



Visiting Professor Program Academic Year 2023/2024

TEACHING COMMITMENT: 12 hours

COURSE TITLE

Micropaleontological Application to Environmental Monitoring

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Paleontology and paleoecology

LANGUAGE USED TO TEACH

Italian, English

COURSE SUMMARY

This course shares the general goal of providing a detailed knowledge of the systemic analysis of the natural environment.

The course aims to present the main micropaleontological applications, aimed to the monitoring of the marine environment quality. For this purpose, the most relevant groups of microfossils are introduced: Foraminifera, Ostracoda, Pollen, Dinoflagellates, Coccolithoforids and Diatoms. For each group, taxonomical (morphological), biological and ecological characters, together with the basic (palaeo)oceanographic knowledges, are focused on: 1) the use environmental quality indexes useful for the monitoring of eutrophication, pollution, deoxygenation and harmful algal blooms; 2) the understanding of recent climatic changes and their relation with the oceanic system.

LEARNING OBJECTIVES

Aims and application of Environmental Micropaleontology.

Notion of oceanography, such as general circulation, relationship between atmosphere, biosphere and hydrosphere, main biogeochemical cycles and oceanic productivity.

Basic physical stratigraphic concepts.

Taxonomic criteria used to describe the microfossil groups.

Relationship between ecological preferences of the microfossil groups and environmental monitoring.

Recognize at a generic level the most common planktic and benthic foraminifer specimens, particularly those recent forms used in environmental monitoring.

Recognize the paleoenvironment represented by a micropaleontological assemblage.

Based on the type of environmental issue, identify the correct group of microfossils to deal with and related sample preparation.

Read and interpret environmental quality indexes based on the use of microfossils.

TUTORSHIP ACTIVITIES

N/A

LAB ACTIVITIES

Observations of fossil and modern rest of biomineralized organism at the optical microscope.

OTHER ACTIVITIES BESIDES THE COURSE

N/A

VISITING PROFESSOR PROFILE

The candidate should have experience in micropaleontology, with particular experience on marine diatoms and coccolithophores, their taxonomy and application in the field of paleoceanography and environmental monitoring.

CONTACT REFERENT

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