

Applied 3D Geological Modeling and Mapping (I002883)

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

Credits 5.0 **Study time** 150 h **Contact hrs** 50.0h

Course offerings in academic year 2022-2023

A (semester 1) English Gent

Lecturers in academic year 2022-2023

Burchardt, Steffi UPPSAL01 lecturer-in-charge
Jeanneret, Pauline UPPSAL01 co-lecturer

Offered in the following programmes in 2022-2023

	crdts	offering
International Master of Science in Sustainable and Innovative Natural Resource Management	5	A

Teaching languages

English

Keywords

Position of the course

Georesource Exploration and Characterisation

This course introduces state-of-the art geological mapping and modelling methods that are currently used by for instance the mining and building industry. These methods include data acquisition with UAVs (unmanned aerial vehicles, i.e. drones), digital outcrop construction, construction of 3D geological maps, and data analysis and modelling. The course will give the opportunity to explore the possibilities of these methods by working on example projects where new data will be collected and combined with existing data. The course mainly uses examples from the mining industry.

Contents

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Initial competences

Final competences

- 1 Construct 3D digital outcrops model from acquired field photographs
- 2 Combine a range of existing and new data from different sources
- 3 Construct, analyse, and interpret 3D geological maps
- 4 Acquire and analyse quantitative data from digital outcrops model and 3D geological maps
- 5 Discuss sources of uncertainty and errors of different methods
- 6 Discuss how modern mapping techniques contribute to make exploration and mining more sustainable
- 7 Present results in a way relevant to potential industry employers.

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

Group work, Seminar, Excursion, Lecture, Seminar: coached exercises

Extra information on the teaching methods

Lectures, seminars, case based learning and practical exercises, Fieldtrip (only if the conditions permit). The participation in group sessions is compulsory.

Learning materials and price

Syllabus

References

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

Report, Written examination, Participation, Oral examination

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

Report, Written examination, Participation, Oral examination

Examination methods in case of permanent assessment

Report, Written examination, Participation, Oral examination

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

Examination during or at the end of the course. Seminar presentation (3 credits) and a written report (2 credits).

Calculation of the examination mark