

Exploration and Environmental Geophysics (I002198)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
 Credits 15.0 Study time 450 h Contact hrs 135.0 h

Course offerings in academic year 2020-2021

A (semester 1) English Gent

Lecturers in academic year 2020-2021

Malehmir, Alireza

UPPSAL lecturer-in-charge

Offered in the following programmes in 2020-2021

[International Master of Science in Sustainable and Innovative
Natural Resource Management](#)

crdts	offering
15	A

Teaching languages

English

Keywords

Position of the course

Contents

The seismic reflection method, the seismic refraction method, gravity measurements, magnetization and magnetic measurements, electrical methods, electromagnetic methods including ground penetrating radar, radiometric methods, borehole logging, petrophysics, geophysical field techniques, geophysical modelling and interpretation, field course.

Initial competences

Final competences

- 1 Explain the physical principles governing the propagation of seismic waves, describe and apply the principles of seismic data acquisition and have a broad understanding of the instruments used in the field.
- 2 Interpret a seismic section and identify different seismic phases.
- 3 Describe the basic processing steps of reflection seismic data.
- 4 Derive a model of the subsurface based on refraction seismic data.
- 5 Be able to make gravity measurements and calculate Free-air and Bouguer anomalies and interpret gravity data.
- 6 Describe the common types of magnetization, understand how a Proton and a Cesium Vapour magnetometer works, and interpret magnetic data.
- 7 Describe the different electrical and electromagnetic methods and how they relate to electrical conductivity and dielectric permittivity.
- 8 Compare different geophysical methods, describe their weaknesses, strengths, and applicability to different problems and geological environments.

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

Lecture, fieldwork, seminar, seminar: practical PC room classes

Extra information on the teaching methods

S1 (WS): Lectures
S1 (WS): Incl. computer exercises and a compulsory field course / Exercises
S1 (WS): Seminar

Learning materials and price

References

Course content-related study coaching

Evaluation methods

end-of-term evaluation

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

Report

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

Report

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

Extra information on the examination methods

For the award of credit points it is necessary to pass the module exam.

The module exam contains:

KA*

AP*: Report on computer exercises

AP*: Report on compulsory field course

* In Modules with more than one exam, this exams has to be pass successfully
respectively has to have a result at least "ausreichend" (4,0).

Calculation of the examination mark

The Grade is generated from the examination result(s) with the following weights (w):

KA* [w: 7]

AP*: Report on computer exercises [w: 5]

AP*: Report on compulsory field course [w: 3]

* In Modules with more than one exam, this exams has to be pass successfully
respectively has to have a result at least "ausreichend" (4,0).