EVPC3005 ENVIRONMENTAL GEO TECHNOLOGY (3-0-0)

Course Objectives:

- To acquire basic knowledge of soil structure and properties
- To classify soil and understand its compressibility and consolidation
- To identify geotechnical applications in slope stability
- To apply of soil mechanics in environmental engineering

Module I (8 hours)

Soil, Complexity of soil nature, formation, regional deposits, solid-water-air relationships and Index properties.

Module II (8 hours)

Classification of soil, soil structure and clay minerals, soil compaction, effective stress, capillarity and permeability, seepage through soils, flownets, drainage and dewatering, compressibility of soil and consolidation, shear strength of soils.

Module III (8 hours)

Geotechnical applications in slope stability, factor of safety. Site investigation and subsoil exploration.

Module IV (8 hours)

Application of soil mechanics in environmental engineering, land reclamation, soil erosion and control. Application of Geotextiles.

Couse outcomes: At the end of the course students will be able to:

- Understand complexity of soil and formulate various relationships
- Classify soil and analyse the seepage through soils
- Carryout compressibility and consolidation analysis of soil
- Perform stability analysis of soil
- Able to use soil mechanics for land reclamation, soil erosion and control

Books :

1. Sarsby R. W. Environmental Geotechnics. Inst of Civil Engineers Pub, 2nd edition 2013
2. Datta, M., Gulhati, S. Geotechnical Engineering, McGraw Hill Education,2007
3. Reddy K.R., Sharma H.D., Geoenvironmental Engineering: Site Remediation, Waste Containment, and Emerging Waste Management Technologies. John wiley,2004
4. Saha M. Geoenvironmental Engineering, 2025
5. Sumalatha J. and Vinod B.R.. Environmental Geotechnical Engineering, 2003