UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Analytical Chemistry Environmental

2122-3-E3201Q083

Aims

The main objective of the course is to provide students with both theoretical and manual knowledge for assessing the chemical quality of different environmental compartments. In addition to knowledge of the techniques, critical skills will be developed in judging the reliability of the experimental data also in terms of accuracy and precision. At the end of the course, the student must be able to critically read an analytical method and be able to apply it. He must prove that he understood the various passages. The student will have acquired adequate scientific terminology and will be able to present the topics of the course with language properties.

Contents

Chemical analyses on environmental matrices.

Detailed program

The course includes an introductory part on the meaning of the chosen descriptors and their experimental determination.

The experiences concern some analyses of water, soil and waste matrices.

In detail:

- Water matrix: hardness, dissolved oxygen, Kubel oxidation, phosphorus determination as orthophosphate;

- Waste matrix: commodity analysis, humidity, volatile solids, calorific value;
- Soil matrix: extraction, clean-up and analysis of polycyclic aromatic hydrocarbons.

Prerequisites

General, organic and analytical chemistry.

Teaching form

- Lessons, 2 credits

- Laboratory, 4 credits

Textbook and teaching resource

D.C. Harris “Chimica Analitica Quantitativa”, Zanichelli or Holler, Crouch: Fondamenti di Chimica Analitica di Skoog & West - III Edizione. EdiSES

F.W. Fifield, P.J. Haines “Environmental Analytical Chemistry, Blackie Academic

Semester

Second semester

Assessment method

The assessment of learning takes place with a practice activity during the course and an oral examination.

The practical activity consists of a laboratory test preceded by solving some exercises.

The oral examination involves the deepening of the chemical knowledge of the experiments carried out in the laboratory.

In the final mark, the practical activity weighs 70%, 20% the oral exam and the remaining 10% the laboratory behavior.

For admission to the exam it is necessary to have attended at least 8 of the 10 laboratory experiences.

Mark range from 18 to 30/30

Office hours

Only by appointment.