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TM17_DIP_TER

Teach Mob – Visiting Professors ***Academic year 2015/2016***

2nd term
COURSE TITLE Applied Geomorphology and Geothematic Mapping
Scientific area Earth Sciences
Department of Geological Sciences
Language used to teach ENGLISH
Course summary The course incorporates the basic concepts of Geomorphology and defines and analyzes the contributions of Geomatics (discipline of gathering, storing, processing, and delivering georeferenced data by means of informatics systems) to the study of landforms and geomorphic processes and their relationships with human activities. The principles of geomorphology and environmental dynamics are applied to the collection, planning and land management. In particular, the relationships between climate change and natural instability of the mountain and foothill areas are analysed. The geomorphological mapping is analyzed in its theoretical assumptions, in traditional methods and innovative tools, such as digital photogrammetry, virtual globes and mobile-GIS. In particular, the applications of geographic information systems and Geodatabase for geomorphological research are analysed.
Learning objectives Knowledge of the contributions of Geomorphology and Geothematic mapping to the analysis of the dynamics of the geological environment and the study of territory. Application of classical methods for geothematic mapping and Geographic Information Systems (GIS) and of innovative field and remote sensing techniques. Tests of GIS software and tools for the analysis of landforms and surface processes (glacial, torrents, slope instabilities) in the alpine and piedmont areas.
Tutorship activities Act as co-leader of field trips to selected site for analysing geohazards case studies in NW-Italy. Provide guidance to students for conducting mapping activities supported by GPS and mobile-GIS tools. Assist students in collaborative management of geomorphological data, assessment and management of geohazards and risks.
Lab activities Laboratory exercises and field analysis of case studies in NW Italy. Use of geomatics tools for the collection and processing of data. Use of software for digital photogrammetry and geomorphological mapping Realization of geothematic maps with GPS support and tools for mobile-GIS.
Other activities besides the course: i.e. seminars and conferences addressed to PhD students and research fellows, dissemination conferences

Some seminar and other field and laboratory activities on slope instabilities of the European Alps will be offered to PhD students and Faculty members as an output of cooperative research programs conducted in the last few years by DST-UniTO and International partners.

Visiting Professor Profile

Professor in Earth Sciences with research and didactic experiences in at least 3 of the following scientific topics: Geological mapping, Geomorphology, Physical Geography, Quaternary Geology, Natural Hazards. Specialized skills and expertise requested: knowledge on earth surface processes, particularly those of mountain regions, including glacial and fluvial environments; field and laboratory methodologies for research on natural hazards and risks, particularly those related to instability phenomena of the above mentioned environments. Use of classical and innovative techniques for geothematic mapping. Theoretical approach and practical application of geomorphology; ITC techniques and applications for natural hazards studies and disaster risk reduction. Preferences to participants in international partnerships (master, exchange programs and doctoral Schools) on Earth Sciences and Natural Hazards.

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