



GOVERNMENT  
OF MALTA



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the European Union

# EDUWEAR - Engineering Educational Competence Development on Customisable Wearable Rehabilitation Devices



## Newsletter

July, 2026



Issue

#04

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# Introduction

► Following another productive period for the EDUWEAR consortium, we are delighted to bring you the fourth edition of the EDUWEAR Newsletter.

Over the past few months, the project has reached several important milestones as the EDUWEAR course continues to evolve from a carefully designed curriculum into a validated educational programme. Our recent activities have centred on engaging with educators, students, and professionals to gather valuable feedback that will help ensure the course meets the needs of future learners and the rapidly evolving field of wearable rehabilitation technologies.

In this issue, we look back at our successful Hybrid Dissemination Event in Pisa, where stakeholders were introduced to the EDUWEAR course and invited to share their views through surveys and focus groups. We also continue our Meet the EDUWEAR Team series by introducing the researchers from the University of Pisa, provide a closer look at the course structure and practical learning activities currently under development, and preview the upcoming Summer Training in Cyprus, where participants will experience the EDUWEAR approach in a real clinical rehabilitation environment.

We hope you enjoy this edition and thank you for following our journey as we continue working towards equipping the next generation of engineers and healthcare professionals with the knowledge and skills needed to develop innovative, human-centred wearable rehabilitation technologies.



**Welcome to the  
4th Newsletter!**

***Refining the  
EDUWEAR  
Learning Journey***





# The Consortium

The EDUWEAR project brings together a strong alliance of academic excellence:

## Core Partners



**L-Università  
ta' Malta**

**University of Malta** – Leading the project with expertise in engineering education and rehabilitation-focused innovation.



