UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Sedimentology

2021-2-E3401Q043

Aims

Understanding the different transport processes and the sedimentation. Meaning of the sediments and sedimentary rocks and the related sedimentary environments. Meaning of the sedimentary structures. Sedimentological interpretation of a sedimentary succession (Facies analysis). The evolution of the Southalpine sedimentary succession.

Contents

Facies and Walther's Law. Sediments and sedimentary rocks. Composition, classification, and diagenesis of sedimentary rocks. Sedimentary structures. Facies and depositional environments. Southalpine sedimentary succession.

Detailed program

Facies and Walther's Law. Sedimentation: processes and products. Sedimentary rock types (carbonates and terrigenous). Constituents, textures, cements and porosities of sandstone and carbonate rocks. Diagenesis. Sediment transport: bed load and suspended load. Traction. Bedding and bedforms. Sediment gravity flows. Interpretation of sedimentary structures. Facies analysis. Alluvial fan. Fluvial and deltaic environments. Coastal and shelf environments. Continental slope and rise environments. Turbiditic corrent and turbidite. Carbonate/evaporite coastal succession. Anoxic basins. Southalpine sedimentary succession.

Prerequisites

Principles of Geology. Plate tectonics. Stratigraphical principles and methods (e.g. geological time scale,

Stenone' law). Sedimentary, magmatic and metamorphic rocks.

Geomorphology. Surface processes and the way they interact to create the different landforms. Weathering, slope processes, soil erosion, fluvial and glacial processes. Human impact on natural environmental.

Teaching form

The lectures will be "online" following the normal teaching hours of the lessons. In addition, the lectures will be recorded.

The exercises will focus on case histories with group work in the classroom according to the methods that will be communicated to you.

The field work will be on the Sudalpine sedimentary succession. Students will be divided into groups following the current legislation for the COVID 19 epidemic.

Textbook and teaching resource

Booklist.

- **Required text**: Sedimentologia vol.3 Ambienti sedimentari e facies di Ricci Lucchi Franco. Data di Pubblicazione: 1980; Pagine: 548
- Slides and scientific articles.

Semester

Semester 1.

Assessment method

FINAL EXAM (written exam).

During the Covid-19 emergency period, written exams will be online. A link will be provided on the e-learning page of the course for students .

Office hours

Wednesday from 14.30 to 17.30 (to schedule an appointment: giovanni.vezzoli@unimib.it)