UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Hydrogeological Emergencies Management

2627-1-F7503Q003-F7503Q00302

Aims

The primary objective is to provide the methodological knowledge and comprehension skills necessary for risk assessment and management with particular reference to drogeological risk.

The risk management cycle will be analysed in all its phases: from prevention and mitigation activities to the warning system. In this context, the Civil Protection system will be addressed in both the national and regional regulatory frameworks, with particular attention to the aspects of forecasting, prevention, rescue and overcoming emergencies.

The exercises are aimed at providing expertise in the use of Geographic Information Systems and will be conducted by implementing thematic mapping of emergency planning.

Contents

Program:

- Introduction to natural hazards
- geological event concept
- Concept of risk applied to natural processes
- Risk and emergency management
- Emergency planning
- Flood hazard
- Landslide hazard
- Mitigation and monitoring
- Insurance aspects

Detailed program

1. Introduction to natural hazards
   * state of instability of the Italian territory
   * state of the environment
2. concept of geological event
3. Concept of risk applied to natural processes
    - Hazard, Vulnerability and Value
4. Risk management and emergency management
    - Risk management cycle
    - Regulatory situation
    - Civil Protection Code
5. Emergency planning
    - Civil protection plans (contents of the plan, methods of implementation according to scale, regional, provincial, municipal).
    - relationship between spatial planning and emergency planning (CLE, emergency boundary condition, seismic microzonation)
    - warning system
6. Flood hazard
    - from catchment area to hydrometric thresholds
        - main Italian rainfall regimes,
        - river basin concept, morphological characteristics of river basins and parameters to represent them
        - hydrological characteristics of natural watercourses: hydrological regime
        - flow and flow transfer (flow models), regulation of the outflow of a natural watercourse;
7. Landslide hazard
8. Mitigation and monitoring works
9. Insurance aspects applied to natural hazards

Laboratory
Use of GIS for preparing the cartographic section of a civil protection plan

Prerequisites

nothing

Teaching form

- Lessons tutorials, 4 credits - 32 hours - Delivered Didactics

- Laboratory experiences, LiBaaS, 2 credits - 20 hours - Interactive Teaching

Textbook and teaching resource

Didactic material provided by the teacher and available on UNIMIB elearning website

Semester

second semester

Assessment method

Written test, 10 questions; 8 multiple choice 2 open-ended
PROJECT WORK, Development of a project; original idea or analysis of an existing case (e.g. municipal civil protection plan).

The final evaluation of the module, will take into account the grade of the written test and the evaluation of the project work

Office hours

To be agreed by email

Sustainable Development Goals

SUSTAINABLE CITIES AND COMMUNITIES | CLIMATE ACTION | LIFE ON LAND