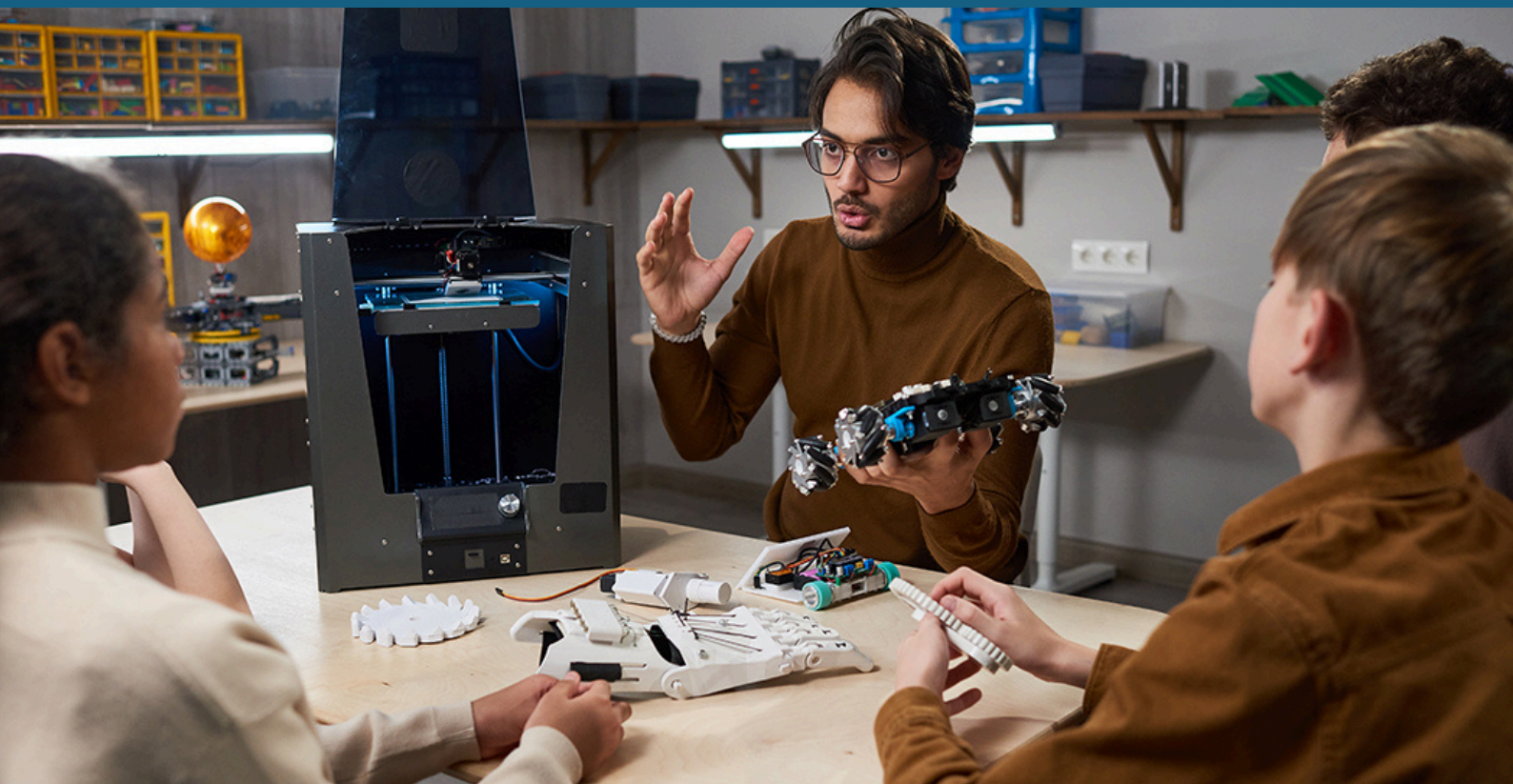
**UNIVERSITÀ DI PISA**

**University of Pisa** – Contributing in-depth knowledge in biomedical and industrial engineering.



**UNIVERSITY  
OF OULU**

**University of Oulu** – A pioneer in digital fabrication and wearable technologies, fostering hands-on learning.





The EDUWEAR project is further strengthened by the expertise and collaboration of our associate partners:

## Associated Partners

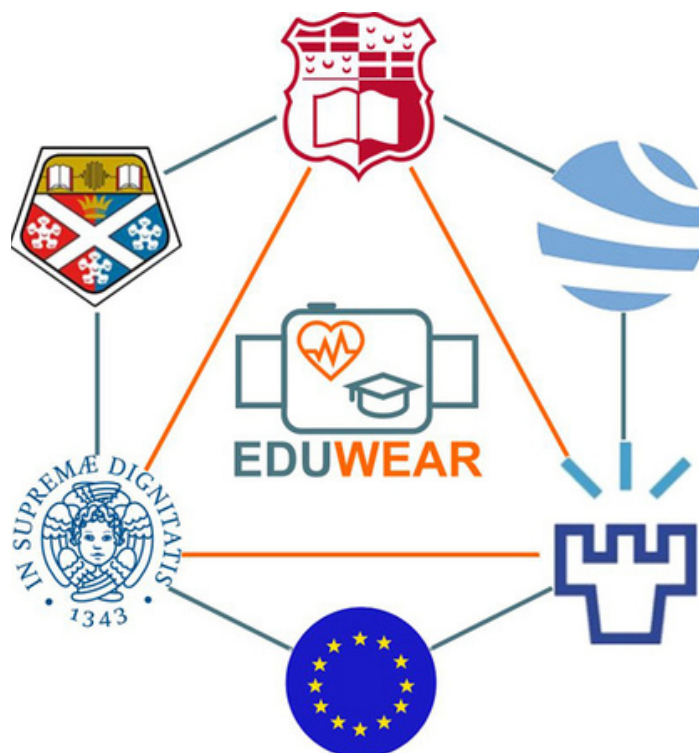


**University of Strathclyde** – Specializing in advanced technology and engineering education, supporting project innovation.

**Nicomed** - A leader in the healthcare and rehabilitation field, bringing invaluable industry insights and practical applications.



*Make sure to subscribe to our mailing list – future newsletters will dive deeper into the expertise of each partner and team member!*



# Meet the Team

## University of Pisa

Our Meet the EDUWEAR Team series continues by introducing the researchers and educators whose expertise is driving the development of the EDUWEAR course.

