CE 352 – Geotechnical Engineering Lab.

Code and Name: CE 352 – Geotechnical Engineering Lab.
Credit Hours: 1 (Lab. / Practical 2Hrs)

Textbook:
- Geotechnical Engineering: Principles and Practices: D. P. Coduto, M. R. Yeung and W. A. Kitch Edition, 2010, Third Edition

Other References:
- *Relevant international standards (ASTM, BS, AASHTO)*
- *Handouts: distributed from time to time to provide more information on the topic.*

Course Description:

Soil description and identification, Specific gravity test, Moisture content test, Sieve analysis and hydrometer test, Atterberg limits tests, Standard and modified compaction tests, California bearing ratio test, Constant and falling head permeability tests, Consolidation test, Direct shear test, Unconfined compression test.

Pre-requisites: None
Co-requisites: CE351 Geotechnical Engineering

Course Learning Outcomes:
With relation to ABET Student Outcomes (From Fall 2019-SOs: 1-7)

1. Conduct classification, physical and mechanical tests on soils (6).
2. Demonstrate familiarity with data collection and ability to interpret and analyze the results by using the specific standards (6).
3. Demonstrate the ability to write clear technical lab reports (3).
4. Demonstrate the ability to work in a team environment (5).

Topics to be covered:

- Introduction to Soil and Rock Mechanics Laboratory
- Water content test
- Specific density of soil
- Soil classification: Sieve Analysis & Soil classification: Hydrometer test
- Soils classification: Atterberg limits (liquid limit and plastic limit tests)
- Proctor (compaction) test
- California Bearing Ratio (CBR) test
- In-situ density test (sand cone method)
- Specimen preparation for permeability and consolidation tests
- Permeability tests (constant head & falling head)
- Consolidation test
- Direct shear test

Grading Policy:
The grading for the course is: 60% coursework and 40% Final Exam. The course work consists of two quizzes (14%) It also includes lab. reports (40%) and class participation (6%).