RAJASTHAN TECHNICAL UNIVERSITY

TEACHING SCHEME, B.Tech. (CIVIL ENGINEERING)

FINAL YEAR (5TH SEMEMSTER)

7CE1-GEOTECHNICAL ENGINEERING-I

S.No.	Unit	Contents	Lecturer No.
1.	1.	i) Soil and soil-mass constituents ii) Inter-relationships of the above iii) Determination of index properties of soil. iv) Particle size distribution, sieve and v) Sedimentation analysis. vi) Consultancy limits. vii) Classification of soil for general engineering	1 1 1 1 2 1 2
2.	2.	i) Clay mineralogy. ii) Soil structure. iii) Soil water absorbed and capillar. iv) Darcy's law of permeability of soil. v) Determination of in laboratory. vi) Field pumping out tests. vii) Factors affecting permeability. viii) Permeability of stratified soil masses.	1 1 1 1 1 2 1 1
3.	3.	i) Stresses in soil mass: total, effective and neutral pressure. ii) Calculation of stresses. iii) Influence of water table on effective stresses. iv) Quicksad phenomenon, Seepage and Seepage Pressure. vi) Laplace's equation for seepage. vii) Flow net and its construction. viii) Uplift pressure, piping. ix) Principle of drainage by electro Osmosis, phriatic line. Flow net through earth dam.	2 1 1 1 1 1 1 2
4.	4.	i) Mohr's circle of stress. ii) Shearing strength of soil. iii) Coulomb's failure envelope. iv) Determination of shear parameters by Direct Shear Box. Triaxial and unconfined compression test apperatuses. v) Typical stress-stain curves for soils. vi) Typical failure envelopes for cohesion less soils and normally consolidated clay soils.	1 1 1 3 1 1
5.	5.	i) Principles of soil compaction. ii) Laboratory compaction tests; iii) Measurement of field compaction. iv) Factors affecting compaction. v) Soil stabilization.	1 1 1 1 1
		Total	**40**

(Prof. H.D. Charan)