In this edition, we spotlight the team from the **University of Pisa**, whose contributions span curriculum development, 3D scanning, additive manufacturing, and engineering education, helping to shape the next generation of wearable rehabilitation technologies.

### Paolo Neri



► **Paolo Neri** is an Associate Professor of Industrial Design Methods at the Department of Civil and Industrial Engineering of the University of Pisa. He received an M.Sc. Degree in Mechanical Engineering (2012) with honour class and a Ph.D. in Mechanical Engineering (2015) at the University of Pisa. His research topics include Mechanical systems modelling and simulation, Experimental Dynamic characterization, Reverse Engineering, 3D structured light-based techniques for the acquisition and modelling of complex 3D shapes and vibration measurements, and custom 3D printing processes for engineering and biomedical applications. Prof. Neri is the head of the laboratory for baldded disks dynamics, and he is the author/co-author of more than 90 Scopus-indexed papers published in international refereed journals and conferences. He has participated in several research projects. He has been in charge of a research grant of the University of Pisa and he was Task Leader in the European Project PRIME-VR2. He is now member of the steering committee of the EDUWEAR project, co-funded by the European Commission.

### Beatrice Aruanno



► **Beatrice Aruanno** is an Assistant Professor at the Department of Civil and Industrial Engineering, University of Pisa, Italy, in the field of Design and Methods of Industrial Engineering. Her research focuses on digital design, extended reality, human-computer interaction, virtual and physical prototyping, 3D acquisition and reconstruction, and digital workflows for customised products and devices, with applications in rehabilitation, education, cultural heritage and industrial design. She earned her Ph.D. in Mechanical Engineering from Politecnico di Milano in 2020 with a thesis on the development of an active hand exoskeleton and an AI-based virtual assistant for home-based cognitive and motor rehabilitation. She has contributed to national and international research projects, including Horizon 2020 PRIME-VR2, coordinated by the University of Pisa, where she worked on digital patient profiling, 3D reconstruction and personalised VR-based rehabilitation solutions. Within EDUWEAR, she contributes to the design of interdisciplinary educational content and hands-on activities on wearable rehabilitation devices.

## Francesco Tamburrino



► **Francesco Tamburrino** is an Associate Professor in the field of Design and Methods for Industrial Engineering. His research interests include product design and development, advanced and additive manufacturing, materials engineering, and engineering education. His work focuses on the design and optimization of manufacturing processes, the development and characterization of innovative engineering materials, and the application of advanced manufacturing technologies to customized products for healthcare and industrial applications. He has extensive experience in national and international research projects and has published widely in the fields of industrial engineering, advanced manufacturing, and engineering education. Within the Eduwear project, his work contributes to the development of educational methodologies and training resources for the design and manufacturing of customizable wearable rehabilitation devices.



