

Environment

Environment: issues, concepts and tools

IDENTIFICATION

CODE : GEN-3-S1-EC-ENVI
ECTS : 1.0

HOURS

Lectures : 20.0 h
Seminars : 2.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student
contact : 22.0 h
Personal work : 15.0 h
Total : 37.0 h

ASSESSMENT METHOD

1h written exam, including mostly
multiple choice questions, and
possibly some open questions. No
documents allowed

TEACHING AIDS

Power Point presentations (pdf on-
line)

TEACHING LANGUAGE

French

CONTACT

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AIMS

The course of Industrial Ecology aims to provide students with an environmental science literacy through an general presentation of the following topics:

- Natural media and ecosystems associated with them,
- Equilibrium, disturbances and malfunctions of ecosystems related to human activities;
- Curative and preventive approaches that may be implemented to minimize impacts and optimize resource management.

In addition to a better scientific understanding of environmental impacts and their consequences, this course should enable students to put into perspective the information, questions and debates of environmental significance that serve as a base for the principles of "sustainable development", and may condition the evolution of our industrialized societies in the future.

CONTENT

The course include more specifically the following aspects:

- Introduction to the systemic approach, application to industrial ecology,
- Elementary ecological laws,
- Matter cycles in ecosystems,
- Ecosystems comparative approach and anthrosystems: features, notions of impacts and effects,
- Industrial anthrosystems : introduction to environmental management (BAT, BREF, LCA, et eco-conception),
- Valorization and introduction to the circular economy.

BIBLIOGRAPHY

Economics of Industrial Ecology
Materials, Structural Change, and Spatial Scales
Edited by Jeroen C. J. M. van den Bergh and Marco A. Janssen
Cloth / January 2005

PRE-REQUISITE

French scientific Bac + 2 level (or equivalent) in chemistry and physics.

More generally, common knowledge in engineering science of french bac 2 level or equivalent