

# BIOMEDICAL WEARABLE TECHNOLOGIES FOR HEALTHCARE AND WELLBEING

## Information about the examination modality

### Exam composition and grade

The exam is composed by two independent mandatory parts:

1. Written test
2. Project preparation and discussion

The written test will be graded on a scale from 0 to 20.

The project preparation and discussion will be graded on a scale from 0 to 12.

The final grade will be the sum of the two grades, where 31 and 32 will correspond to 30L.

The exam will be considered passed when the written test is passed with at least 12/20 and the overall final grade is at least 18/30.

### Written exam description

#### *Exam details*

The written exam will last around 90 minutes and will consist of a mix of open and closed questions: up to 3 open questions + up to 15 closed questions.

The questions will focus on the course content that will be presented during the “theory” lessons.

#### *Exam dates*

- First exam session: 20/06/2023 - 13:00 – Room De and Le
- Second exam session: 05/07/2023 – 9:00 – Room Ae
- Third exam session: 28/08/2023 – 9:30 – Room Ae
- Fourth exam session: 30/01/2024 – 9:30 – Room Me

Note: by “First session” we mean the Italian “Primo appello”, i.e., the first attempt at passing the exam, by “Second session” we mean the Italian “Secondo appello” and so on.

### Project description

### *Project rationale*

This course is characterized by a strong practical part, where you will learn to develop autonomously a mobile app able to fetch health data from Web APIs and leverage those data to develop some functionalities that can potentially target both healthy subjects and sick patients.

### *Project details and grading*

You will be asked to divide into groups of 3 people, and each group will build an app that collects user health data from a wearable device through Web APIs, stores them, visualizes them, and does some tricks with them.

To be successful the mobile app must:

- Implement the following core functionalities:
  - User authentication and management
  - Data collection
  - Data persistence
  - Data visualization and presentation
- Implement some original functionalities that leverage the health data at hand  
→ This is up to your fantasy!
- Be the result of some quality teamwork evaluated both during the discussion and by inspecting the working tree of your project (GIT history and Code organization).

The following (weighted) criteria will be considered for grading the project work,

- Core functionalities (weight = 50%)
- Additional functionalities (weight = 40%)
- Quality of the teamwork (weight = 10%)

### *Project code delivery*

Project code must be delivered by 15/07/2023, and no later than 3 days before the date of the project discussion.

The project discussion can be done during two possible time windows:

- Window #1: from 30/06/2023 to 21/07/2023
- Window #2: from 21/08/2023 to 23/09/2023

This means that the following representative scenarios are valid:

- Code delivered on 10/07/2023, Project discussion on 14/07/2023 or later (up to 23/09/2023)
- Code delivered on 10/06/2023, Project discussion on 30/06/2023 or later (up to 23/09/2023)
- Code delivered on 15/07/2023, Project discussion on 25/08/2023 or later (up to 23/09/2023)

Project code must be delivered in the form of a valid GitHub repository link sent using the Elearning system (detailed instructions will be provided by the end of the course).

We will evaluate the last commit in the master (or main) branch dated before the project delivery timestamp. Commits dated after the project delivery timestamp will not be considered. Students that will try to discuss code that is newer to such timestamp will be strongly penalized.

#### *Project discussion*

The project discussion will consist of a 25 min presentation of the project (15 overall presentation of the functionalities + 10 min demo) + 20 min Q&A.

The project will be discussed/presented in dedicated slots (dates will be provided later during the course). Anyway, the projects must be in one of the two indicated windows even if you plan to take the written exam in the third session or you want to retake the written exam.

The members of the group must discuss the project together in the same slot.

The project discussion grade will be valid for the entire academic year.

It won't be possible to re-discuss the project.

#### *Group composition*

Groups must be composed of 3 people.

You can enroll your group in dedicated lists available in the course e-learning page until the end of March.

If no more lists will be available at some point, simply write to us and we will open some more lists.

If, at the end of the enrollment period, (first of April) two or more groups are composed by less than 3 people, the teacher will reserve the right to reallocate those people.