

# UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

# Geocronologia e Archeometria

2021-2-F7401Q090

#### **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 39Ar-40Ar 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.

#### **Detailed program**

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# **Prerequisites**

Chemistry, physics, geochemistry, geophysics (suggested)

# **Teaching form**

Frontal lecture, practicals

# Textbook and teaching resource

Lecture notes

#### Semester

march-june 2018

#### **Assessment method**

oral exam

# Office hours

wednesdays 11-13