



Visiting Professor Program Academic Year 2023/2024

TEACHING COMMITMENT: 16 hours

COURSE TITLE

Structural and Applied Geology and the Proterozoic orogens

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Earth Sciences

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

Fracture and fracturing with application.

Shear zones; kinematic indicators at the microscale and vorticity of the flow.

Classification of fault rocks at the meso- and micro-scale.

Deformation and kinematics of the flow in shear zones in different geodynamic setting.

Shear zones in collisional orogens and their tectonic meaning.

LEARNING OBJECTIVES

The course provides in-depth knowledge of the geometry and kinematics of the ductile and brittle structures at meso-and microscale.

Knowledge of the main mechanisms of formation of faults, brittle and ductile shear zones ;

Knowledge of structural discontinuities and their use application to the stability of the rock slope.

Topics addressed in this course are integral part in the educational targets related to the Master's degree, specifically for the different aspects of the applied structural geology. The focus is paid on the wide spectrum of techniques, typical of structural geology, which are fundamental tools for the description and reconstruction of geological and geological-structural models.

TUTORSHIP ACTIVITIES

N/A

LAB ACTIVITIES

N/A

OTHER ACTIVITIES BESIDES THE COURSE

N/A

ADDITIONAL COURSE

COURSE TITLE

Orogenesis

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Earth Sciences

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

Knowledge of the architecture of Large hot orogens. Examples of the geodynamic setting metamorphic and tectonic evolution of the Paleozoic and Proterozoic orogens in South America. Knowledge of the main mechanisms of exhumation of deep seated metamorphic units..

LEARNING OBJECTIVES

The course aims at describing the general framework of tectonic plates giving rise to Paleozoic and Proterozoic orogens in South America and their tectonic and metamorphic evolution through time across the whole Wilson cycle with special focus on the mechanism of exhumation of deep seated metamorphic rocks.

TUTORSHIP ACTIVITIES

N/D

LAB ACTIVITIES

N/D

OTHER ACTIVITIES BESIDES THE COURSE

N/D

VISITING PROFESSOR PROFILE

Expert in structural geology, tectonics and metamorphic geology. Competences on the global tectonics, as well as, on the regional geology Paleozoic and Proterozoic orogens, with a particular focus on exhumation mechanisms of deep seated metamorphic rocks. The Visiting Professor should also possess experience in multidisciplinary approach to solve tectonic problems. It will be greatly appreciated that the Visiting Professor adds his expertise in the reconstruction of the geological and tectono-metamorphic evolution of collisional orogens.

CONTACT REFERENT

Rodolfo Carosi
rodolfo.carosi@unito.it