



Course syllabus

Geoteknik Soil Mechanics

VGTF05, 5 credits, G2 (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: V3

Language of instruction: The course will be given in Swedish

Aim

The course shall give an introduction to and basic knowledge in soil mechanics. During the course the student should develop problem solving skills and learn to perform basic analyses in the area of soil mechanics.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- Be able to explain and use basic concepts and relations used in soil mechanics.

Competences and skills

For a passing grade the student must

- Be able to apply soil mechanics knowledge in design of constructions.

Judgement and approach

For a passing grade the student must

- Understand the significance of and be able to assess a geotechnic analysis, design and planning.

Contents

Soil description and classification. Soil mechanics. Testing methods used in field and laboratory. Computation of the stress state. Failure criteria, Mohr's circle. Settlements calculation, load bearing capacity for foundation, earth pressure, and landslide risk.

Examination details

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

Assessment: The course examination comprises one hand-in task, a compulsory practical measurement task and a written exam. The final mark is based on the points earned in the hand-in task and the written exam.

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.

Parts

Code: 0121. **Name:** Soil Mechanics - Written Examination.

Credits: 3,5. **Grading scale:** TH. **Assessment:** Written exam

Code: 0221. **Name:** Soil Mechanics - Hand-in Assignment.

Credits: 1,5. **Grading scale:** UG. **Assessment:** Written presentation of hand-in assignments

Code: 0321. **Name:** Practical Measurement.

Credits: 0. **Grading scale:** UG. **Assessment:** Written presentation of practical measurements

Admission

Assumed prior knowledge: VTGA01 Teknisk geologi and VSMA05 Byggnadsmekanik

The number of participants is limited to: No

The course overlaps following course/s: VGTA01, VGTA05

Reading list

- Ola Dahlblom och Erika Tudisco: Introduktion till Geotekniken. Studentlitteratur AB, 2022, ISBN: 9789144159980.

Contact and other information

Course coordinator: Erika Tudisco, erika.tudisco@construction.lth.se

Course homepage: <http://www.geoteknik.lth.se>

Further information: Teaching is given through lectures including guest lectures, exercises, a project work, and practical measurements.