

COURSE PRESENTATION

# Sport engineering and Human performance

15-19 and 22-26 June 2026

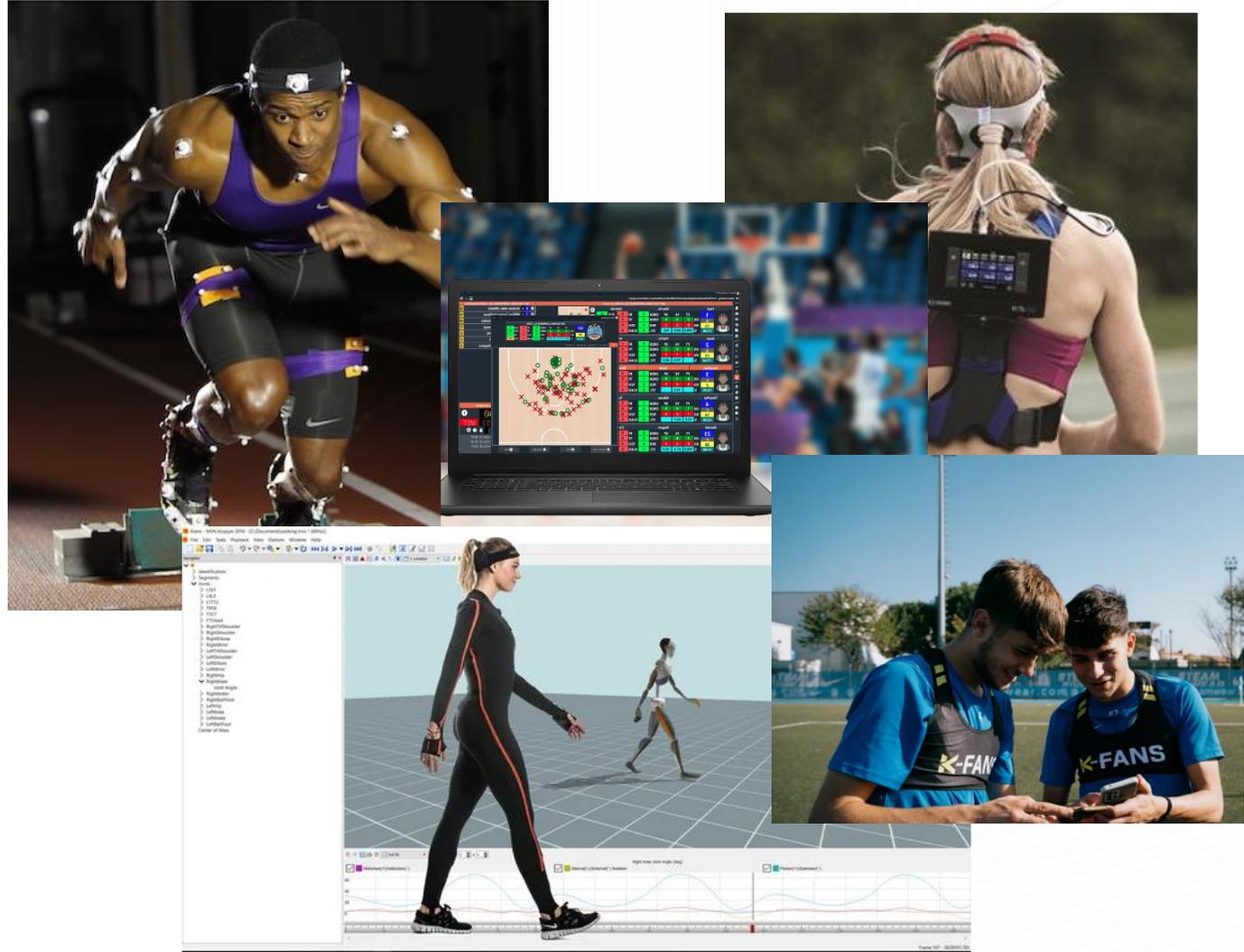
TEACHER(S)

Marco Tarabini



# Introduction

Technological innovation is revolutionizing the sports field in the constant search for excellence



# Introduction

Politecnico is actively involved in research in the sports sector

## Our labs

- Human Performance Lab
- E4Sport

20 Novembre 2024 · Incontri / Numero 27

## 900 prove in Galleria del vento per il campione del mondo di ciclismo TOP GANNA

di Francesca Pierangeli



# Human Performance Lab (Lecco)

Functional assessments of healthy subjects, athletes,  
paralympic athletes

Collaboration with sports clubs and companies.

Research and teaching.



# Human Performance Lab (Lecco)

- Sport biomechanics
- Perturbations on human balance and locomotion
- Athlete-equipment interaction
- Athletic and motor-cognitive performance
- Sports scenario simulations



