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# **BLENDED INTENSIVE PROGRAMS (BIPs)**

Template Ulysseus BIP proposal (T7.3)



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**BIP TITLE:**

**Advancements and applications of wearable technology:  
an interdisciplinary approach**

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**General Course Information**

- Course Description: An extract with one or two lines to define each course would help to describe it properly on the website:

**Through hands-on projects, the course aims to explore real-world applications of wearable technology and telerobotics, emphasizing their innovative uses and impact.**

- Image for the course:



- **Ulysseus Priority topics:**

- Entrepreneurship;
- Multilingual & intercultural competences;
- Equality Diversity & Inclusion;
- Citizen Engagement
- X Related to the Ulysseus Innovation Hubs;
- X Transversal/Interdisciplinary topics aligned with the Ulysseus Mission

- Target group:
  - X Students
  - Non-academic staff
  - Academic staff
  
- Level (for students):
  - X Bachelor
  - X Master
  - X PhD
  
- Field of study (and ISCED for a BIP for students):  
6/7
  
- Course dates from (please including the dates of the virtual part and + the physical part) **10 / 02 / 25** to **21 / 02 / 25**
  
- Registration dates are open from **15 / 10 / 24** to **30 / 12 / 24**

## Course Content

- Course Outline:

*Provide a description of the course outline, detailing how students will collaborate either in groups or individually. The course is centred around specific topics for development. What are the expectations, such as whether they will be required to perform a specific task at the end of the course?*

The course will provide a hands-on, project-based approach where students work with data, wearable devices, and robotic systems to design, implement, and test interactive applications. Students will collaborate in interdisciplinary groups of 4-5 to develop practical solutions that address real-world challenges. Each group will work on a specific application of wearable technology or telerobotics, tailored to healthcare, arts, or HRI. Most tasks will be done in teams,

encouraging students to collaborate across disciplines such as engineering, computer science, and design.

Although collaboration is key, students are expected to take on individual roles within the group, such as data analysis or hardware assembly, ensuring each member contributes effectively.

- Course content:

*(Please describe what are the **main topics addressed** on this BIP).*

This course is designed to introduce students to the cutting-edge fields of wearable technology and telerobotics, with applications in healthcare (rehabilitation), the arts, and human-robot interaction (HRI). The content is structured to cover key theoretical concepts and practical applications, culminating in the development of functional prototypes by students.

Main Topics Addressed:

1. Wearable Technology and Remote Sensing: Integration of wearables and sensors for real-time data collection and monitoring across various fields.
2. Data Processing and Prototyping: Efficient data collection, processing, and system design to enhance wearable and remote sensing technologies.
3. Applications in Healthcare, Arts, and HRI: Wearable technology's impact on healthcare, creative industries, and human-robot interaction, including digital twins and telerobotics.

- Learning Outcomes:

- **Following this course, students will be able to:** *(Please describe the learning outcomes expected by the end of this course. What will the target audience be able to do or know upon completing this course?)*

By the end of this course, students will have gained both theoretical understanding and practical skills in the fields of wearable technology and telerobotics, specifically in their

application to healthcare (rehabilitation), arts, and HRI.

Upon completing this course, students will be able to:

- Understand core concepts in wearable technology with a transdisciplinary approach
- Design and develop wearable and remote sensing systems for specific application
- Analyze and process data from wearables devices
- Implement practical applications
- Conduct user testing and evaluate system usability
- Collaborate in inter- and trans-disciplinary teams

Upon completing this course, students will be prepared to:

1. Pursue further research or careers in wearable technology, with potential applications in telerobotics, healthcare technology, interactive arts, and/or HRI.
2. Develop real-world solutions that integrate cutting-edge technology with user-focused design across multiple industries.

## Course Practical Details

- Practical Details

- Start date virtual part: 10 / 02 / 2025
- Start date of the physical part: 17 / 02 / 2025
- Teaching language: English
- Location: Genoa (IT)
- ECTS (minimum 3 ECTS for a BIP for students): 3
- Workload: 75 hours
- The maximum number of participants for the BIP and precise if participants in addition of the Erasmus+ one can be added: 25 (10 extra Erasmus+)
- Contact:  
Fulvio Mastrogiovanni <[fulvio.mastrogiovanni@unige.it](mailto:fulvio.mastrogiovanni@unige.it)>  
Clio Flego <[cliofabiana.flego@unige.it](mailto:cliofabiana.flego@unige.it)>

## Physical Mobility

- The physical mobility part will be running from 17<sup>th</sup> to 21<sup>th</sup> February 2025 in Genoa (IT).
- The seminar's focus is developing and applying wearable technology and telerobotics, particularly in healthcare rehabilitation, arts, and HRI. Students will collaborate in interdisciplinary groups of 4-5 to develop practical solutions that address real-world challenges in these fields.

