GHENT UNIVERSITY

# Course Specifications

Valid in the academic year 2024-2025

## Selective Separation of Strategic Elements (I002849)

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

**Credits 5.0** **Study time 150 h**

**Course offerings in academic year 2024-2025**

A (Year) English Gent

**Lecturers in academic year 2024-2025**

| | | |
|---|---|---|
| Haseneder, Roland | FREIBE01 | lecturer-in-charge |

| Offered in the following programmes in 2024-2025 | crdts | offering |
|---|---|---|
| International Master of Science in Sustainable and Innovative Natural Resource Management | 5 | A |

**Teaching languages**

English

**Keywords**

**Position of the course**

**Contents**

- membranes, modules, hybrid processes
- driving forces, transport resistances
- structures, materials
- mass transfer
- module construction
- MF, UF, NF, RO
- standard applications
- scaling, fouling effects
- special applications: mine water treatment, leaching solutions, resource recovery
- internship to membrane processes

**Initial competences**

**Final competences**

On completion of the course the student shall be able to explain membrane technology and the different applications like extraction and membrane assisted processes regarding the separation of value products. Focus is put on strategic elements. They can use their physicochemical knowledge on membrane separation, development of hybrid operation systems and the influences for practical applications and are familiar with the methods and problems related to separation devices. Due to the seminar the students will be able to dicuss the current literature on the topic.

**Conditions for credit contract**

This course unit cannot be taken via a credit contract

**Conditions for exam contract**

This course unit cannot be taken via an exam contract

**Teaching methods**

Lecture, Practical

**Extra information on the teaching methods**

S1 (WS): Lectures (2 SWS)

S1 (WS): Seminar (1 SWS)
S1 (WS): Practical Application (1 SWS)

**Study material**

None

**References**

Heinrich Strathmann: Introduction to Membrane Science and Technology, Wiley-VCH, 2011
Anil K. Pabby, Syed S.H. Rizvi, Ana Maria Sastre Requena: Handbook of Membrane Separations, CRC-Press 2008

**Course content-related study coaching**

**Assessment moments**

end-of-term and continuous assessment

**Examination methods in case of periodic assessment during the first examination period**

Written assessment

**Examination methods in case of periodic assessment during the second examination period**

Written assessment

**Examination methods in case of permanent assessment**

Participation

**Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

**Extra information on the examination methods**

For the award of credit points it is necessary to pass the module exam.

**Calculation of the examination mark**