GHENT UNIVERSITY

Course Specifications

From the academic year 2014-2015 up to and including the

Chemical Process Design (E073760)

Course size (nominal values; actual values may depend on programme)

Credits	6.0	Study time	180 h
Contact hrs	75.0 h		

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	seminar	15.0 h
		project	30.0 h
		guided self-study	30.0 h
B (semester 2)	English	project	30.0 h
		lecture	30.0 h
		seminar	15.0 h

Lecturers in academic year 2018-2019

De Smedt, Philip	TW11	lecturer-in-charge

Offered in the following programmes in 2018-2019	crdts	offering
Bridging Programme Master of Science in Chemical Engineering	6	B
Bridging Programme Master of Science in Chemical Engineering	6	A
Master of Science in Electromechanical Engineering (main subject Control Engineering and Automation)	6	B
Master of Science in Electromechanical Engineering (main subject Electrical Power Engineering)	6	B
Master of Science in Electromechanical Engineering (main subject Maritime Engineering)	6	B
Master of Science in Electromechanical Engineering (main subject Mechanical Construction)	6	B
Master of Science in Electromechanical Engineering (main subject Mechanical Energy Engineering)	6	B
Master of Science in Chemical Engineering	6	B
Master of Science in Sustainable Materials Engineering	6	B
Master of Science in Chemical Engineering	6	A

Teaching languages

Dutch, English

Keywords

Design of chemical processes, integration of disciplines and unit operations, basics of processynthesis

Position of the course

The main objective is to transfer a method for process design. The method for the design of new processes and the analysis of existing processes is based upon a structured approach, the so called. #conceptual design# method which is combined with practical experience in process design. We assume that the students have a basic knowledge of unit operations, this knowledge is increased in depth and broadness. The objectives in process design and process improvements are studied and praticed by taking into account constraints for reduction of energy consumption and pollution and by using methods for process synthesis. Process simulation programs for further development of mass and energy balances as well as for the selection and design of equipment are used in the course.

Contents

- Introduction

- Process simulation
- Heat Integration
- Separation trains
- Economical analysis

Initial competences

Basics of chemistry and kinetics, mathematics, unit operations for transfer of mass, heat and momentum.

Final competences

systematic process design, energy integration, safety and economic analysis

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Guided self-study, lecture, project, seminar, seminar: coached exercises, seminar: practical PC room classes

Learning materials and price

Powerpoint presentations by lecturor (E) Available on Minerva website

References

- Douglas, James M.,#Conceptual design of chemical processes#, McGraw-Hill 1988
- Warren D. Seider, J.D. Seader, Daniel R. Lewin, #Process Design Principles, synthesis, analysis and evaluation#, John Wiley & Sons 1999

Course content-related study coaching

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Assignment

Examination methods in case of periodic evaluation during the second examination period

Oral examination

Examination methods in case of permanent evaluation

Open book examination, assignment

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

During examination period: graded workshop results. During semester: written open-book exam; graded workshop results.

Calculation of the examination mark

Special conditions: Participation during the lectures: 20% Assignments: 30% Exam: 50%.