## UNIVERSITÀ DI PISA

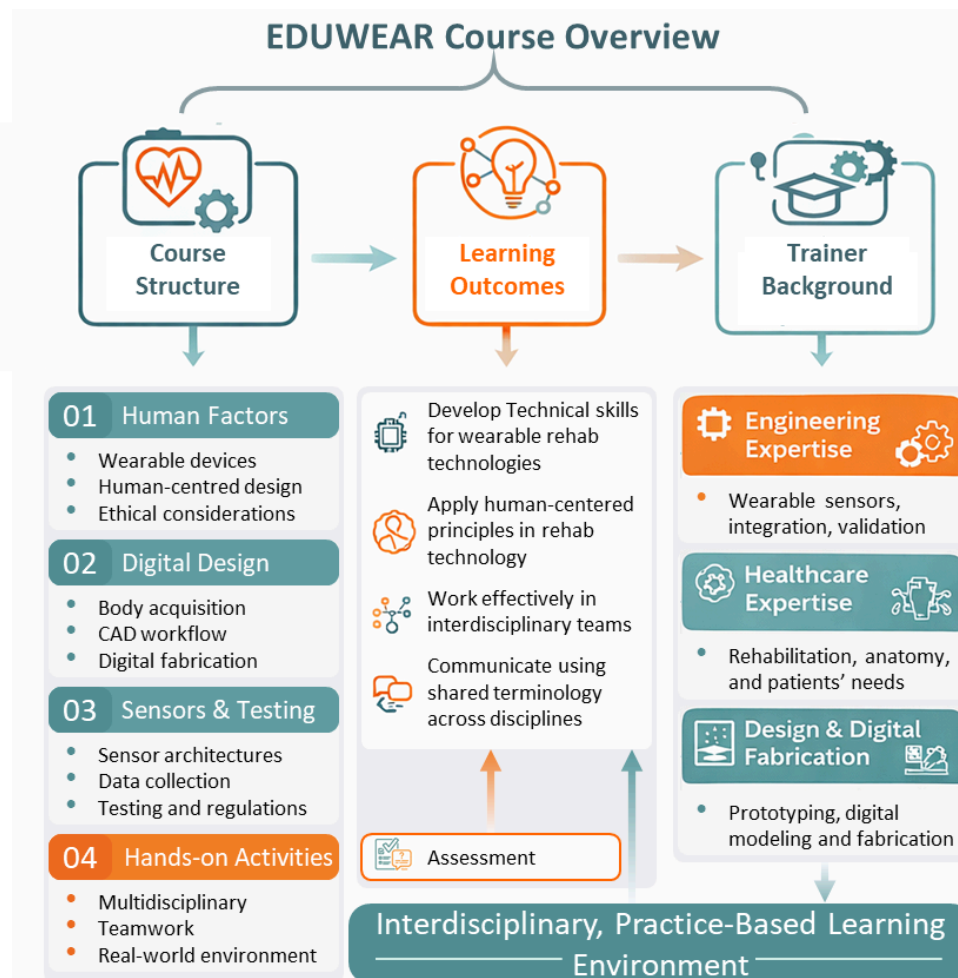
The Department of Civil and Industrial Engineering (DICI) at the University of Pisa brings together education, research, and responsible innovation across a broad range of engineering disciplines. Its activities span areas including mechanical and aerospace engineering, materials and nanotechnology, manufacturing, energy, infrastructure, transportation, and process engineering, with a strong emphasis on interdisciplinary collaboration and sustainable development. Through its extensive undergraduate, postgraduate, and doctoral programmes, DICI prepares future engineers and researchers to address emerging challenges in areas such as health, mobility, sustainability, and Industry 4.0.



# From Research to Learning

## The EDUWEAR Course Takes Shape

After months of collaboration across the partner universities, the EDUWEAR consortium has successfully completed the design of its interdisciplinary learning programme. Building directly on the competency gaps identified in Work Package 2, the course has been carefully developed to prepare future engineers and healthcare professionals to work together in designing customisable wearable rehabilitation devices.



The course combines the strengths of engineering, rehabilitation sciences, and human-centred design into a blended learning experience, where online teaching is complemented by practical, hands-on activities. Learners will progress through three interconnected modules covering rehabilitation and human factors, digital design and additive manufacturing, and sensor integration with testing and validation. Together, these modules provide approximately **50 hours of learning**, including 14 hours of online lectures, 14 hours of self-study, 7 hours of quizzes, and 15 hours of hands-on activities.

Designed with accessibility and flexibility in mind, each lecture is divided into shorter sections and accompanied by narrated presentations, supporting materials, quizzes, and dedicated student and trainer handbooks.

