

Design of chemical plants

Lecturers

Frédéric DEBASTE (Coordinator) and Tom VAN ASSCHE

Course mnemonic

CHIM-H531

ECTS credits

5 credits

Language(s) of instruction

English

Course period

Second term

- In-depth knowledge and understanding of the advanced methods and theories to schematize and model complex problems or processes
- Reformulate complex engineering problems in order to solve them (simplifying assumptions, reducing complexity)
- Work in an industrial environment with attention to safety, quality assurance, communication and reporting
- Think critically about and evaluate projects, systems and processes, particularly when based on incomplete, contradictory and/or redundant information
- A critical attitude towards one's own results and those of others
- 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

Course content

Complexity of projects (economic evaluation from feasibility to construction).

Product strategy.

Project management (specificity, aspects, characteristics, typical causes of failure, context, charter, risk management, planning & scheduling, communication, organization, responsibilities, estimates, budget, monitoring, closure).

Balance sheet and income statement.

Cost structure and profitability (IRR, ROI, NPV).

Situational leadership.

Negotiation.

Instrumentation

Objectives (and/or specific learning outcomes)

Overview of the industrial realities of a global project (chemical plant), by placing the engineering of a project in its global context, with its technical (including instrumentation), human, cultural, legal and economic aspects.

Teaching method and learning activities

Courses and exercises are done in an integrated way.

A group practical project of plant design closes the course.

Contribution to the teaching profile

This teaching unit contributes to the following competences:

- In-depth knowledge and understanding of integrated structural design methods in the framework of a global design strategy

Other information

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Evaluation method(s)

Other

Evaluation method(s) (additional information)

Oral exam in group in which each group presents the results of the designed realized in the last part of the course

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