GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2026-2027

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 2026-2027

A (Year)	English	Gent

Lecturers in academic year 2026-2027

Haseneder, Roland	FREIBE01	lecturer-in-charge

Offered in the following programmes in 2026-2027	**crdts**	**offering**
International Master of Science in Sustainable and Innovative Natural Resource Management	5	A

Teaching languages

English

Keywords

membrane, mass transfer, separation applications

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

Seminar, 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