the user's needs

- Providing solutions from an interdisciplinary perspective: Biomedical, Engineering, Physiotherapist, Biomechanics, material properties, and manufacturing (FabLab)

- Improving the quality of life of people who have to use prostheses

Sustainable Development Goals (SDGs) Addressed:

- **SDG 3:** Good Health and Well-Being

- **SDG 10:** Reduced Inequality

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CONTENT

- To understand the basic principles of prosthetics design (with a focus on the pediatric needs)
- To explore and analyze various materials for prosthesis production, considering factors as durability, safety, comfort, functionality, price, activity level
- To develop skills for selecting and testing appropriate materials and their characteristics
- Learn about biomechanics and how to design custom solutions that ensure proper alignment and movement for Young users
- To gain hands-on experience in the process of fabrication, form material selection and anatomy understanding to de final fitting.
- To assess the latest advances, innovation in other to improve the quality of life for children with limb differences
- To enhance understanding of the emotional and psychological considerations when designing prostheses for children and how to improve their experience
- Introduction to basic computer-aided design (CAD) for 3D modeling.
- Introduction to 3D scanning for digitizing real-life objects.
- Introduction to digital manufacturing technologies in general and additive manufacturing and 3D printing in particular.

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Key Features for the ABC Format:

✅ **International mobility** – one week of training at another **ACE²-EU** university.

✅ **Practice-oriented learning** – interactive exercises, collaboration with real stakeholders.

✅ **Real-life casework** – partnerships with NGOs, schools and social services.

✅ **Innovative solutions** – students put together specific knowledge and perspectives of their specialization to find **local solutions** for a better inclusion of children with special needs

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Conclusion – Developed Competencies

- ✓ **Practical intervention**
- ✓ **Effective communication**
- ✓ **Reflection**

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