GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Mineral Exploration (I002921)

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

Credits 10.0 **Study time 300 h**

Course offerings in academic year 2026-2027

A (semester 2)	English	Gent

Lecturers in academic year 2026-2027

Buczko, Daniel	UPPSALO1	lecturer-in-charge

Offered in the following programmes in 2026-2027	**crdts**	**offering**
International Master of Science in Sustainable and Innovative Natural Resource Management	10	A

Teaching languages

English

Keywords

Position of the course

This course will present the characteristics of natural resources and their formation. Exploration will be approached from geological, geophysical and geochemical perspectives and aspects of economic geology and resource use will be integrated throughout the course.

Contents

Introduction to the characteristics, distribution and genesis of mineral resources. Review of the most common ore types and the ore-forming processes (magmatic, hydrothermal and sedimentary). Exploration methods (geological, geophysical and geochemical). Case studies of existing exploration prospects. Aspects of economic geology, environmental impacts, resource use and importance for society. Equal opportunities with respect to the Discrimination Act.

Initial competences

90 credits in science/engineering (physics, chemistry, biology, mathematics, earth science, computer science, material science), including 15 credits in mathematics or physics and 10 credits in chemistry.
Proficiency in English equivalent to the Swedish upper secondary course English 6.

Final competences

1 On completion of the course the student shall be able to:
- Evaluate the occurrence of mineral resources in Earth's crust

2 - Assess the ore-forming processes for different types of ore deposits based on the local geology and from a plate-tectonic perspective

3 - Critically evaluate important aspects of ore-forming processes such as source, transport and deposition of metals

4 - Evaluate geological, geophysical and geochemical exploration methods, and how they are used for different ore types and at different stages of an exploration campaign

5 - Assess factors controlling the economical aspect of mineral resources and the importance of resources for society

6 - Critically assess the environmental impact of mining activities and initiatives to make exploration and mining more sustainable

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

Lectures, seminars, case based learning and practical exercises.

Study material

None

References

is available as an e-book through UU library: http://link.springer.com/book/10.1007%2F978-3-642-22996-1

Arndt, Nicholas.; Ganino, Clément., Metals and Society: An Introduction to Economic Geology, Berlin, Heidelberg, Springer Berlin Heidelberg, 2012

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

Skills test, Presentation, Written assessment, Assignment

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

Skills test, Presentation, Written assessment, Assignment

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

Written examination (5 credits), practical examination and project work (2 credits), seminars and presentation (3 credits)

If there are special reasons for doing so, an examiner may make an exception from the method of assessment indicated and allow a student to be assessed by another method. An example of special reasons might be a certificate regarding special pedagogical support from the disability coordinator of the university.

Calculation of the examination mark