

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 perform basic tests on soil to identify its index properties.
- To carry out advanced laboratory tests to identify the engineering properties of soil

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	04	02	00	00	00	50	50	100

Detailed Syllabus

Sr. No.	List of Experiments
1	Sieve Analysis – Hydrometer Analysis – Atterberg limits – Specific gravity – Standard proctor compaction – Field density – Free swell index – California bearing ratio – Permeability
2	Determination of MDD and OMC for various energy level
3	Determination of shear parameters for different drainage condition in triaxial machine
4	Study of stress-strain curve of different types of soil tested in triaxial machine
5	Determination of shear parameters for different loading rate in triaxial machine

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.

Geotechnical Engineering

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.