UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Active Tectonics and Volcanotectonics

2425-1-F7401Q085

Aims

Explaining methods of geological-structural analysis for the recognition of recent and active tectonic deformations, and for the analysis of the structures in volcanic areas.

Contents

The general objectives comprehend the preparation of students in order to carry out geological-structural analyses applied to the recognition of recent and active tectonic deformations. In the second part of the course, students will analyse the structures in volcanic areas in order to distinguish those produced by tectonic forces from those caused by magmatic forces and gravity forces.

Detailed program

Active tectonics: geology of earthquakes;
geologically active and seismogenetic structures; geological-structural and morphostructural analyses for recognizing active faults and folds;
measure of the offset along active faults;
dislocation rate;
relationships between surface rupture length, magnitude, dislocation;
influence of the topography on the dislocations;
measures of stress orientation;
palaeoseismologic techniques;
evaluation of geological hazard; examples of study.
Volcanotectonics: deformations of volcanic areas;

calderas; lateral collapses;
tectonic stress and volcano morphometry;
rheology of lava flows and pyroclastic deposits and correlated structures;
volcanism in areas of transcurrent, normal, and reverse faulting;
subvolcanic bodies;
contribution for the evaluation of the geological hazard; examples of study.

Prerequisites

Base knowledge of geology, structural geology and geomorphology.

Teaching form

21 two-hour lectures, in person, Delivered Didactics

Textbook and teaching resource

Tibaldi A., and F. Pasquarè-Mariotto, 2015. Structural Geology of Active Tectonic Areas and Volcanic Regions. Lulu Press, 211 pages (available at: www.Lulu.com).

Semester

First semester

Assessment method

Written exam based on three open questions. On going tests are not present.
Evaluation of the student's level of learning based on the completeness and correctness of the answers, and grade expressed in out of thirty.

Office hours

By appointment fixed by email.

Sustainable Development Goals