Environmental technology

Lecturer
Michel VERBANCK (Coordinator)

Course mnemonic
CHIM-H409

ECTS credits
3 credits

Language(s) of instruction
English

Course period
First term

Course content

Pollution control at source - Sulphur content of fuels - Improved burning conditions - Main unit operations of environmental remediation - Treatment of gaseous pollutants - Air pollution control engineering, including particle removal - Drinking water production - Municipal and industrial wastewater treatment - Solid waste & sludge treatment - Soil remediation - Regulatory aspects.

Objectives (and/or specific learning outcomes)

Acquire an overall view of present-day environmental technologies. Develop technical skills in relation with green chemistry. Appreciate whether current technical solutions (implemented in environmental protection) actually fit with sustainable development goals.

Teaching method and learning activities

Ex cathedra lectures. Three technical visits (illustrating liquid and gaseous effluents, and solid waste management, respectively).

Contribution to the teaching profile

This teaching unit contributes to the following competences:

- In-depth knowledge and understanding of exact sciences with the specificity of their application to engineering
- Consciousness of the ethical, social, environmental and economic context of his/her work and strives for sustainable solutions to engineering problems including safety and quality assurance aspects
- The flexibility and adaptability to work in an international and/or intercultural context
- An integrated insight in chemical process and materials' technology
- Insight in chemistry as a link between process and materials technology

References, bibliography and recommended reading

Reference textbooks: Baumbach G. (1996). Air quality control. Springer-Verlag, 490p. Metcalf & Eddy (2003) Wastewater engineering: treatment, disposal, reuse. McGraw-Hill, 4th edition. Freeman H.M. (2000). Standard handbook of hazardous waste treatment and disposal. McGraw-Hill, 2nd edition.

Valid general information can also be found in: Masters G.M. & Ela H.P. (2008) Introduction to environmental engineering and science. Prentice-Hall Engineering, Upper Saddle River, NJ, 3d edition, 625p. Kiely G. (2007). Environmental Engineering, McGraw-Hill, Int edition, 890p.

Other information

Contact(s)

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Evaluation method(s)

Other

Evaluation method(s) (additional information)

Oral exam. Note that the material illustrated through and during the technical visits also forms a component of what could be asked during the oral exam.

Determination of the mark (including the weighting of partial marks)

The assessment for ChimH409 is only based on the oral exam.

Main language(s) of evaluation

English

Programmes

Programmes proposing this course at the Brussels School of Engineering

MA-IRMA | Master of Science in Chemical and Materials Engineering | finalité Professional/unit 2