



**Course Name:**

Soil Mechanics Laboratory

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| <b>Course Number:</b> 20-401        | <b>Credit:</b> 1                       |
| <b>Program:</b> Undergraduate       | <b>Course Type:</b> Technical required |
| <b>Prerequisite:</b> Soil Mechanics | <b>Corequisite:</b> ---                |

**Course Description (Objectives):**

The objective of this course is conducting the main laboratory tests on soils for the students to obtain the engineering properties of soils and extracting the required parameters for geotechnical design based on the laboratory test results.

**Course Content (outline):**

- Sampling and specimen preparation
- Grain size Distribution (Sieve -Hydrometer)
- Atterberg's Limits
- Compaction (Standard and Modified Proctor Tests)
- Specific Gravity ( $G_s$ )
- In-situ field density
- California Bearing Ratio (CBR)
- Sand Equivalent Test
- Direct shear Test
- Unconfined Compression Test (Uniaxial Test)
- Tri-axial Test
- Consolidation Test
- Coefficient of permeability
- Flow network using Electrical Analogy

**References:**

- Soil Testing Manual, R.W. Day, 2001.
- Manual of Soil Laboratory Testing, K.H. Head, 1982