



AE1102 Geology and Geotechnical Engineering 6.0 credits

Geologi och geoteknik

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for AE1102 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

AI1137 or AI1136 Introduction to the Planning and Building Process, SF1617 Mathematical Methods II besides SH1010 Physics for the built environment

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The course aims to give basic knowledge of the physical and chemical composition of soil and rock material, its technical properties and classification systems. The students will get ability to understand the geological and hydrogeological processes, geological history, earth composition and stratigraphy, as a basis for sustainable land use, including soil- and ground-water and its importance for stability and transport. Basic knowledge of soil mechanics and soil ground improvement methods, ability to use and interpret geological and geotechnical data including risk assessment for mass movement hazards.

Course contents

Formation of rock and soil. Landforms due to recent and previous geological processes, their formation, occurrence. Physical and chemical composition of rock and soil (mineralogy, petrology). Rock and soil stratigraphy. Swedish rock and soil conditions. Soil water, unsaturated and saturated conditions, pore water pressure. Usefulness of rock and soil materials, geological maps. Technical properties of rock and soil, especially soil mechanics, methods for ground improvement, geotechnical investigations, interpretation of geotechnical data.

Course literature

- Lundqvist J 2006: Geologi. Processer-Utveckling-Tillämpning. Studentlitteratur. In Swedish
- Compendium in Geotechnology. In Swedish

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Approved written examination (TEN1; 4,5 cr). Approved exercises including field-trip (ÖVN1; 1,5 cr)

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.