UNIVERSITY OF GOTHENBURG

DEPARTMENT OF EARTH SCIENCES

GVK430 Environmental geology, case study, 15 credits

Miljögeologi, fallstudie, 15 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2013-04-22 and was last revised on 2022-12-01 to be valid from 2023-01-16, spring semester of 2023.

Field of education: Science 100%
Department: Department of Earth Sciences

Position in the educational system

The course includes 15 credits at the master's level. The course is offered as an elective course subject to availability.

The course can be part of the following programmes: 1) Marine Science, Master's Programme (N2MAV), 2) Bachelor of Science in Environmental Science (N1MVN), 3) Environmental Sciences (N2MVN) and 4) Master's Programme in Earth Sciences (N2GVS)

Main field of studies	*Specialization*
Earth Sciences	A1N, Second cycle, has only first-cycle course/s as entry requirements
Environmental Science	A1N, Second cycle, has only first-cycle course/s as entry requirements

Entry requirements

Admission to the course requires a minimum of 120 credits in the various main fields of Science, of which at least 30 credits must be approved courses in the main field of Earth Sciences. Applicants with equivalent qualifications may be admitted to the course after review and approval.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- explain how to plan, project and evaluate environmental geological problems.
- describe important physical and geochemical properties and processes that affect contaminant dispersion, fixation and enrichment in soil, sediment and water.
- explain why there are systematic trends in soil and sediment properties, and surface and groundwater, in different geological settings.

Competence and skills

- structure, plan and carry out an environmental investigation using problem analysis and conceptual modelling.
- project and plan for different investigative methods.
- carry out a risk analysis in environmental geological problems, and in the execution of environmental geological projects.
- evaluate and discuss the results obtained and propose recommendations on measures.
- present results orally and in writing.

Judgement and approach

- critically analyse and evaluate the role of soil, sediment and water in issues relating to environmental protection measures and post-treatment measures.

The course is sustainability-focused, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria. The content also constitutes the course's main focus.

Course content

The course covers:

1. Small-scale systems where soil and sediment properties, as well as surface and groundwater properties, are characterised in relation to environmental processes.
2. Large-scale systems, where conditions and trends in different environments are compared.
3. Modelling and application of geological knowledge in environmental work.

The case study consist mainly of an assignment carried out in a project group by one or

more case studies related to environmental geological issues. The case study is primarily linked to practical work in a selected study area for field studies and secondly, in case it is not available, in the form of an area where current societal issues exist as described in the course's background for the project work. The case study aims to provide a theoretical and practical exercise of environmental geological knowledge and project implementation.

Form of teaching

The teaching consists of lectures, group lessons, seminars, individual and group exercises, group work, laboratory sessions, study visits, field trips and field work, and a case study in which the principles and methods will be applied.

All sections except lectures are compulsory.

Language of instruction: English
Some teaching may be given in Swedish if necessary.

Assessment

The assessment is based on written tests, assignments and a major case study.

Component 1: Case study (Case study), 7 credit: U/G/VG

Component 2: Theory (Theory), 5 credits: U/G/VG

Component 3: Exercises (Exercises), 3 credits: U/G/VG

If a student, who has failed the same examined element on two occasions, wishes to change examiner before the next examination session, such a request is to be submitted to the department in writing and granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for special educational support, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, the examiner may decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but not more than two years after the course has ceased/been changed. The same applies to internships and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).
For a pass (G) in the entire course, the grade Pass (G) on all compulsory components of all the sub-courses are required. For the final grade Pass with Distinction (VG), the grade Pass with Distinction (VG) is required on at least two of the sub-courses.

Course evaluation

Course evaluation is carried out in two stages; a scheduled dialogue between teachers and students and via Canvas where the students are given the opportunity to participate anonymously.

The result of and possible changes to the course will be shared with students who participated in the evaluation and students who are starting the course.

Additional information

N2GVS Master's Programme in Earth Sciences students have priority for the course.