UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Time Series Analysis of Environmental

2627-1-124R016

Title

Time Series Analysis of Environmental Data

Teacher(s)

Tullia Bonomi and Chiara Zanotti

Language

Italian/English

Short description

The aim of the course is to learn the fundamentals of time series analysis for environmental data applications, with a specific focus on water resources quality and availability.
Practical exercises will be carried out in the R environment on groundwater, surface water, and meteorological data.

Lectures and training will cover the main aspects of environmental time series data management, acquisition, visualization, analysis, and modeling:

- Types of environmental data
- R basics
- Explore and visualize time series data, descriptive statistics
- Trend analysis
- Auto and cross-correlation
- Time series decomposition
- Time series cluster analysis

Final Evaluation: the final assessment consists on the application of the learned techniques to a dataset chosen by the participants (personal or open-source dataset)

CFU / Hours

2 CFU - 20 Hours
Chiara Zanotti 16 hours lectures
Tullia Bonomi 4 hours training

Teaching period

II semester

Sustainable Development Goals

QUALITY EDUCATION | CLEAN WATER AND SANITATION | INDUSTRY, INNOVATION AND INFRASTRUCTURE