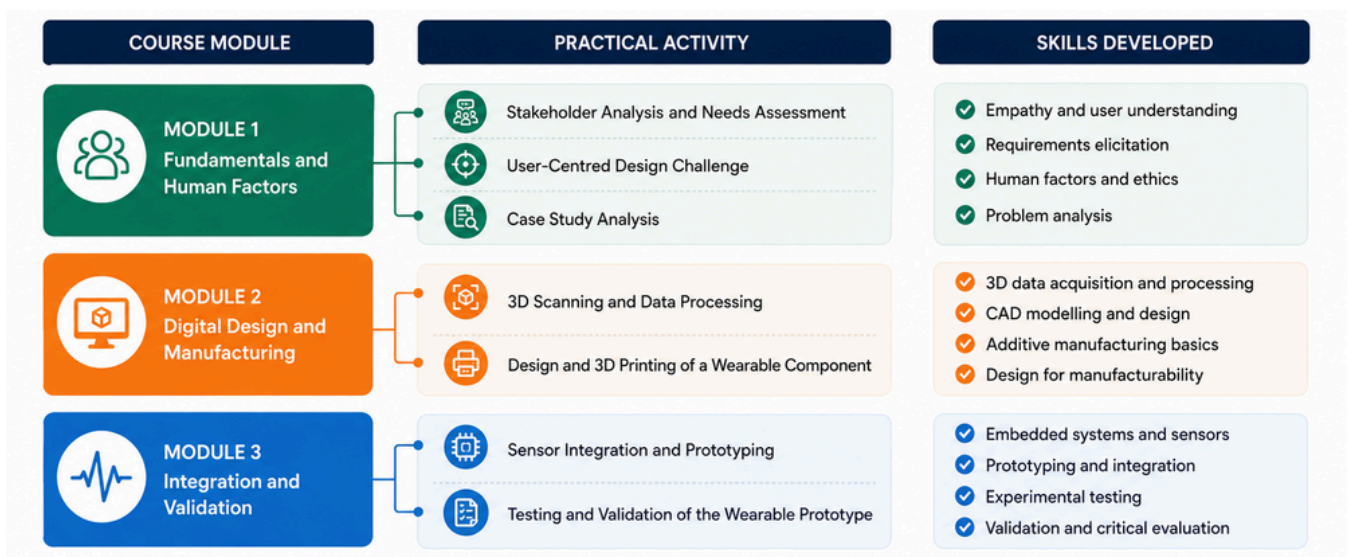


Module 1, **Fundamentals and Human Factors**, provides the foundational knowledge required to understand the rehabilitation technology landscape and the importance of human-centred design approaches. The module introduces learners to the challenges associated with designing technologies for rehabilitation and highlights the importance of effective communication between engineering and healthcare disciplines.

Module 2, **Digital Design and Manufacturing**, focuses on the digital technologies and manufacturing processes required for the development of bespoke rehabilitation devices. The module introduces learners to the complete workflow from body acquisition to digital modelling and fabrication. Module 3, **Integration and Validation**, addresses the integration of sensing technologies into wearable systems and the methods required to evaluate their performance and suitability for rehabilitation applications.

The course is going to be hosted on the Moodle e-learning platform, allowing participants from different institutions and backgrounds to access the material at their own pace while maintaining a structured learning pathway.

Practical learning remains at the heart of EDUWEAR. Students will move beyond theory by analysing real rehabilitation scenarios, developing user-centred concepts, exploring 3D scanning and CAD modelling, preparing devices for additive manufacturing, integrating embedded sensors, and applying testing and validation methods. These activities have been specifically designed to encourage collaboration between engineering and healthcare students, closely reflecting the multidisciplinary environments found in modern rehabilitation technology development.



