Environmental protection and sustainable development have become societal major issues. It is now also acknowledged that we must take advantage of our expertise in physico-chemistry and microbiology to identify, assess and manage the anthropogenic contamination of air, water, soils and waste. This program trains multidisciplinary managers who will be able to offer and implement solutions to solve environmental problems.

The Chemistry and Life Sciences program aims at training specialists able to analyze, manage and process environmental issues. The program offers common core courses which train students in both Chemistry and Life sciences as related to the environment.

The Chemistry and Life Sciences program trains managers in the field of environment. Job prospects are the following:

* Research engineer
* Environmental engineer
* Research and Innovation engineer

The Chemistry and Life Sciences is a 2-years course. It offers 4 “parcours”. The “parcours CMCEI” is opened only for the second year and all courses are taught in English.
Collège Sciences et Technologies pour l’Energie et l’Environnement (STEE)

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M2 Chemical and microbiological characterization for environmental issues (Master degree in microbiology, molecular biology and analytical chemistry for the environment)

Applications are now open here
APPLY

Applications will be closed on April 24th, 2020

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 in the most recent advances in analytical chemistry, physico-chemistry, molecular biology and environmental microbiology.

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 the
environment or public health, but also quality assurance, critical evaluation of scientific publications and/or technical documentation.

The second semester consists of a six-month research internship in the field of chemical and/or biological analysis applied to the environment in IPREM teams.

The course is mainly taught through project-based scenarios. This helps students understand scientific approach in research. It also makes them put into practice various techniques and reflect further on their professional project.

**SKILLS**

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

* Show 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

**ADDITIONAL INFORMATION**

**TRAINING CONTENT**

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**Language**

| French as a Foreign language | 2 |

**SEMESTER 2**

| Internship in an academic or industrial research project | 30 |

**ACCESS CONDITIONS**

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

The **M2 CMCEI** is open to students who have completed an M1 (4-year degree) in "Chemistry and Life sciences" (SAVE), "Molecular Biology and micro-biology for the environment" (BME) or an equivalent level.

For students outside the 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).

**English Language requirements**

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.

**Minimum required score:** CECRL B2 level in English

**French Language Requirements**

**None:** French language courses are included in the formation.

For any additional information or questions related to application, please contact:

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

**EXPENSES**

Concerning the registration fees, the ministerial decree of 19 April 2019 sets the annual amount for non-European students enrolling in a Master’s degree at €3770.

However, each French higher education institution has the possibility to partially exempt its students from these tuition fees.

For the year 2020-2021, the UPPA will apply this **partial exemption** to all non-EU students. Students benefiting from this partial exemption will pay an annual registration fee of **243** euros (2019_2020 price list as an indication)

**PROFESSIONAL INSERTION**

**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

**ORGANIZATIONAL UNIT**

Etablissement

**PLACES**

Pau

**PERSON IN CHARGE**

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