*	Morning	Afternoon
Day 1	9:00 – 10:00 <b>Registration</b> 10:00 – 11:30 <b>Introduction</b> 11:30 – 13:00 <b>Welcome talk</b>	14:00 – 15:30 <b>Round table</b> 15:30 – 16:30 <b>WGs creation</b>
Day 2	9:00 – 11:00 <b>Expert lecture</b> 11:00 – 13:00 <b>Workshop #1</b>	14:00 – 16:30 <b>WGs activities - Hackathon #1: prototyping</b>
Day 3	9:00 – 11:00 <b>Expert lecture</b> 11:00 – 13:00 <b>Workshop #2</b>	14:00 – 16:30 <b>WGs activities - Hackathon #2: data collection and evaluation</b>
Day 4	9:00 – 11:00 <b>Expert lecture</b> 11:00 – 13:00 <b>Workshop #3</b>	14:00 – 16:30 <b>WGs activities - Hackathon #3: user interaction testing</b>
Day 5	<b>Final presentation</b> <b>And farewell</b>	

\*Preliminary programme, subject to change

## Virtual Component/Part

- *Practical Details Regarding the Virtual Component:*  
During the first week, students will work remotely on the foundational aspects of the project, focusing on background research, theoretical issues, and prototype design. The goal is to prepare the groundwork for hands-on activities in Week 2.
- *During which dates will this segment be conducted? How will it be organised? Could you also provide a list of topics covered in this part of the program?*

TBC

## Requirements

Please highlight the enrolment requirements within this section, including the necessary study levels for enrolment in this BIP. Are there any specific background requirements? Additionally, please specify the required language proficiency level.

- Language and level requirement: English (B2)
- Expected participants: Students at bachelor and master levels
- Equipment: personal laptop

## Application Process

- Please provide the necessary details regarding the application process in this section. Specifically, indicate the deadline for accepting applications and enumerate the required documents such as CV, Motivational Letter, etc.

CV and short bio, including personal contact details.

Deadline for application: December, 30<sup>th</sup>, 2024.

- Depending on student's HOME UNIVERSITY, please find below the contact information, including a list of links providing email addresses from the mobility offices of each of the Alliance's universities
- Kindly provide an email address or URL where participants from your institution may contact you to express their interest in participating in the selection process. For instance :

University	Students	PhD	Staffs
UniCA	<a href="mailto:mobility-ulysseus@univ-cotedazur.fr">mobility-ulysseus@univ-cotedazur.fr</a>	<a href="mailto:mobility-ulysseus@univ-cotedazur.fr">mobility-ulysseus@univ-cotedazur.fr</a>	<a href="mailto:mobility-ulysseus@univ-cotedazur.fr">mobility-ulysseus@univ-cotedazur.fr</a>
MCI	<a href="mailto:mobilityofficer.ulysseus@mci.edu">mobilityofficer.ulysseus@mci.edu</a>	<a href="mailto:mobilityofficer.ulysseus@mci.edu">mobilityofficer.ulysseus@mci.edu</a>	<a href="mailto:mobilityofficer.ulysseus@mci.edu">mobilityofficer.ulysseus@mci.edu</a>
USE	<a href="mailto:mobilityulysseus@us.es">mobilityulysseus@us.es</a>	<a href="mailto:mobilityulysseus@us.es">mobilityulysseus@us.es</a>	<a href="mailto:mobilityulysseus@us.es">mobilityulysseus@us.es</a>
TUKE	<a href="mailto:natalia.vaskova@tuke.sk">natalia.vaskova@tuke.sk</a>	<a href="mailto:natalia.vaskova@tuke.sk">natalia.vaskova@tuke.sk</a>	<a href="mailto:natalia.vaskova@tuke.sk">natalia.vaskova@tuke.sk</a>
UniGe	<a href="mailto:mobility-ulysseus@unige.it">mobility-ulysseus@unige.it</a>	<a href="mailto:mobility-ulysseus@unige.it">mobility-ulysseus@unige.it</a>	<a href="mailto:mobility-ulysseus@unige.it">mobility-ulysseus@unige.it</a>
HH	<a href="mailto:emma.fuchs@haaga-helia.fi">emma.fuchs@haaga-helia.fi</a>	<a href="mailto:emma.fuchs@haaga-helia.fi">emma.fuchs@haaga-helia.fi</a>	<a href="mailto:emma.fuchs@haaga-helia.fi">emma.fuchs@haaga-helia.fi</a>
Munster	<a href="mailto:mobilityulysseus@uni-muenster.de">mobilityulysseus@uni-muenster.de</a>	<a href="mailto:mobilityulysseus@uni-muenster.de">mobilityulysseus@uni-muenster.de</a>	<a href="mailto:mobilityulysseus@uni-muenster.de">mobilityulysseus@uni-muenster.de</a>

UCG	<a href="mailto:ulyseusmobility@ucg.ac.me">ulyseusmobility@ucg.ac.me</a>	<a href="mailto:ulyseusmobility@ucg.ac.me">ulyseusmobility@ucg.ac.me</a>	<a href="mailto:ulyseusmobility@ucg.ac.me">ulyseusmobility@ucg.ac.me</a>
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- *Feel free to include any relevant links or documents if deemed necessary for further information.*

## Professors

*Who are the instructors teaching this course and which university do they belong to?*

- Team of lecturers and experts from different UniGe departments and Ulysseus partner universities.





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