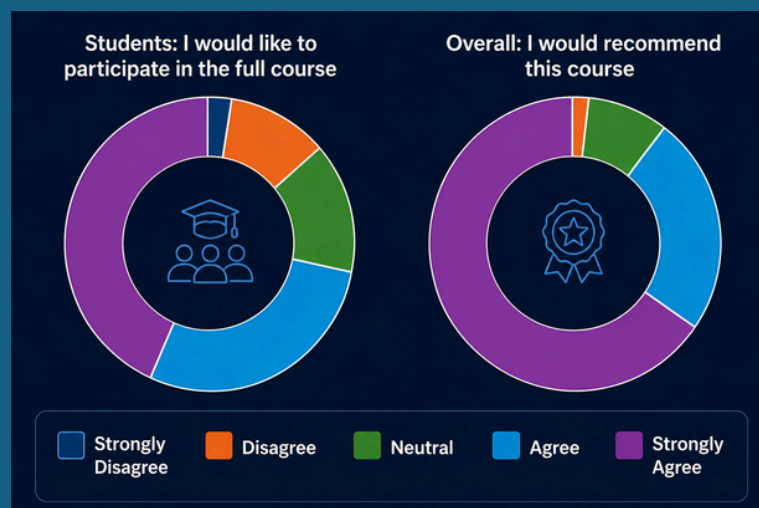
# Refining the EDUWEAR Experience

## Feedback from the Hybrid Dissemination Event in Pisa, Italy.

With the course content now complete, the consortium's attention has turned towards ensuring that the learning experience truly meets the needs of its future users. This important milestone was marked by the Hybrid Dissemination Event held at the University of Pisa, where students, educators, healthcare professionals, clinicians, and industry representatives were given an exclusive preview of the EDUWEAR course. Participants explored the programme structure, learning modules, practical activities, assessment strategy, and supporting resources before sharing their views through surveys and focus group discussions.



The response was overwhelmingly encouraging. Stakeholders praised the course's clear interdisciplinary focus, its balance between theory and practice, and its strong emphasis on solving real-world rehabilitation challenges. In particular, participants appreciated how the course bridges engineering and healthcare disciplines while introducing learners to emerging technologies such as wearable sensing, digital manufacturing, and personalised rehabilitation solutions. A significant number of students also expressed their willingness to enrol in the course, demonstrating the growing interest in this rapidly evolving field.



Equally valuable were the constructive suggestions received during the evaluation process. Feedback highlighted opportunities to further strengthen the learning experience by incorporating additional visual examples, expanding selected technical topics, making learning outcomes more explicit, and enhancing interdisciplinary communication throughout the course. Participants also encouraged the inclusion of emerging technologies such as Artificial Intelligence and additional examples illustrating real clinical applications.

## KEY IMPROVEMENT SUGGESTIONS

Strengthening the **EDUWEAR** learning experience

1



Enhance learning materials through increased use of visuals, images, and examples

2



Strengthen Module 3 content related to data visualisation and sensor accuracy

3



Encourage oral presentations as a complement to written reports for practical activities

4



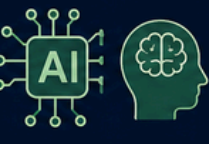
Add explicit learning outcomes to each lecture

5



Include references to an initial kick-off meeting within the handbooks

6



Introduce content related to the use of AI tools in Module 3

7



Explore alternative audio-generation tools to improve lecture delivery

8



Strengthen content related to interdisciplinary communication between engineering and health sciences disciplines

These recommendations have already been incorporated into the final version of the course materials, ensuring that EDUWEAR continues to evolve through close collaboration with its stakeholders.

The successful completion and validation of the EDUWEAR course marks an important step towards the project's next phase, where learners will soon have the opportunity to experience this innovative educational programme and help shape the next generation of wearable rehabilitation technologies.



# Coming Next: EDUWEAR Clinical Workshops in Malta & Cyprus

With the EDUWEAR course now developed and refined through stakeholder feedback, the consortium is moving into an exciting new phase: clinical workshops across Pisa, Malta, and Cyprus. These events are designed to bring the EDUWEAR learning approach closer to real rehabilitation environments, allowing participants to apply course concepts through hands-on, clinically oriented activities.

The first of these activities took place in Pisa, Italy on 24 June 2026, where participants were introduced to the EDUWEAR project and course before engaging in a practical clinical session. After tutorials on both the custom PRIME-VR2 scanner and a commercial handheld 3D scanner, participants practised 3D scanning techniques with one another and then with volunteer patients under clinical supervision. The workshop also included guidance on patient interaction, scanner comparison, and the collection of patient feedback on comfort, usability, and the overall scanning experience. Furthermore participants were involved in other activities related to the development of smart wearables for rehab, including concept generation, product verification and validation.

