

# Evaluation of natural hazards through GIS and digital data

*Giovanni Forte, Gerardo Carpentieri*

**Credits:** 2 CFU

**Number of hours:** 18

**Date:** 9, 14, 15, 16, 17, 20 January 2025

## Objectives:

The course represents an introduction to natural hazards and the disaster risk concept in urban and territorial settings. It aims to provide the basic concepts for analysing, studying and managing natural hazards in Geographic Information Systems (GIS). Students will learn how geo-information and geomatics tools are uniquely suited to study, monitor, and quantify several aspects of spatial data, and GIS plays an important role in it for evaluating the impacts. Finally, the students will have hands-on experience in using software tools for handling and processing geospatial data aimed at developing practical applications on some phenomena such as earthquakes and landslides.

| Date       | Time          | Room                                    | Topic / Teacher  |
|------------|---------------|---|--|
| January 9  | 13.30 – 16.30 | 2 <sup>nd</sup> floor<br>N (Tecchio)    | Introduction to GIS - The use of GIS to support urban and territorial governance process<br><i>Gerardo Carpentieri</i>         |
| January 14 | 13.30 – 16.30 | 2 <sup>nd</sup> floor<br>N (Tecchio)    | - The classification and use of data in GIS; Data types; - Data and attributes in GIS.<br><i>Gerardo Carpentieri</i>           |
| January 15 | 10.00 – 13.00 | 5 <sup>th</sup> floor W1<br>(Tecchio)   | An overview of the natural hazards in Campania<br><i>Giovanni Forte</i>  |
| January 16 | 13.30 – 16.30 | 2 <sup>nd</sup> floor<br>N (Tecchio)    | The use of spatial data in GIS - Data production; Spatial data analysis; Creating thematic maps.<br><i>Gerardo Carpentieri</i> |
| January 17 | 10.00 – 13.00 | 5 <sup>th</sup> floor W1<br>(Tecchio)   | Application: Assessment of susceptibility to trigger flowslides<br><i>Giovanni Forte</i>                                       |
| January 20 | 10.00 – 13.00 | 5 <sup>th</sup> floor W1<br>1 (Tecchio) | Application: Generation of seismic scenario maps<br><i>Giovanni Forte</i>  |