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 2024-2025**

| | | |
|---|---|---|
| A (semester 2) | English | Gent |

**Lecturers in academic year 2024-2025**

| | | |
|---|---|---|
| Buczko, Daniel | UPPSALO1 | lecturer-in-charge |

| Offered in the following programmes in 2024-2025 | 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**