

Contact

For any supplementary informations or questions related to application:

christine.cagnon@univ-pau.fr
florence.pannier@univ-pau.fr

MORE INFORMATION:

<http://formation.univ-pau.fr/m-csv-cmcei>

FURTHER INFORMATION:

<http://ri.univ-pau.fr>



Master's degree in Chemistry and Life sciences

Chemical and Microbiological Characterization for Environmental Issues



Admission requirements

ENGLISH LANGUAGE REQUIREMENTS

Minimum required score: CECRL B2 level in English

FRENCH LANGUAGE REQUIREMENTS

None but French language courses are included in the formation

ADMISSION REQUIREMENTS

Applicants must hold at least 4 years university level in chemistry and/or biology fields.

For students outside UPPA, integration in the second year is subjected to a selection on curricula with equivalent training level and with sufficient skills in biology, chemistry and environment (Molecular biology, bioinformatics, microbiology, environmental microbiology, ecotoxicology, biostatistics, field sampling and data processing, physico-chemistry, analytical chemistry, environment)

Applicants must be fluent in English, both in writing and speaking. An applicant whose native language is not English has to take a recognized international English test.

Conception: Direction de la communication - Impression: Centre de reprographie - UPPA - Février 2018



<http://formation.univ-pau.fr/m-csv-cmcei>

Detailed Program Facts

ENROLLMENT COSTS: normal cost of master degree at UPPA

STARTING IN: Applications are opened from April 2018 to June 2018 (application procedures depending on the origin of students, see below) link to the Apoflux application available in April on the master web site

PROGRAM INTENSITY: full time

DURATION: 1 year

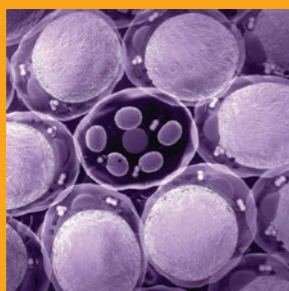
CREDITS: 60 ECTS

LANGUAGES: Fully taught in English

DELIVERY MODE: On site - Pau campus

Overview

Strongly increasing societal demand in the fields of Environment, Sustainable Development and Health, implies a synergy of advanced skills in Chemistry and Biology Sciences. In order to be able to effectively respond to this demand and to implement innovative solutions providing efficient answers to these requests, it is essential to perfectly understand the interaction of contaminants with living organisms and particularly their structures, properties, reactivities/activities in natural ecosystems. The “Chemical and Microbiological Characterization for Environmental Issues” (CMCEI) second year course of the Master in Chemistry and Life Sciences aims to train specialists with knowledge of the most recent advances in analytical chemistry, physico-chemistry, molecular biology and environmental microbiology.



Student Learning Outcomes

At the end of this program, the students in the “Chemical and microbiological Characterization for Environmental Issues” will be able to:

- Have an expertise in modern techniques in chemistry, molecular biology and microbiology
- Synthesize technical and research documentations to produce a technical study
- Plan and define a research or R&D project in analytical chemistry, molecular biology, microbiology or environmental survey
- Manage and carry out a project
- Manage field experiments to estimate the efficiency of chemical or biological methods for the protection of the ecosystems
- Interpret and validate results of chemical and biological analysis
- Produce summary report describing the experiments done, the applied methods used and the results obtained

Prospects for employment or further study

SECTORS:

- Environment
- Agribusiness
- Analytical chemistry
- Chemical industries
- Biotechnology

FIELDS:

- Research and Development
- Quality control

POSITIONS:

- Academic positions
- Researchers (public institutes or private companies)
- Research and Innovation Engineers
- PhD students

Program objectives

Entirely taught in English, the first semester is devoted to the knowledge of contaminants cycles and to the application of different techniques for the analysis of chemical elements and species of interest in various compartments of environment, the identification of microorganisms presenting a risk for environment or public health, but also quality assurance, critical evaluation of scientific publications and/or technical documentation.

The second semester consists of a 6-month research internship in the field of chemical and/or biological analysis applied to the environment in IPREM teams. The course gives a large place to learning by scenario projects, which enables the student to understand scientific approach of research as well as to put into practice various techniques and to deepen the reflection on his professional project.

MASTER 2

SEMESTER 1

Trace elements in the environment

- Trace elements biogeochemical cycles 2 ECTS
- Speciation concepts and analysis 2 ECTS

Advanced analytical chemistry

- Advanced separation techniques 2 ECTS
- Advanced spectrometric techniques
Coupling 2 ECTS
- Electrochemical sensors 2 ECTS
- Biological macromolecules characterization 2 ECTS
- Organic contaminants analysis 2 ECTS

Statistical tools, chemometrics and quality

- Analytical methods performances
evaluation 2 ECTS
- Quality Assurance for Analysis 2 ECTS
- Statistical tools project 4 ECTS

Microbiology and molecular biology for Environmental applications

- Microbial biotransformations and environmental applications: project 4 ECTS
- Microbial biotransformations and environmental applications : conferences 2 ECTS
- Molecular biology, Technological applications 6 ECTS

Research tools and applications

- Scientific papers and documentation critical evaluation 2 ECTS
- Environmental Project 2 ECTS

Language

- French as a Foreign language 2 ECTS

SEMESTER 2

- Internship in academic or industrial research project 30 ECTS