

## Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

---

### CE4520 – Principles of Reinforced Soil Structures

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

**Course Type:** Theory

**Description:** Introduction of the concepts of geosynthetics and reinforced soil structures

**Course Content:**

- Different types of geosynthetics, their properties and manufacture
- Strength of reinforced soil
- Design of reinforced soil retaining walls
- Design of reinforced soil slopes
- Design of reinforced soil foundations
- Pavement applications of geosynthetics
- Drainage and filtration applications of geosynthetics
- Landfills with geosynthetics

**Text Books:** Nil

**Reference Books**

- BS8006 (2010) Code of Practice for Strengthened/reinforced soils and other fills, British Standards Institution, U.K.
- FHWA (2011) Guidelines for Mechanically Stabilised Earth Walls and Reinforced Soil Slopes, Design and Construction Guidelines, Federal Highway Administration Report No. FHWA/NHI-00-0043, Washington, D.C. 2001
- Hausmann, M.R. (1990) Engineering principles of ground modification, McGraw-Hill Publishing Co., New York, N.Y. USA
- Koerner, R.M. (2012) Designing with Geosynthetics, Vols. 1&2, 6th Edition, Xlibris Corporation, USA.
- Jewell, R.A. (1996) Soil reinforcement with geotextiles, CIRIA & Thomas Telford, London, U.K.
- John, N.W.M. (1987) Geotextiles, Blackie & Son Ltd., London, UK.
- Jones, C.J.F.P. (2010) Earth Reinforcement and Soil Structures, Thomas Telford, London, U.K.
- Saran, Swami (2006) Reinforced Soil and its Engineering Applications, I.K. International, New Delhi.
- Shukla, S.K. (2012) Handbook of Geosynthetic Engineering, 2nd Edition, ICE Publishing, London, U.K

**Prerequisite:** NIL