



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Geocronologia e Archeometria

2122-1-F7401Q052

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#### Aims

Introducing the basic concepts of geochronology and isotope geochemistry and their applications to geological and archeological research.

#### Contents

The course will deal with the main dating methods relevant for geological and archeological research.

Isotopic geochronology: radioactive decay. The age equation. Rb-Sr, Sm-Nd, U-Pb, K-Ar and  $^{39}\text{Ar}$ - $^{40}\text{Ar}$  methods. Statistical and systematic errors. Principles of mass spectrometry: TIMS, SIMS, PIMMS. Isotope geochemistry of Sr, Nd, Pb. Applications of isotope geochemistry to studies on provenance of sediments and archeological objects. Applications of geochemistry to the mitigation of volcanic risk.

Quaternary geochronology: radiocarbon, uranium series disequilibrium, fission tracks, thermoluminescence, dendrochronology. Other non-isotopic direct and indirect dating methods. Dating hominid evolution.

Stable isotope fractionation, isotope thermometry and paleoclimatological proxies: deuterium, carbon, oxygen, heavy elements.

Extinct and cosmogenic radionuclides.

The course will be given in English; it can be given in Italian on unanimous demand.

## **Detailed program**

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## **Prerequisites**

Chemistry, physics, geochemistry, geophysics (suggested)

## **Teaching form**

Frontal lecture, practicals

## **Textbook and teaching resource**

Lecture notes

M. Walker - Quaternary dating methods - Wiley

## **Semester**

march-june 2022

## **Assessment method**

Oral examination at the end of the course

## **Office hours**

wednesdays 11-13

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