

Transportation Engineering Laboratory

Definition

Transportation engineering Laboratory is the application of technology and scientific principles to the planning, functional design, operation and management of facilities for any mode of transportation in order to provide safe, efficient, rapid, comfortable, convenient, economical, and environmentally compatible movement of people and goods. It is a sub-discipline of civil engineering and of industrial engineering. Transportation engineering is a major component of the civil engineering disciplines, according to specialization of academic courses and main competences of the involved territory.

Laboratory Objectives

- a. To introduce the students with the principles and practice of transportation engineering which focuses on, traffic and Transportation engineering and highway engineering.
- b. Provide a platform to undergraduate and graduate students for practical implementation of Transportation Engineering projects.
- c. Bring Engineering students to the level of industrial standards in field of Transportation Engineering.
- d. Provide a platform for integration of academics and research.

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Outcomes

- a. The students after completion of their courses will have an in depth knowledge in Traffic Engineering, Transport Planning, Highway Design and Construction, Sustainable Urban and Transport Development and will be efficient enough to take up projects in the field.
- b. As the students have a hand on experience in working with the Software, live projects, field visits to various organizations and training sessions during the course of study, they will be fully fledged Transport and Highway Planner.

The Transportation Engineering Laboratory contains equipments for testing soils, aggregates and bituminous materials (road pavements materials). The followings Figures (1 to 11) and Table (1) illustrate a lay out of this laboratory and some views of its equipments.



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Figure (1): Lay out - Transportation Engineering Laboratory

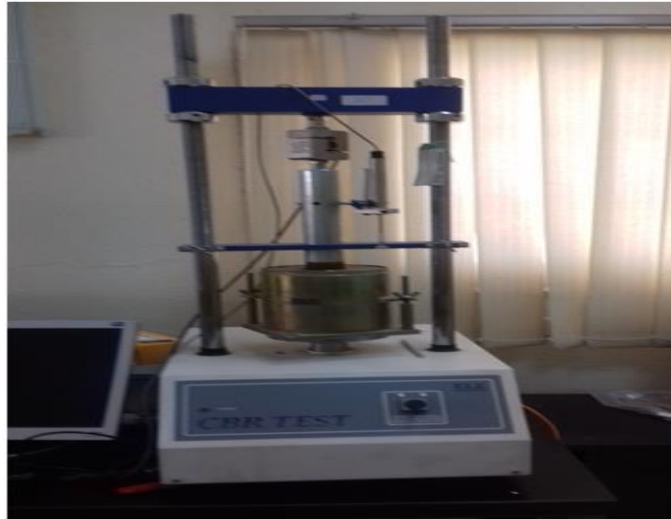
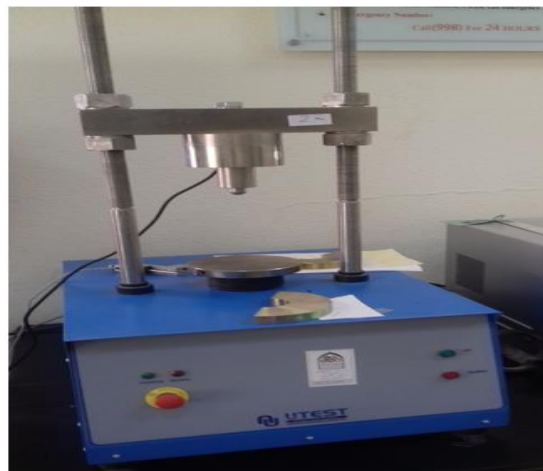


Figure (2): California Bearing Ratio (CBR) Machine



Figure (3): Penetration Test Machine



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Figure (4): Automatic Marshall Stability Test Machine



Figure (5): Universal Testing Machine (UTM)



Figure (6): Bench-mounting Mixer



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Figure (7): Ductility Testing Machine



Figure (8): Specific gravity and Water Absorption



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Figure (9): Automatic Soil Compactor

