

CE 317 - GEOTECHNICAL ENGINEERING I

COURSE OUTLINE

- (1) Basic Concepts
 - Introduction to soil/rock mechanics problems
 - Phase relationships
 - Soil classification

- (2) Clay Minerals and Soil Structure
 - Clay Minerals
 - Water in soils
 - Soil Fabric

- (3) Compaction
 - Optimum moisture content
 - Maximum dry density
 - Laboratory and field density tests

- (4) Flow of water in soils
 - Permeability
 - Seepage
 - Heads
 - Effective stress

- (5) Consolidation
 - Consolidation test
 - Preconsolidation pressure
 - Magnitude of settlement
 - Time rate of settlement
 - Stress distributions

- (6) Shear strength of soils
 - Mohr Circle
 - At Rest condition
 - Testing methods
 - Failure theories
 - Stress Paths
 - Drained and undrained behavior
 - Shear strength of sand
 - Shear strength of clay