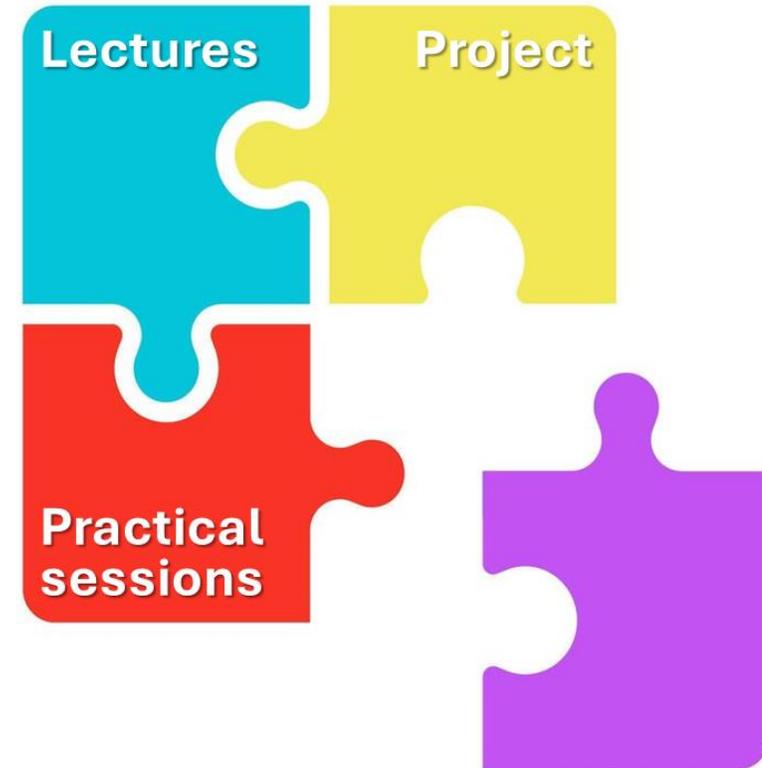


# The course of Sport Engineering and Human Performance

Human Performance Lab – Via Previati 1C, Lecco (LC)

# Aim

To transmit complete and up-to-date skills on technological innovation applied to sport with a practical and experiential approach



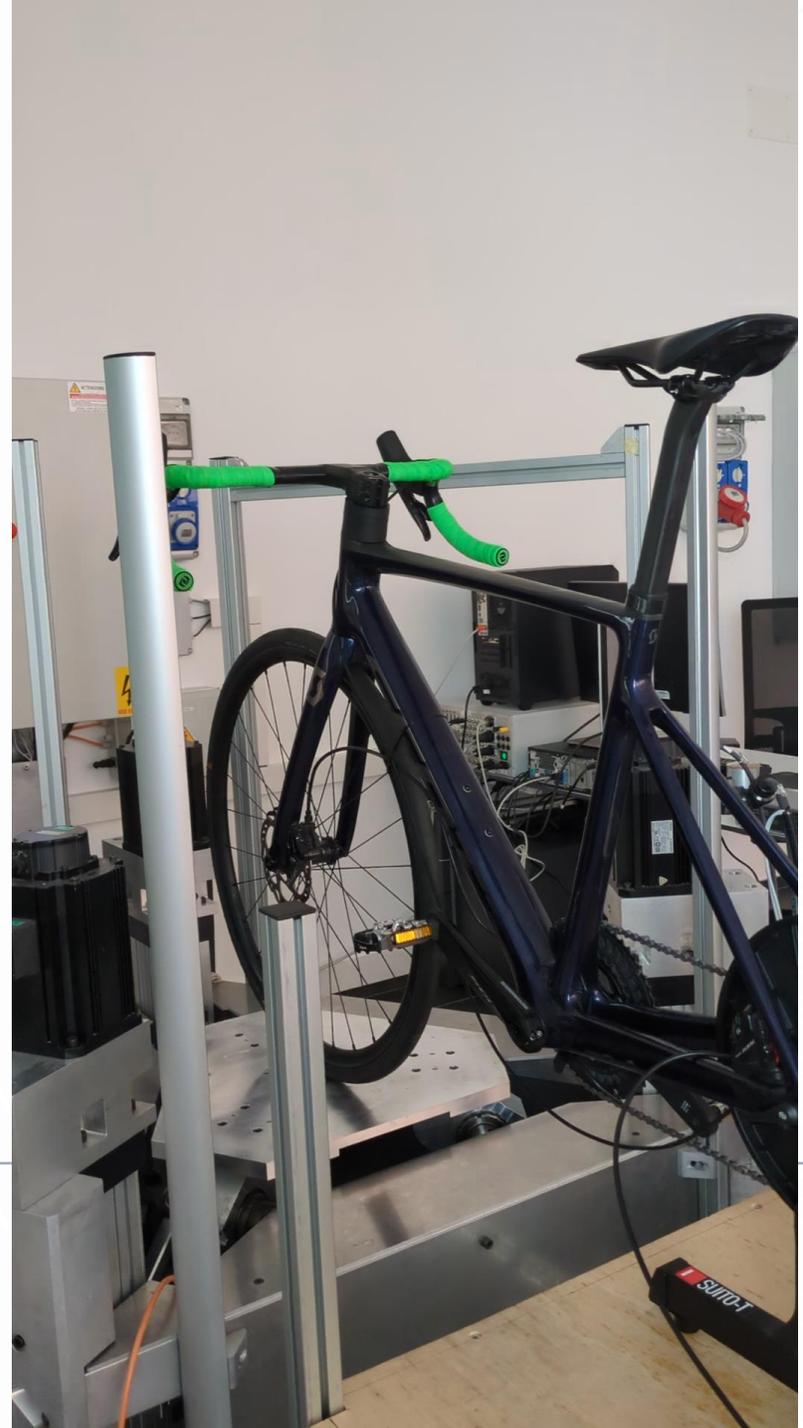
# Topics

- **Equipment:** from the design to the athlete-equipment interaction
- **Motion analysis:** optoelectronic system, wearable sensors
- **Performance assessments:** cognitive domain, isometric strength, explosive force, metabolic parameters



# Practical sessions

Analysis of sports equipment under the influence of vibrations



# Practical sessions

Characterization of sports gestures through movement analysis



# Practical sessions

Athletes' functional evaluations, through motor-cognitive tests, isometric muscular force tests, jump tests on force plates, and body composition analysis



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