



ЦЕНТЪР ЗА ОБУЧЕНИЕ – БАН

1000 София
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Basic Information:

Course Title: Triaxial test of improved soils

Lecturer: Prof. Doncho Karastanev, PhD

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Total Teaching Hours: 30 hours theory

Annotation (up to 150 words)

The present educational course is envisaged primarily PhD students in the field of engineering geology and environmental geotechnics, but could be useful for professionals as well whose professional activity is directly related to the geological environment as ground base for construction of buildings and facilities.

The course aims to introduce PhD students in the theoretical basis of one of the most versatile and widely applied geotechnical laboratory tests – the triaxial test. The course includes a study of the main types of the triaxial test: Consolidated Drained (CD), Consolidated Undrained (CU) and Unconsolidated Undrained (UU).

Course content (brief description by topics or modules)

30 hours theory

Topic / Module 1: Introduction

Topic / Module 2: Overview of the triaxial test

- Equipment components
- Measuring devices

Topic / Module 3: The phases of triaxial testing

- Saturation
- Consolidation
- Shear

Topic / Module 4: Specimen preparation and assembly in the triaxial cell

Topic / Module 5: Consolidated drained (CD) triaxial test

Topic / Module 6: Consolidated undrained (CU) triaxial test

Topic / Module 7: Unconsolidated undrained (UU) triaxial test

Topic / Module 8: Unconfined compression Test

Teaching and assessment methods

Teaching method: Theory lectures

Assessment method: Test

Competencies acquired as a result of training (3–5 points)

Understanding of fundamental strength and deformation properties of soils

Acquire skills in laboratory analysis



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Learn standard techniques for geotechnical laboratory testing
Ability to analyze soil behavior under different loading conditions

Literature:

ASTM D2850-23 Standard test method for unconsolidated-undrained triaxial compression test on cohesive soils

BDS EN ISO 17892-8:2018 Geotechnical investigation and testing - Laboratory testing of soil - Part 8: Unconsolidated undrained triaxial test (ISO 17892-8:2018)

BDS EN ISO 17892-9:2018 Geotechnical investigation and testing - Laboratory testing of soil - Part 9: Consolidated triaxial compression tests on water saturated soils (ISO 17892-9:2018)