Industrial Chemistry (C002545)

Valid in the academic year 2017-2018

Course Specifications

Course size

(nominal values; actual values may depend on programme)

Credits 5.0
Study time 140 h
Contact hrs 45.0 h

Course offerings and teaching methods in academic year 2017-2018

A (semester 1)

English

lecture 30.0 h
excursion 15.0 h

Lecturers in academic year 2017-2018

Van Hecke, Kristof  WE06  lecturer-in-charge

Offered in the following programmes in 2017-2018

Master of Science in Chemistry  5  A
Exchange Programme in Chemistry (master's level)  5  A

Teaching languages

English

Keywords

Industrial chemistry, process technology, chemical industry.

Position of the course

The main purpose of this course is to bring alive the concepts forming the basis of the chemical process industry by treatment of actual practical processes. It is not the intention to treat the chemical process industry in an encyclopedia way. Concepts are emphasized rather than facts. The production of chemicals entails specific solutions to problems related to transport, mixing, temperature control, etc. which are often governing the choice of certain processes over other alternatives. In addition notions of recycling, efficiency, waste products, energy consumption are determinants in industrial practice. Some insight in chemical reactors is required in order to fully appreciate industrial aspects of the production of organic as well as inorganic basic chemicals. The principles are illustrated with visits to industrial plants.

Contents


Initial competences

The students should have obtained credits for the curriculum courses: ‘Chemistry I: Structure of Matter’, ‘Chemistry II: Changes in Matter’, ‘Organic Chemistry: Reactivity 1, 2 and 3’ or have acquired the specific competences aimed for, via equivalent curriculum subjects, to be proven by credit(s).

Final competences

1. To gain knowledge of the basic industrial processes for basic organic and inorganic products.
2. To gain attention regarding the different aspects of process safety, sustainability and risk assessments, related to industrial processes.
3. Critically assessing existing and new industrial processes and models, and interpreting these with respect to the present sustainability problematics.
4. Linking chemistry to society, being sensitive to societal questions, concerns and innovation needs and considering these within an international context.
5. Mastering basic concepts, notions and theories in the chemical industry and being capable of applying these.

(Approved)
Access to this course unit via a credit contract is determined after successful competences assessment.

This course unit cannot be taken via an exam contract.

**Teaching methods**
- Excursion, lecture

**Extra information on the teaching methods**
- The lectures are augmented by visits to industrial plants.

**Learning materials and price**
- Appropriate lecture notes (handouts, slides) and additional information is provided by the (guest)lecturers on Minerva.

**References**

**Course content-related study coaching**

**Evaluation methods**
- end-of-term evaluation

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

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

**Examination methods in case of permanent evaluation**

**Possibilities of retake in case of permanent evaluation**
- not applicable

**Extra information on the examination methods**
- An oral exam covering the course subjects (lectures/excursions) is prepared in writing.

**Calculation of the examination mark**
- Oral exam: 100%