

ACE²

EUROPEAN UNIVERSITY



Applied Connected Entrepreneurial & Engaged



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Training course : Person-centered prostheses

Stakeholders & Challenges:

NGO-Foundation: “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

Sustainable Development Goals (SDGs) Addressed:

- **SDG 3:** Good Health and Well-Being
- **SDG 10:** Reduced Inequality

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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



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 do final fitting.
- To assess the latest advances, innovation in order 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.



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

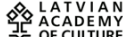
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