UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Open-Source Software for Spatial Data Analysis

2627-1-124R014

Title

Open source software for spatial data analysis

Teacher(s)

Micol Rossini ; Biagio Di Mauro

Language

English

Short description

The aim of the course is to provide expertise in the use of open source software for data analysis. This will be done:

- explaining basic principles on digital images and statistical exploration;

- giving hands-on practice with tools and methods for satellite data exploitation;

- stimulating the exploitation of these open tools and methods in individual student research projects.

Examples of the use of open source software across a wide variety of disciplines, covering topics such as glacier dynamics, landslide mapping, volcanic activity, global forest change, inland water monitoring, urban mapping, post fire recovery, flood mapping, will be provided.

Hands-on exercises will be developed using:

- Google Earth Engine: a cloud-based platform for planetary-scale geospatial analysis.

- QGIS for remote sensing applications.

- ESA Sentinel Application Platform (SNAP).

Final evaluation: The final assessment of the course will consist of a brief presentation, during which the student's theoretical and practical understanding of the topics covered in lectures and labs will be assessed. The presentation will focus on the analysis of a geological/environmental case study, with the aim of evaluating the student's ability to apply open-source software and remote sensing techniques in the geological/environmental field.

CFU / Hours

2 CFU - 16 Hours (Lecture)

Teaching period

II semester

Sustainable Development Goals