CENTER FOR INFRASTRUCTURE ENGINEERING STUDIES

Quality Geotechnical Testing Workshop and Short Course

By

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University Transportation Center Program at

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16. Abstract

This is a 3-day workshop/short course to teach practicing professionals techniques and procedures for conducting high quality geotechnical laboratory tests. Transportation facility design and construction begins with an investigation of the type, extent and quality of the foundation materials. The determination of the appropriate and accurate parameters is paramount in executing safe and economical design

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23rd GEOTECHNICAL LABORATORY TESTING SHORT COURSE
May 16-18, 2005

Format: This 3-day course has been offered for over 20 years and has become an important source of training for engineers, geologists, technicians and laboratory managers who wish to improve their knowledge of geotechnical laboratory procedures and techniques. The course includes laboratory demonstrations in UMR's state-of-the-art geotechnical engineering laboratories. After successful completion of the course, individuals will earn 2.7 CEUs, which is equivalent to 27.0 Professional Development Hours.

Attendees: 30 Professionals

QUALITY GEOTECHNICAL LABORATORY TESTING

MONDAY

7:30-8:00 a.m. - Final Registration
8:00-8:20 a.m. - Objectives – (Stephenson)
8:20-9:10 a.m. - Consolidation Testing: Overview Applications and Uses (Petry)
9:20-12:00 p.m. -The Consolidation Test. Equipment, Procedures, Errors, Reduction of Data, including Back Pressure and Controlled Gradient Tests(Petry)
1:00-1:50 p.m. – Consolidation continued(Petry)
2:00-3:50 p.m. - Permeability (Hydraulic Conductivity) Testing of Clays and Silts(Stephenson)
4:00-7:00 p.m. - On a rotating basis, work groups

1. Consolidation Testing Instructional Laboratory (Luna)
2. Permeability (Conductivity) Testing Demonstration of Coarse grained and Fine-grained Soil (Stephenson)

TUESDAY

8:00-8:50 a.m. – Back pressure and controlled gradient consolidation tests. (Petry)
9:00-9:50 a.m. – Graphical Construction and Plotting Results of the Consolidation Test (Petry)
10:00-10:50 a.m. -Shear Testing - Types of Apparatus and Tests (Stephenson)
11:10-12:00 p.m. - Direct Shear Testing (Stephenson)
1:00-2:20 p.m. - The Basic Principles of Triaxial Testing (Luna)
2:30-3:50 p.m. - Triaxial Shear Tests - CD, **CU**, and UU (Luna)
4:00-7:00 p.m. -On a rotating basis, work groups

1. Triaxial Instructional Laboratory (Stephenson)
2. Demonstration of Direct Shear Testing (Luna)

WEDNESDAY

8:00 -9:50 a.m. – Triaxial Tests Continued: Methods of Applying Confining Pressure, Measurement of Axial Applied Forces and Bushing Friction
10:00-12:00 p.m.-Effects of Membranes and Drains, Leakage through Membranes, Valves and Fittings, End Restraint, Loading Rates for Drained Tests (S Tests) (Luna)
1:00-4:00 p.m. - Triaxial Shear Tests - Measurement of Pore Water Pressure, Loading Rates When Pore Pressures are to be Measured (Stephenson)

Graduate student Rachel Mudd demonstrating triaxial testing procedures.

Graduate student Benjamin Gallagher demonstrating triaxial testing procedures.