Module Description

Environmental Remediation Technologies

General Information

Number of ECTS Credits

3

Abbreviation

TSM_EnReTe

Version

10.10.2015

Responsible of module

Dr. Pamela Principi, SUPSI

Language

	Lausanne	Bern	Zürich	Lugano
Instruction	☐ E ☐ F	☐ D ☐ E ☐ F	☐ D ☐ E	☐ D ☒ E
Documentation	☐ E ☐ F	☐ D ☐ E ☐ F	☐ D ☐ E	☐ D ☒ E
Examination	☐ E ☐ F	☐ D ☐ E ☐ F	☐ D ☐ E	☐ D ☒ E

Module category

☐ Fundamental theoretical principles
☒ Technical/scientific specialization module
☐ Context module

Lessons

☒ 2 lecture periods and 1 tutorial period per week

Brief course description of module objectives and content

This course will provide the student with the background knowledge useful to address different sources of pollution, of measures and technologies to prevent pollution and of contaminated systems and the available technologies for remediation.
In the second part of the course, the process of collection, interpretation and processing up to date information will be carried on with the students.

Aims, content, methods

Learning objectives and acquired competencies

The student will acquire the tools to be able to understand environmental problems, know the key-factors of remediation and the challenges of the near future, integrate knowledge of chemistry, biotechnology and ecology and read and understand *up to date* literature on remediation topics

Contents of module with emphasis on teaching content

Part 1:
General concepts of environment, ecosystem, pollution, remediation.
Energy and material flow in ecosystems, human influence on ecosystems.
Water and wastewater: sampling, quality assessment, treatment; reuse
Offgas Air: sampling, quality assessment, source of pollution, emission treatment;
Organic Waste: sampling, treatment, quality assessment, reuse
Soil: soil sampling and remediation.
Chemical-physical and biological remediation technologies: real case applications.

Part 2:
This part will be organized by selecting with each student or small group of students, the most informative papers accessible through database search and that deal with the remediation techniques. Each student will research a topic and present it with state of the art literature.

Teaching and learning methods

Theory lessons and student active involvement

Prerequisites, previous knowledge, entrance competencies

Environmental science, chemistry

Literature

- Slides given at the course from the Lecturers
- Reference books details will be given at the beginning of the course

Assessment

Certification requirements for final examinations (conditions for attestation)

Written module examination

Duration of exam :	120 minutes
Permissible aids:	Calculator, personal notes