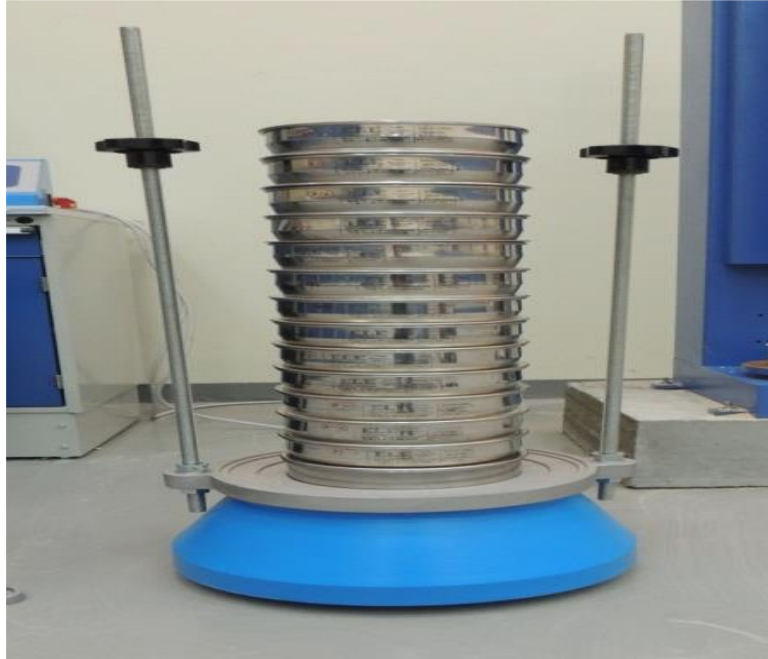


Figure (10): Set of sieves and mechanical sieve shaker



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Figure (11): Saybolt Viscometer

Table (1) Transportation Engineering Laboratory equipments

No	Instrument name	إسم الجهاز
1	Laboratory CBR Set, Motorized	جهاز تحميل كاليفورنيا
2	Automatic Asphalt Penetrometer	جهاز قياس إختراق الأسفلت أوتوماتيك
3	Electronic Marshall Stability-Flow Tester	جهاز مارشال للزحف والثبات - الالكتروني
4	Universal Testing Machine	ماكينة إختبار الأسفلت الشاملة
5	Bench-mounting Mixer	خلاط لزوم الخلطات الأسفلتية
6	Ductility testing machine	جهاز إختبار ممطولية الأسفلت
7	specific gravity and Water Absorption	قياس الكثافة والإمتصاص للركام الخشن
8	Automatic Soil Compactor	جهاز دمك التربة الأتوماتيكي
9	Laboratory Sieve Shaker	هزاز مناخل التدرج
10	Saybolt Viscometer	جهاز فحص معامل اللزوجة للبيتومين- سيبولت
11	Bench Ovens	فرن تجفيف
12	Asphalt Centrifuge Extractor	جهاز فصل الأسفلت بالطرد المركزي
13	Plastic Limit Set	مجموعة جهاز حد اللدونة
14	Hot Plate 39 in	سخان قرص صلب كهربائي (39 بوصة مربعة)
15	Hot Plate 144 in	سخان قرص صلب كهربائي (144 بوصة مربعة)
16	Hot Plate 288 in	سخان قرص صلب كهربائي (288 بوصة مربعة)
17	Large Capacity Sample Splitter	قسام العينات
18	Universal Core Drilling Machine	جهاز قص عينات لبية
19	Gradation Sieves Set	مجموعة مناخل التدرج الحبيبي
20	Benkelman Beam	جهاز قياس إنحراف الأرصفة المرنة
21	Scales and Electronic Balances	موازين بسعة مختلفة
22	Specific Gravity (Rice) Test Set – Type F	جهاز قياس الكثافة - رايس
23	Rolling Thin Film Oven (RTFO)	فرن تسخين الأسفلت
24	Automatic Ring and Ball Apparatus	جهاز قياس سوفتينك بوينت
25	Wheel Tracking Machine	جهاز تتبع العجلات

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