UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Laboratory of Advanced Numerical Modelling in Earth Sciences

**2223-2-F7401Q115**

## Module description

The student must learn some:

1. basic algorithms
   (numerical solution of differential equations of the first
   and second order with geological example),
   various numerical solution arguments (variables from to
   from year to year) as Fourier spatial and temporal transforms,
   nonlinear equations and chaos, stochastic resonance.

2. In addition to algorithms to be built from scratch,
   examples of programs already implemented are examined
   and possibly modifiable, such as templates
   of debris flows, too complex to be
   writable from scratch during the course

3. Existing and non-modifiable software

4. Development of a research project based on numerical simulation

## Learning goals

## General goal

## Specific skills and competences

## Sustainable Development Goals of the 2030 UN Agenda

## Breakdown of meetings

2 hours per lesson

## Number of participants

3

## Language used in meetings

English and Italian

## Delivery period of the module

second semester

## Methods of assessing the outcomes of the learning process

detailed final report of a specific project

## Department of affiliation of the teacher

DISAT

## Sustainable Development Goals

QUALITY EDUCATION