



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Teknisk geologi **Engineering Geology**

VTGA01, 4 credits, G1 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED V

Date of Decision: 2023-03-21

General Information

Main field: Technology.

Compulsory for: V1

Language of instruction: The course will be given in Swedish

Aim

The aim is to present basics of general geology, hydrogeology and engineering geology. The course has a scientific geological base but is also focusing on general engineering aspects and especially on civil and foundation engineering aspects.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to give an account of the most common geological materials - minerals, rocks and soils - especially unconsolidated quaternary deposits of Sweden and their genesis, occurrence, landscape morphology and terrain position, stratification and material properties as permeability and frost properties.
- be able to understand how to read a geological map, how to construct a principal geological section - a type section - and thus describe a rock mass in three dimensions.

Competences and skills

For a passing grade the student must

- be able to identify the most common minerals, rocks and soils.

Contents

Lectures

Minerals, rocks and soils - genesis, occurrence, composition, and properties from a civil engineering point of view. Stratification of quaternary glacial deposits and rock mass structures. Groundwater - genesis, occurrence, flow and quality as a function of geological environment. Connection between landscape morphology, genesis, material composition, grain size and also soil and rock properties. Introduction to field investigations, geological materials in the community and geology in civil engineering

Exercises

Exercises on soils, minerals and rocks; executed as self study exercises with only a limited access of teachers in a semipermanent geological collection available during the entire course. Geological map exercise.

Excursion

Engineering geological excursion in Scania.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Written examination and compulsory engineering geological excursion.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

The number of participants is limited to: No

The course overlaps following course/s: VTGA05, VTGF05, VGTA01

Reading list

- Conny Svensson: Kompendium i Teknisk Geologi AK. KFS, 2012. Compendium in Swedish only.
- Conny Svensson: Conny Svenssons Ingenjörsgelogiska exkursion. 1996. As a supplement to the course literature, the internet document "Conny Svenssons Ingenjörsgelogiska exkursion" is available at connywww.tg.lth.se.

Contact and other information

Course coordinator: Alfredo Mendoza, Alfredo.Mendoza@tg.lth.se

Course homepage: <http://www.tg.lth.se/grundutbildning/kurser>

Further information: In the time plan below excursion hours has been presented as laboratory hours (L). A teacher is available about 70 hours in the tutorial sample collection of the geolaboratory for learning discussions.