INTENDED AUDIENCE: Two basic courses in geotechnical engineering at UG level that covers fundamentals of soil mechanics and designs of retaining walls, slope stability analysis and foundations is the required background for this course.

COURSE OUTLINE: This course will deal with the geosynthetics as construction materials in civil engineering projects. It will introduce the concept of geosynthetics, their manufacture and their behavior and their applications in different civil engineering designs. The support for the course will be in the form of pre-recorded videos, power point slides and supplementary reading materials given every week.

ABOUT INSTRUCTOR: Prof. K. Rajagopal: Professor, Department of Civil Engineering, IIT Madras. He has more than 25 years of experience with teaching and research in geosynthetics and reinforced soil structures.

COURSE PLAN:
- Week 1: Introduction to Geosynthetics
- Week 2: Strength of reinforced soils
- Week 3: Different Types of Soil Retaining Structures
- Week 4: External Stability Analysis of Reinforced Soil Retaining Walls
- Week 5: Design of Reinforced soil Retaining walls - simple geometry
- Week 6: stability analysis of soil slopes - Infinite slopes
- Week 7: stability analysis of reinforced soil slopes - bilinear wedge analysis
- Week 8: Reinforced soil for supporting shallow foundations
- Week 9: Accelerated consolidation of soft clays using geosynthetics
- Week 10: Drainage application of geosynthetics
- Week 11: Erosion control using geosynthetics
- Week 12: Geosynthetics for construction of municipal and hazardous waste landfills