Detailed Program Facts

ACADEMIC YEAR : Our full academic year runs from September to September

APPLICATION DEADLINE : Applications are open from November to April

HOW TO APPLY : The application documents must be uploaded on the website : **http://www.univ-pau.fr/en/apply-now**

PROGRAM INTENSITY: Full-time

DURATION: 1 year

CREDITS: 60 ECTS

LANGUAGE: Fully taught in English

LEVEL OBTAINED: Master

HEAD OF THE MASTER PROGRAM: Professor Cédric TENTELIER

LOCATION: College of Sciences and Technology for Energy and Environment on the Basque coast campus (Anglet, France)

Admission requirements

ENGLISH LANGUAGE REQUIREMENTS
Minimum required score: CECRL B2 level in English

ACADEMIC REQUIREMENTS
This formation is open to students who have completed a master degree, or who have validated at least 4 years of academic cursus in Ecology and want to develop skills in evolutionary ecology of aquatic systems.

Admission is based after submission of the following application documents: a cover letter describing the student's motivation and career plan, the transcript of records and the consistency between the academic curriculum and project (former academic subjects and internships).

The applicant must also:
- have scientific knowledge in the field of aquatic environment ecology.
- master the key concepts of population genetics and dynamics, functional ecology, ecotoxicology and their formalisation
- have a taste for mathematical and statistical modelling tools and concepts.

ADMISSION 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.

Contact

For any supplementary information or questions related to application, please contact:
cedric.tentelier@univ-pau.fr

More information :
https://formation.univ-pau.fr/m-agri-ecology

International Welcome Desk :
http://univ-pau.fr/en/welcome-desk

Master's degree in Sciences and Technology for agriculture, food and environment

Evolutionary ecology in aquatic environments

http://formation.univ-pau.fr/m-agri-ecology

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

e2s UPPA
energy environment solutions

Overview

The aim of the programme "Evolutionary Ecology in Aquatic Environments" is to train scientific experts able to design experiments and models in order to produce knowledge in evolutionary ecology relevant to the management of aquatic ecosystems. It is backed by the Federation for Research in water resources and aquatic ecosystems (MIRA) which includes research experts and skills in the fields of evolutionary response of aquatic species to anthropic pressures and modelling of aquatic populations and ecosystems.

The master is fully taught in English and is hosted at the College of Sciences and Technologies for Energy and Environment (STEE) of the Université de Pau et des Pays de l'Adour (UPPA) in Anglet (France).

The STEE College has been founded within the framework of the prestigious French Initiative of Excellence label I-SITE (Initiatives Sciences, Innovation, Territories and Economy), obtained by our E2S-UPPA project.

Student Learning Outcomes

At the end of this programme, the students will be able to:
- Set up relevant experiments and theoretical models to describe the evolution of anthropized aquatic ecosystems.
- Manage and conduct experiments from sampling design to data collection and statistical analysis.
- Analyse, interpret and synthesize results to present them to scientists, managers and the general public.

Prospects for employment or further study

Students who completed the programme are granted a Master's degree. They can apply to PhD positions in evolutionary ecology of aquatic systems, either in a fully academic environment or in interaction with corporate environment consultancy.

Course Organization

The one-year training programme is composed of 1) a semester of eight courses (30 ECTS) covering evolutionary ecology, population dynamics, behavioural ecology, habitat restoration, space and time series analysis, sampling strategies, research initiation and language (French or Spanish), and 2) a 6-month-long internship (30 ECTS) in a research laboratory. Each course is organized in lectures, tutorial classes and practical works, and supplemented by online material.

Course assessment

Each unit of the coursework is evaluated through ongoing and summative assessments. Skills and knowledge are mainly assessed through the writing of synthesis reports based on real world case studies. The internship will be evaluated through a thesis and an oral defence.

Program objectives

- Prepare students at an advanced specialized level to meet present and future challenges in the ecology of aquatic environments,
- Develop research skills to engage in quality and successful research on the evolutionary ecology of aquatic systems,
- Prepare students for leading positions in corporate and academic research departments.

SEMESTER 1

- **Evolutionary dynamics and management applications** — **6 ECTS**
  State of the art methods and knowledge in evolutionary ecology for novel and adaptive management practices
- **Behavioral Ecology** — **2 ECTS**
  Darwinian approach to the evolution of behaviour, methods, models, collaborative and guided applications
- **Population dynamics** — **3 ECTS**
  From case studies, building models to estimate demographic parameters, and simulate dynamics
- **Time series and spatial analysis** — **6 ECTS**
  Advanced training in statistical ecology for complex datasets
- **Sampling strategies and abundance estimation** — **6 ECTS**
  Basic and advanced tools used in designing sampling approaches along with associating the appropriate modelling tools
- **Research initiation** — **3 ECTS**
  Scientific methodologies and analyses for research-oriented projects
- **French or Spanish course** — **2 ECTS**
  According to initial level, a final level CERCL-A2 (elementary) or B2 (autonomous) can be targeted
- **Ecological restoration of rivers** — **2 ECTS**
  Diagnostic of dysfunctioning rivers and targeting restoration actions

SEMESTER 2

- **Research project** — **30 ECTS**
  Conducting a research project (six months) from bibliographic review and protocol design to data analysis and article writing.