Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

CE5350 – Geosynthetics and Reinforced Soil Structures

Credit Distribution: C:9 **L:**3 **T:**0 **P:**0 **E:**0 **O:**6 **TH:**0

Course Type: Theory

Description:
Expose the Students about geosynthetics and their civil engineering applications.

Course Content:
Types of polymers and manufacture of geosynthetics â€? Principles, concepts and reinforcement Mechanism â€? Determination of properties of geosynthetics â€? Design of road bases and earth beds using geosynthetics â€? Design of reinforced soil retaining walls â€? Design of reinforced soil embankments â€? Soft ground improvement using PVDs & other geosynthetics â€? Drainage & Filtration application of geosynthetics â€? Applications of geosynthetics in landfills

Text Books : Nil

Reference Books:

1. BS8006 (2010) Code of Practice for Strengthened/reinforced soils and other fills, British Standards Institution, U.K. 2. Federal Highway Administration Guidelines for Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes â€“ Volumes I & II, Report No. FHWANHI- 10-025, Washington, D.C. 2010 3. Koerner, R.M. (2012) Designing with Geosynthetics, Vols. 1&2, 6th Edition, Xlibris Corporation, USA. 4. Jewell, R.A. (1996) Soil reinforcement with geotextiles, CIRIA & Thomas Telford, London, U.K. 5. John, N.W.M. (1987) Geotextiles, Blackie & Son Ltd., London, UK. 6. Jones, C.J.F.P. (2010) Earth Reinforcement and Soil Structures, Thomas Telford, London, U.K. 7. Saran, Swami (2006) Reinforced Soil and its Engineering Applications, I.K. International, New Delhi. 8. Shukla, S.K. (2012) Handbook of Geosynthetic Engineering, 2nd Edition, ICE Publishing, London, U.K. 9. Papers from Geotextiles and Geomembranes and Geosynthetic International journals.

Prerequisite: NIL