



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Ocean Monitoring and Data Analysis

2122-2-F7502Q042

Aims

Provide information on available oceanographic databases and how their data are gathered and stored. _____
_ Show how data can be visualised and analysed to answer to specific questions, using statistical methods and models, with Matlab and/or Python software.

Contents

Ocean observing systems, including remote sensing, Eulerian stations, drifters and ship measurements. Ocean databases. Spatio-temporal data analysis. Modeling tools. Visualisation tools.

Detailed program

Seasonal variations, removal of seasonal cycle, data detrending and filtering.

Correlation and covariance. Composites.

Statistical significance.

Netcdf data format. TEOS-10 software for seawater properties.

Prerequisites

Physics of the Sea

Teaching form

Lectures and practicum in computer lab

During the Covid-19 emergency, lectures and practicum will be live from remote, with the use of Virtual Machines.

Textbook and teaching resource

Mathworks tutorials: MATLAB Fundamentals, MATLAB Programming Techniques, MATLAB for Data processing and visualisation (available online).

Slides and booklet from the instructors.

Semester

First

Assessment method

- Written examination: short report on an individual ocean data analysis project (10 pages upper limit)
- Oral examination: discussion of topics covered during class and of the individual data analysis project

During the COVID-19 emergency oral exams will be online, through the Webex platform. A public link will be provided on the elearning webpage.

Office hours

Contact the instructor
