

Applied 3D Geological Modeling and Mapping (1002883)

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

Credits 5.0 **Study time** 150 h

Course offerings in academic year 2023-2024

A (semester 1) English Gent

Lecturers in academic year 2023-2024

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

Offered in the following programmes in 2023-2024

	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

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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

Excursion, group work, lecture, seminar

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

Evaluation methods

end-of-term and continuous assessment

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

Participation, assignment, oral assessment, written assessment

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

Participation, assignment, oral assessment, written assessment

Examination methods in case of permanent evaluation

Written assessment, oral assessment, participation, assignment

Possibilities of retake in case of permanent evaluation

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