GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2023-2024

Resources Chemistry (I002174)

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

Credits 9.0 **Study time 270 h**

Course offerings in academic year 2023-2024

A (year) English Gent

Lecturers in academic year 2023-2024

Frisch, Gero	FREIBE01	lecturer-in-charge
Bertau, Martin	FREIBE01	co-lecturer

Offered in the following programmes in 2023-2024	**crdts**	**offering**
International Master of Science in Sustainable and Innovative Natural Resource Management	9	A

Teaching languages

English

Keywords

Position of the course

Contents

Fundamentals: Chemistry of ore deposits, phase diagrams, basic coordination chemistry, modelling of solvation equilibria, kinetic aspects of precipitation and extraction, chemical foundations of metallurgical processes, applied electrochemistry.
Applications: Hydro- und pyrometallurgical processing and recycling technologies, such as smelting, leaching, digestion, flotation, extraction, precipitation, electrowinning and ion exchange; applications of unconventional solvents; economic viability of processing and separation techniques

Initial competences

Fundamental knowledge in inorganic chemistry, physical chemistry and mathematics

Final competences

1 able to describe the chemical properties of complex raw materials
2 able to explain the chemical concepts behind modern enrichment, purification and production techniques
3 able to suggest a suitable technology for the processing of a particular resource

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

Excursion, lecture, independent work, practical

Extra information on the teaching methods

lectures (2 SWS), tutorials (2 SWS), case studies (problem-based learning workshops, 2

SWS), practicals with excursion (3 SWS)

Learning materials and price

References

J. Huheey et al., Inorganic Chemistry, Pearson, 2008
M.Bertau et al., Industrial Inorganic Chemistry, Wiley, 2016
Kirk-Othmer et al., Chemical Technology, Wiley, 2013

Course content-related study coaching

Evaluation methods

end-of-term and continuous assessment

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

Written assessment

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

Written assessment

Examination methods in case of permanent evaluation

Skills test

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

Extra information on the examination methods

The module is assessed through a written exam (60 to 120 min) as well as continuous assessment of the problem-based learning workshops and practicals. All assessed work must be completed successfully in order to pass the module.

Calculation of the examination mark

The module mark is calculated as the weighted average of the written exam (50 %), problem-based learning (25 %) and practicals (25 %).