

SPECIALIZATION: SUSTAINABLE MANAGEMENT OF POLLUTION

LEVEL: MASTER 2
PERIOD: SEMESTER 1
LANGUAGE: EN

ECTS: 30

TEACHER/COORDINATOR: JULIEN CASTELIN



1- Objectives and skills developed

The learning approach of the program is essentially multidisciplinary, dealing with the management of contaminated sites from the technical, scientific, economic and sociological angles. The specific objectives of this semester are to provide students with knowledge on:

- › Pollution treatment techniques (treatment of water, effluents);
- › The different remediation techniques (physico-chemical treatment, bioremediation, phytoremediation ...)
- › Social management of contaminated sites and selected management methods (social acceptance, socially positive use of the restored site, integration of the surrounding populations in the rehabilitation process...);
- › Economic evaluation of management methods (cost evaluation, choice of alternative uses for contaminated areas)
- › Possible rehabilitation methods (spatial planning, landscape management)

2- Content and organization

The academic Semester (September to end of January) is composed of:

- › A two-week study tour with our partner university 'University of Chemistry and Technology' in Prague (September);
- › Multiple courses, case studies, group work, site visits,
- › Participation to professional and/or scientific conferences, in France or abroad, in which students will be able to meet the actors involved in management of polluted sites and soils, whether from the scientific or professional world and thus develop their network;
- › Self-directed time slots for the Semester project or the various projects included in different teaching units.

The courses are mainly provided by specialists, professors or professional experts working in the different areas of interest of the program.

The second semester of the program corresponds to the end-of-study internship (30 ECTS), which student can carry out in a company, consulting firm, research laboratory, in research and development, etc. in France or abroad.

3-Evaluation

Continuous assessment (individual & group) and individual written exams at the end of the semester
 For the Semester project: Oral defense, final written report and evaluation done by the "client"

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4- Teaching units

The SMaP specialization includes 5 modules:

1 / **“Applied techniques of pollution remediation”**, with 3 teaching units:

- › Physical and chemical treatment techniques
- › Biological treatment technique
- › Phytoremediation

2 / **“Sustainable management of polluted areas”**, covering the following topics:

- › Alternative use of polluted sites & sustainable management of polluted areas
- › Ecological restoration & landscape management

3 / **“Applied Statistics”**:

- › Computer and statistical tools

4 / **“Project Management”**, including:

- › Professional semester-long project
- › Responsibility: promotion/communication/sustainable projects

5 / **“Assistant Engineer Internship”**, credits allocated to the defense of the internship report

In addition, French as a foreign language courses are proposed to English-speaking students, as well as business English courses to French-speaking students through the whole academic semester spent at ISA.