

# Environmental Analytical Chemistry

## Synopsis

Integrative view of the analytical methodologies in environmental issues. We will emphasize the sampling strategies, both active and passive methodologies, and the interpretation of analytical data. The concepts of bioaccumulation and bioavailability will be introduced.

## Aims

To provide an integrative view of the analytical methodologies, in environmental issues.

## Objectives

At the end of this Unit, you should:

1. Understand the basic processes of an analytical method
2. Be able to design efficiently a sampling procedure
3. Understand the chemical outputs of the analytical results
4. Understand the bioaccumulation and bioavailability of contaminants in the trophic chain.

## Key skills acquired

At the end of this Unit, you should understand:

1. The analytical approach to environmental issues
2. Good analytical practices

## Syllabus

Topics covered include:

- Basics on environmental analytical chemistry
- The analytical procedure
- Sampling techniques
- The fate and the distribution of contaminants
- Bioaccumulation and bioavailability

## Learning & Teaching

• Lectures: 20 hr

• Seminars (for case studies) : 6 hr

• Laboratory work: 8 hr

• Tutorials (exercises and presentations): 6 hr

Teaching Staff : N Etxebarria (Coord.), A Vallejo

Semester: 2

Timetable slot: To be advised

ECTS:4

Level: Optional

## Bibliography

- C. Zhang. 2007. Fundamentals of environmental sampling and analysis, John Wiley & Sons, New Jersey, USA.
- M. Radojevic, V. N. Bashkin. 2006. Practical environmental analysis. RSC Publ. Cambridge, UK
- J.R. Dean. 2007. Bioavailability, bioaccessibility and mobility of environmental contaminants, John Wiley & Sons, Chichester, UK.

## Assessment

- Written theory examination (40%)
- Laboratory work and report (20%)
- Case study and oral presentation (40%)

## Course Evaluation

By completion of University Unit Evaluation Questionnaire by students, annual assessment by Unit Coordinator