UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

UAV/ROV and Immersive Virtual Reality for Research in Earth Sciences

2627-1-124R019

Title

UAV/ROV and Immersive Virtual Reality for Research in Earth Sciences

Teacher(s)

Fabio L. Bonali ; Luca Fallati

Language

English

Short description

The course is focused on introducing innovative tools to study, at very high detail, areas subjected to tectonic deformation, volcanic eruptions and climate changes, both considering terrestrial and marine environments. The students will learn how to: i) build up high-resolution Digital Surface/Bathymetric Models, Orthomosaic and 3D virtual outcrops in onshore and offshore settings; ii) reference and scale the high-resolution models using different data input (e.g. field-collected Ground Control Points, topographic maps, other data); iii) collect data on derived models also using ad-hoc designed Immersive Virtual Reality (IVR) tools (https://geovires.unimib.it/); vi) conduct

geological studies, produce and share the results through presentations. The Uncrewed Autonomous Vehicle (UAV) survey will be performed in collaboration with Gemma Lab (https://www.disat.unimib.it/en/research/facilities/gemma-lab).

A final evaluation of the course is expected

CFU / Hours

2 CFU - 16 Hours (Lecture - Field Activity)

Teaching period

I semester

Sustainable Development Goals