



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Workshop in Physics and Physics Teaching

2425-3-G8501R017-G8501R052M

---

#### Course title

Between Earth and Sky

#### Topics and course structure

The laboratory offers a path of observational astronomy, during which observations, instruments and models are carried out, bringing out previous knowledge, hypotheses and discoveries first from the local point of view, then from the global point of view of the planet and finally from the external point of view of the planet. planet (of space). The topics are different and interdisciplinary: light and movement are the two great conceptual areas underlying the entire journey.

#### Objectives

With this teaching, with constant and participatory attendance at the lessons and the laboratory connected to the course, we intend to PROMOTE the following learning, in terms of:

\*Knowledge and understanding: apparent path of the sun and stars in the sky: description, representation and interpretation; orientation and cardinal points; vertical and horizontal; globo-local: what does the parallel globe allow us to discover? Physical variables linked to the sky and vision: dimensions, distances, light and matter interactions; relativity of movement; climatic bands and seasons.

\*Ability to relate differentiated knowledge and models

\*Ability to apply knowledge and models to daily life

## **Methodologies**

Observation of shadows and stars outdoors and through software and simulations; construction of instruments/models for recording the movements of the stars over time; measurement of significant quantities; modeling of motions, spatial and dimensional relationships, lighting, eclipses.

## **Online and offline teaching materials**

Laboratory handouts which also indicate all the websites used and the bibliography used

## **Programme and references**

Attending the laboratory does not require the study of specific texts but we strongly recommend reading the following texts:

- Franco Lorenzoni, Con il cielo negli occhi. Edizioni La Meridiana, 2009.  
? N. Lanciano, Strumenti per i giardini del cielo, ed Asterios, 2019 (riedizione di quella del 2002, edizioni Junior)  
? Lanciano et al., 2009, A scuola di miti e di scienza. Edizioni Junior

## **Assessment methods**

Approval is subject to attendance and participation in meetings. The laboratory does not include any final test although in the physics end-of-course exam a question will be asked relating to the astronomy part carried out during the laboratory.

## **Office hours**

If necessary, contact and make arrangements directly with the laboratory leaders via email

## **Programme validity**

2 years

## **Course tutors and assistants**

Monica Chiara Onida e Marco testa

## **Sustainable Development Goals**

REDUCED INEQUALITIES | SUSTAINABLE CITIES AND COMMUNITIES | CLIMATE ACTION | LIFE ON LAND

---