

# Data Acquisition and Control with LabView

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Venue and date: **Biblioteca “Lorenzo Poggi”, DESTEC, Polo A**

- **October 11, 2024, 14:45-18:45**
- **October 19, 2024, 14:45-18:45**

Data from all sensors are usually digitised and collected by computer. The basis of digitisation and data acquisition is necessary for a good experimental activity. Nevertheless, experimental apparatus may have some components that can be controlled or automated (electric valves, triggers, pumps...). A common choice is to use the software LabView software for both data acquisition and experiment control.

The course introduces the principles of digitisation, data acquisition and control. Different acquisition systems and communication protocols are presented. The LabView software is then introduced and the basics of programming explained. The steps to create and manage a LabView project are shown, together with examples and real applications.

Programme of the course:

- 1. 4 hours, October 11, 2024, 14:45-18:45**
  - a) Principles of digitalization
  - b) Current and voltage measurement
  - c) Acquisition systems
  - d) FPGA
  - e) Control (PID, PWM)
  - f) Introduction to LabView
  
- 2. 4 hours, October 18, 2024, 14:45-18:45**
  - g) Make a project in LabView Environment
  - h) Examples of acquisition and control