Course Type	Course Code	Name of Course	L	T	P	Credit
DC	ESC 355	Environmental Geotechnology (P)	0	0	2	2

Course Objective
• To learn the application of soil mechanics in soil improvement, soil remediation, subgrade-drainage system, enhancing slope stability in mining areas, hilly regions, etc.
Learning Outcomes
Upon successful completion of this practical course, the students will learn about various methods for determining physical parameters of soil.

Unit No.	Experiments	Lecture Hours	Learning Outcome
1	Identification of Soil	2	Identification of different types of soil.
2	Sampling and Grain Size Distribution	2	The students will learn to separate various coarse size fraction of the soil for geotechnical analysis.
3	Distribution of Specific Gravity of Soil	2	This unit will help the students in determining the sp.gr of various kinds of soils
4	Atterberg Limits	2	The students will be able to learn about the consistency of soil with various moisture conditions.
4.1	Plastic Limit		
4.2	Liquid Limit		
4.3	Shrinkage Limit		
5	Determination of Density of Soil	2	Determination of bulk and dry density
6	Determination of Relative Density & Void Ratio of Soil	2	Determination of relative density and void ratio with change in various loads
7	Sedimentation Analysis	2	The students will learn to separate various fine size fraction of the soil for geotechnical analysis.
8	Determination of Permeability of Soil	2	The students will learn to determine permeability of soil in constant head and falling head conditions.
8.1	Falling Head Permeability Test		
8.2	Constant Head Permeability Test		
9	Compaction Test (Standard & Modified)	2	The students will learn to compact the soil by mechanical means.
10	Consolidation Test	2	The students will learn to consolidate a fully saturated soil sample by application of load
11	Triaxial Test	2	The students will learn to shearing strength of soil under undrained condition
12	Direct Shear Test	2	The students will learn to shearing strength of soil under drained condition
13	Free Swell & Swelling Pressure of Soil	2	The students will learn the Free Swell & Swelling Pressure of expansive soil

Text Books:

1. Soil Mechanics Laboratory Manual by B.M.Das, Oxford University Press.

Reference Books:

IS 2720 , Indian Standards for Soil Testing