



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Laboratory of Physics I

2122-1-E2701Q059

---

#### Aims

Aim of the course is to give the basis of Experimental Physics through experiments of Mechanics and Thermodynamics and to learn statistics and error analysis.

#### Contents

The first part of the course is based on lectures on statistics: Analysis of experimental data, random and systematic errors, Distributions, Probability and confidence. The second part of the course is carried out in laboratory, by making basic Physics experiments

#### Detailed program

The first part of the course is based on lectures on statistics: Analysis of experimental data, random and systematic errors, Distributions, Probability and confidence.

The second part of the course is carried out in laboratory, by making the following basic physics experiments

1 DENSITY

2 BINOMIAL AND GAUSSIAN DISTRIBUTIONS

3 MOMENT OF DI INERTIA  
4 STANDING WAVES  
5 ELASTICITY  
6 RADIOACTIVE DECAY  
7 PENDULUM  
8 NEWTON'S LAW OF COOLING  
9 INERTIAL BALANCE  
10 POISSON DISTRIBUTION

## **Prerequisites**

None

## **Teaching form**

Lessons and activity in laboratory, in groups of two-three students each, managing experimental activities varying every day of presence.

## **Textbook and teaching resource**

J.R. Taylor, *Introduzione all'analisi degli errori*, ed. Zanichelli

Tutorial video (e-learning page of the course)

Laboratory notes (e-learning page of the course)

## **Semester**

Lessons: Novembre - December 2021

Laboratory activities: March-April 2022

## **Assessment method**

Final Oral exam: discussion on the experimental activity based on a detailed laboratory report

## **Office hours**

On request contacting the teacher: [m.martini@unimib.it](mailto:m.martini@unimib.it)

---