Course Specifications
Valid as from the academic year 2018-2019

Environmental Chemistry: Anorganic Polluents (I001395)

Course size
Credits 3.0
Study time 75 h
Contact hrs 37.5 h

Course offerings and teaching methods in academic year 2019-2020
A (semester 1) Dutch seminar: practical PC 18.75 h
lecture 18.75 h

Lecturers in academic year 2019-2020
Tack, Filip LA24 lecturer-in-charge

Offered in the following programmes in 2019-2020

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<td>Master of Science in Chemical Engineering</td>
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<tr>
<td>Master of Science in Sustainable Materials Engineering</td>
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<td>Master of Science in Chemical Engineering</td>
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<td>Master of Science in Bioscience Engineering: Chemistry and Bioprocess Technology</td>
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Teaching languages
Dutch

Keywords
Chemistry, environment, contamination, biogeochemistry

Position of the course
Relying on knowledge acquired in general chemistry elements from soil chemistry and aquatic chemistry are combined in a quantitative treatment of chemical processes, equilibria and reaction dynamics in the environment. The source, nature and properties of inorganic contaminants are reviewed and applied in the study of their behaviour in air, water, soil and ground water, and of their disrupting effects and eventual measures.

Contents
1 The environmental compartments: soil, water and air
2 Aquatic chemistry
3 Water quality
4 Chemical equilibria in soils
5 Biogeochemical cycles
6 Inorganic contaminants

Initial competences
General inorganic chemistry; Basic concepts in chemical analysis

Final competences
1 Have insight in local and global environmental issues
2 Have intellectual and practical competences in measuring and calculation of inorganic environmental contaminants in soil, water and air.
3 Be able to explain sources, effects and reference values of inorganic contaminants in soil, water and air.
4 Have insight in the physico-chemical parameters that determine the distribution and transport of contaminants between the different environmental compartments.
5 Perform chemical equilibrium calculations in the aquatic environment

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

(Approved)
Conditions for exam contract
   This course unit cannot be taken via an exam contract

Teaching methods
   Lecture, seminar: practical PC room classes

Learning materials and price
   Lecture notes are available during the first lecture
   Slides are electronically available.

References
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Course content-related study coaching
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Evaluation methods
   end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period
   Written examination with open questions

Examination methods in case of periodic evaluation during the second examination period
   Written examination with open questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
   not applicable

Calculation of the examination mark
   Students who eschew periodic and/or permanent evaluations for this course unit may
   be failed by the examiner.