

Subsurface Investigation Laboratory
01GT0207 (LC)
Objective of the Course:

- To provide skill to carry out basic and advance test on soil in laboratory

Credit Earned: 2
Students learning outcomes:

After successful completion of the course, it is expected that student will be able to,

- To Students can plan subsurface investigation based on the requirement of civil engineering project and site condition. Can finalize depth and number of boreholes
- To Students can execute different subsurface exploration tests, collect disturbed/undisturbed samples for laboratory tests and can suggest design parameters
- To Students can execute field test

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	CSE (I)	IA (M)	Viva (V)	Term Work (TW)	
00	00	02	01	00	00	00	50	50	100

Detailed Syllabus

Sr. No.	List of Experiments
1	Auger boring
2	wash boring
3	percussion drilling
4	rotary drilling
5	Standard Penetration Test
6	Prepare a field bore log
7	Prepare SBC report based on SPT Test
8	Static Plate Load Test
9	Cyclic Plate Load Test
10	Prepare Report based on PLT Test

Geotechnical Engineering

11	SCPT Test
12	DCPT Test
13	Seismic Refraction Test
14	Cross Hole Test

Suggested Theory Distribution

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
5%	5%	20%	25%	25%	20%

Instructional Method and Pedagogy:

1. Use of Learning Management system like canvas
2. Demonstration through presentations on power point and videos and lectures
3. Brainstorming and group discussion sessions
4. Collaborative learning

References

1. Alam Singh and Chowdary, G.R., "Soil Engineering in Theory and Practice (Vol.2) Geotechnical Testing and Instrumentation, CBS Publishers and Distributors, New Delhi,2006.
2. I.S. Code of Practice (2720): Relevant Parts, as amended from time to time.
3. Bowles, J.E., Engineering properties of soils and their measurements, McGraw Hill, 1992.
4. Dunnycliff J & Gree G E, "Geotechnical Instrumentation for Monitoring Field Performance", John Wiley, 1988
5. Schnaid, F., " In Situ Testing in Geomechanics", Taylor and Francis. 2009