



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Geologia

2627-1-F7503Q014-F7503Q01403

---

#### Aims

**Knowledge and understanding.** At the end of the course the student will:

- Know the key topics of Geology;
- Be able to make logical connections between the topics;
- Be able to identify the essential concepts and the modes of reasoning.

**Learning ability.** At the end of the course the student will be able to consult the reference literature on the topics covered. He/she will also be able to independently design a teaching/communication lesson on the key topics of Geology

**Autonomy of judgement.** At the end of the course the student will be able to evaluate the scientific correctness of the information he/she wants to communicate by examining in particular the sources from which he/she has obtained the information.

**Communication skills.** At the end of the course the student will be able to:

- Describe the topics studied in an appropriate way using the correct specific terminology;
- Use examples and metaphors to explain the most difficult concepts of the subject;
- Use new technologies to communicate the topics of Geology in a clear and effective way

#### Contents

- The “deep” time. Relative and absolute ages
- Rock cycle and the geological time
- Plate tectonics theory.

- Exogenous processes
- Hydrological cycle
- Rivers as modeling agents
- Interactions between water and human activity
- Drinking water

## Detailed program

The module will deal with the main topics of Geology, focusing more on the contents than on teaching methods for knowledge transfer.

In particular, the following will be taken into consideration:

- The “deep” time. Relative and absolute ages. Plate tectonics theory. Divergent plaque margin (rifting), transform (lateral movement), and convergent (subduction). The geological conformation of Italy and the seismic and volcanic risk.
- The main exogenous processes that shape the surface of the earth, the key elements of the hydrological cycle, the relationship between groundwater and surface waters and their interactions with human activities.

The laboratory activities include practical experiences and group discussion work on proposed topics aimed at developing critical, logical and conceptual links (cartography laboratory with Google Earth, which will provide students with the ability to orient themselves and recognize geological aspects, laboratory on the territory to contextualize theoretical geology to the experience of students, classroom activities to estimate the infiltration into the subsoil, simulation of a data collection system on the daily use of water in our homes).

## Prerequisites

The knowledge of a basic Geology will be considered acquired and bibliographic indications provided for a possible integration or review of the contents.

## Teaching form

- 8 lessons, 2-hour lessons that alternate delivered didactics and interactive teaching
- 7 meeting of 2-hour exercises with interactive teaching methods (group work and discussion, using Moodle tools(quizzes, wooclap, shared whiteboard, shared files, tools such as Google Earth). The exercises will focus on the Theory of Plate Tectonics, the calculation of the return time of floods and the development of a data collection system, monitoring the uses of water at home, experiments to estimate the infiltration capacity of the subsoil.
- 6 hours of excursion in the downtown of Milan with interactive educational activity entitled *the stones of my city*. The exercise will consist of recognizing the different rocks of Milan's historic buildings (e.g. churches or monuments) linking the geology of the place to its history.

## **Textbook and teaching resource**

Slides of the frontal lessons, additional material discussed in the classroom.

During the course of the lessons will be indicated and provided any additional educational materials (articles and slides) that can supplement the preparation of the exam. A site will also be indicated with possible geology videos, also in addition to what was seen and discussed in classroom.

## **Semester**

Second semester

## **Assessment method**

The verification consists in the presentation of a didactic project, to be delivered a few days before the session, which will be displayed during the exam.

## **Office hours**

By appointment via email

## **Sustainable Development Goals**

CLEAN WATER AND SANITATION | CLIMATE ACTION

---