

Geotechnical Engineering Laboratory

معمل هندسة الجيوتقنية

Introduction:-

The construction and roads sector is based on studying the properties and the characteristics of the soil layers below the foundation, or the materials and soil used in construction. Therefore, the Geotechnical Engineering Laboratory serves the Construction and Roads Division in courses for the Civil Engineering major.

Objectives:-

- a) Introducing students to the importance of specifications in receiving works in projects.
- b) Providing undergraduate students with the practical application of engineering projects and international specifications.
- c) Raising the efficiency of civil engineering students to the level of applied standards and compliance with the Saudi Building Code.
- d) Providing an integrated scientific platform for academic studies and scientific research.

Outcomes-:

After completing the required courses, the students will be familiar with the full knowledge of the nature of the soil and materials, the requirements of the general and special project specifications, the design and construction of the building as required by the special building code, and thus they will have the sufficiently effective ability to implement projects with specialization in this field on the ground.

The Geotechnical Engineering Laboratory contains soil testing equipment. Figures (from 1 to 13) and table (1) show some of the laboratory equipment.



الشكل (1) معمل هندسة الجيوتقنية

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Person in Charge: [Dr. AL Bustami](#)



Fig(2) Unconfined compression Test



Fig (3) Shear Box Test

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Fig (4) Triaxial Test



Fig.(5) Oedometer, Consolidation of soil

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Fig (6) Automatic Soil Compactor



Fig (7) Insitu Field Density Sand Cone Method

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Fig (8) Specific Gravity & Water Absorption



Fig. (9) Permeameter (Constant & Falling Head)

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Fig. (10) Sieve Shaker (Soil Grain Size Analysis)



Fig. (11) California Bearing Ratio

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Fig. (12) Hydrometer Test (Grain Size Analysis)



Fig. (13) Laboratory Vane Shear Apparatus

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Table (1) List of Devices, Equipment and Tools of Scientific Research

No	Apparatus	Qt.	Location	ID
1	Digital Direct/Residual Shear	2	8178	GEO-001
2	Consolidation Frame	3	8178	GEO-002
3	Digital Tri-test 50	1	8178	GEO-003
4	Multiplex 50, mechanical load frame for CBR	1	8178	GEO-004
5	Multiplex 50, mechanical load frame for Uniaxial Compression Strength	1	8178	GEO-005
6	Automatic Soil Compaction	2	8178	GEO-006
7	Muffle furnace	1	8178	GEO-007
8	Laboratory Vane Apparatus	1	8178	GEO-008
9	Liquid Limit Device	4	8178	GEO-009
10	Sieve Shaker	1	8178	GEO-010
11	Sand Replacement Cone	1	8178	GEO-011
12	Hydrometer Constant Temperature Bath	1	8178	GEO-012
13	Bench-mounting Mixer	2	8178	GEO-013
14	Oven 225 Lit.	1	8178	GEO-014
15	COMBINATION PERMEAMETER	1	8178	GEO-015

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