

TOXICOLOGY - ECOTOXICOLOGY

LEVEL: MASTER 1

PERIOD: SEMESTER 1

LANGUAGE: EN

ECTS: 6

TEACHER/COORDINATOR: BERTRAND POURRUT



1-Main objectives

- › Understand the fate of pollutants in biotic matrices (bacteria, plants, animals); Get the basis on toxicology and ecotoxicology; Integrate this knowledge in ecosystems.
- › Understand and use results from exposure and bioaccumulation experiments; results from ecotoxicological experiments with non-standard test species; results on the effects of chemicals on food-web.

2-Skills developed

- › design in vivo bioassays to assess effects on behaviour of organisms;
- › interpret the results of chemical fate and ecological models;
- › interpret data from microcosm and mesocosm experiments;
- › perform an advanced data analysis on chemical and biological monitoring data;
- › perform advanced exposure, effect and risk assessments of chemicals in ecosystems

3-General content

This course will first focus on the fate of toxic compounds and their effects on animals and plants from single individuals to populations and ecosystems. It is organized in lectures dealing with the:

- › main exposure routes (inhalation, ingestion, contact...);
- › mechanisms of bioconcentration, bioamplification and bioaccumulation;
- › main mechanisms of pollutant toxicity;
- › main mechanisms of pollutant detoxification;
- › effects on populations and ecosystems.

Then, a focus will be done on Environmental risk assessment. ERA is a process for estimating the likelihood or probability of an adverse outcome or event due to pressures or changes in environmental conditions resulting from human activities.

4- Evaluation

Individual written exam and oral group presentation with activities they will discover during on field visits. A written report will have to be realized.