

SYLLABUS

Geotechnology, basic course 7.5 credits G0013B

Geoteknologi baskurs

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2021-02-17**

Geotechnology, basic course 7.5 credits G0013B

Geoteknologi baskurs

First cycle, G0013B

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G VG *	Geoteknik	Civil Engineering

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Course Aim

After completing the course, the student should:

1. hold practical basic knowledge in quaternary geology, soil material and soil mechanics, as well as constructions in rock
2. be able to distinguish different soil material, and identify their properties with respect to shear strength, stability, settlement, frost characteristics, and compaction.
3. be able to conduct geotechnical routine investigations
4. be able to describe different soil stabilization and foundation methods
5. be able to describe mining activities and foundations in rock

Contents

The course covers the following knowledge:

Quaternary geology and quaternary geological maps
Soil material and soil classification
Groundwater, capillarity and permeability
Soil's strength property and deformation property, as well as its compaction
Frost and thaw in soil, settlement in soil, as well as pore pressure in soil
Stability in excavation in soil and slope stability
Soil stabilization and foundation method
Foundation in rock

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The teaching is given in form of lecturers, calculation passes, laboratory work and assignment. The lectures are given in physical classrooms and lecture materials are published beforehand on the study platform. Laboratory work and assignment are to be done in groups of max. 4 students. Laboratory work include four parts where the first part is presented orally direct after the lab. The rest of four parts are to be presented in a 15 minutes' video. Assignment is presented in a written report as well as orally at the end of the course.

The students are expected to attend all the lectures if possible, and are mandatorily required to conduct laboratory work and assignment. Group meetings are expected among the students to practice collaboration and communication skills. It is recommended to try to solve calculation examples before each calculation pass.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. The course is assessed through two written exams, laboratory work and assignment. All activities included in laboratory work and assignment are compulsory to be completed. Written exam, laboratory work and assignment must all be completed for a course grade. Grading scale is U G VG.

All intended learning outcomes are to be assessed through written exam. Intended learning outcome 2 and 3 are also assessed through laboratory work. Intended learning outcome 4 is also assessed by assignment.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Transition terms

The course is equal to T0003B

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0002	Assignment report	U G#	2	Mandatory	S09	
0003	Laboratory work	U G#	2	Mandatory	S09	
0004	Test 1	U G VG *	1.5	Mandatory	S17	
0005	Test 2	U G VG *	2	Mandatory	S17	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2021-02-17

Syllabus established

Kursplanen är fastställd av Institutionen för samhällsbyggnad 2008-01-22 att gälla från H08.