

DPT GENIE ENERGETIQUE ET ENVIRONNEMENT ENERGETICS AND ENVIRONMENTAL ENGINEERING

INSA Campus LyonTech - 9 rue de la Physique Batiment Sadi Carnot - 69621 VILLEURBANNE Phone 0472438430 E-mail : gen-s@insa-lyon.fr

IDENTIFICATIONAIMSCODE :GEN-3-S2-EC-TDSOEECTS :2.0ThHOURSseLectures :23.0 hSeminars :6.0 hLaboratory :0.0 hProject :0.0 hTeacher-studentSKcontact :29.0 hPersonal work :20.0 hTotal :49.0 h

ASSESSMENT METHOD

Written test with no documents allowed, consisting in various questions relative to the different courses.

It is highly recommended to follow all of these four courses.

TEACHING AIDS

pdf files of of ppt slides

TEACHING LANGUAGE

French

CONTACT

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Environment

Treatments of solid wastes

OBJECTIVES :

The course aims to provide students with a good overview of the management strategies and technologies of solid waste , including other types of granular porous solid medium / such as sediment and soils.

The scientific principles underlying the techniques are also discussed , as well as criteria to define the most appropriate strategies based on their characteristics and objectives.

Finally , environmental impact issues are presented as well as scientific priniciples that allow to understand them [emissions, transfer and fate of contaminants in soils] .

SKILLS referred :

Students must acquire a good knowledge of the technologies available for waste treatment . They must also be able to mobilize this knowledge to develop management strategies , and to approach the evaluation of associated environmental benefits and impacts.

CONTENT

The course consists of the following parts:

- Systemic approach of waste management options: landfilling and "disposal", material recovery, energy recovery;
- Regulatory background and waste catalog
- Landfilling of solid waste
- Use of waste as secondary raw materials
- Thermochemical treatments
- Biological treatment of non-hazardous organic waste
- Soil pollution, transfer and fate of pollutants

BIBLIOGRAPHY

MUSTIN, J. (1985). Le compost : gestion de la matière organique Editions F. Dubusc. - SOLAGRO (2000). La méthanisation des déchets ménagers et assimilés à Recycler les déchets organiques et valoriser leur potentiel énergétique. Editions SOLAGRO, 2000. 32 p. - R. Gourdon (2001) Traitement biologique des déchets. Techniques de làIngénieur, Volume G (environnement), N° 2060, 16 pages.

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

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