

# UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

## **SYLLABUS DEL CORSO**

## Laboratorio di Fisica 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 OFDI 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