Following Pisa, the upcoming Malta and Cyprus workshops will continue this hands-on clinical journey. Multidisciplinary students will work in authentic rehabilitation settings, exploring user-centred design, digital manufacturing, wearable device evaluation, and validation activities. These workshops will provide valuable opportunities to test the EDUWEAR course approach in real-world contexts while gathering feedback from students, clinicians, and other stakeholders.

**Stay tuned for the next newsletter, where we will share highlights, reflections, and outcomes from these clinical learning experiences!**



# New Publications

The EDUWEAR project continues to contribute to the academic discussion on interdisciplinary engineering education, wearable rehabilitation technologies, and competence-driven curriculum design. Two new papers will be presented in September 2026, showcasing key insights from the project's research, workshops, and course development activities.

## **Bridging Disciplines Through Making: Competency Development in Interdisciplinary Wearable Rehabilitation Technology Education**

This paper will be presented at the 28th International Conference on Engineering and Product Design Education (E&PDE 2026), hosted by the University of Bristol on 3–4 September 2026.

It presents findings from an EDUWEAR hands-on summer training in Oulu, Finland where students from engineering, design, and occupational therapy worked together to develop wearable rehabilitation devices. The paper highlights key competence gaps in clinical understanding, regulatory awareness, electronics, programming, and real-world rehabilitation contexts. It shows how hands-on interdisciplinary learning can help bridge these gaps.

## **Bridging Engineering and Healthcare in Design Education: A Competence-Driven Course Development Approach**

This paper will be presented at the Associazione Nazionale Disegno e Metodi (ADM) Conference, taking place in Milan, Italy, from 9–11 September 2026.

The paper describes how EDUWEAR used focus groups, surveys, and workshop activities to identify competence gaps and translate them into a blended course structure. It highlights the importance of combining human-centred design, digital fabrication, sensing technologies, validation, and clinical awareness within engineering education.

**Together, these publications reflect EDUWEAR's growing contribution to the future of engineering and product design education, particularly in preparing students to work across disciplinary boundaries in healthcare innovation.**

# Project News & Highlights

## EDUWEAR Course Now Live on Moodle

We are pleased to share that the EDUWEAR course is now available on the University of Pisa Moodle platform and ready to welcome students. This marks an important milestone for the project, as the course content, learning materials, and supporting resources are now accessible through the selected e-learning environment. The platform will support students as they engage with the EDUWEAR blended learning experience, combining online lectures, quizzes, handbooks, and practical learning activities. Enroll now by clicking [here](#).



## EDUWEAR Presented as a Best Practice Project

The EDUWEAR project was proudly presented as one of the best practice projects during the Second Ambassadors Meeting organised by the European Union Programmes Agency (EUPA). During the event, the project achievements attained so far were highlighted, together with the positive impact EDUWEAR is having on its target audience. The meeting reflected EUPA's continued commitment to promoting the horizontal priorities of the Erasmus+ Programme and the European Solidarity Corps, with this edition focusing on Digital Transformation.



It was an honour for EDUWEAR to be recognised among projects that use innovation and technology to create meaningful educational and societal impact, contributing towards a more digitally inclusive and forward-looking future.



## EDUWEAR on the Move: Reaching New Audiences

Over the past months, EDUWEAR continued to strengthen its dissemination activities across different academic and professional settings.

The project was presented to Master's students at Munich University of Applied Sciences, offering an opportunity to engage with future engineers and discuss innovation in wearable rehabilitation technologies.



EDUWEAR flyers were also distributed during the INSPIRE Conference: Smart Tools for Strong Lives, helping raise awareness about the project's work on customisable wearable rehabilitation devices.

In addition, a dissemination activity was carried out within the course “Criteria and Methods for Material Selection in Industrial Products”, part of the BSc in Industrial Design Engineering at the University of Pisa. Students were introduced to the EDUWEAR project and its approach to developing customisable wearable rehabilitation devices. The session generated strong interest, particularly in how the project connects engineering, design, materials, and user-centred thinking in real-world applications.





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SOCIAL UNITY

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