Course G1446: Introduction to Geotechnical Engineering

GENERAL INFORMATION

Spring Semester
6 ECTS credits

INSTRUCTOR(S)

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Description

Origin and description (identification and state parameters) of soil and rock. Ground water: Hydrostatic condition. Steady-state subsurface fluid flow. Soil stresses: Stress components and parameters. Principle of effective stresses. Geostatic condition: stress history, overconsolidation, lateral stresses. Confined compression of soils. Consolidation and settlement. Oedometric tests. Partially saturated soils: soil suction, collapse and swelling. Soil strength and deformability: Drained and undrained strength. Soil behaviour in triaxial and shear tests.

TEXTBOOK

Fundamentals of Geotechnical Engineering. Das, B.M. Practical Rock Engineering. Hoek, E. (2007)

SYLLABUS

1. Soils and rocks
2. Soil water
3. Soil stresses
4. Confined compression.
5. Consolidation
6. Partially saturated soils
7. Strength and deformation
8. Rock properties
9. Soil exploration
10. Foundations
11. Earth pressures
12. Slope stability