

K L UNIVERSITY
GROUND IMPROVEMENT TECHNIQUES (11 - CE 331)

Pre – requisite: 11 - CE 206

SYLLABUS

L	T	P	Cr
3	0	0	3

Stabilization - objectives, Introduction to different methods – Mechanical stabilization- Types of rollers, effect on engineering properties- Chemical stabilization- cement stabilization- factors affecting soil cement mixing-admixtures- lime stabilization-effect of lime on soil properties-construction of lime stabilized bases-bituminous stabilization. **Dewatering**-well-point system-electro osmosis-pre-loading- sand drains- methods of installation - PVD's, Types, Design, construction -stone columns in clays - vibro-flotation in sands and clays, Designs as per BIS and case histories. **Grouting**: Introduction to grouts and grouting- basic functions – groutability ratio –classification of grouts, properties of grouts - grouting applications- Impermeability grouting seepage control in soil under dams and for cut off walls- seepage control in rock under dams-stabilization grouting for under pinning. Geosynthetics – Types, functions, typical Applications of filtration and drainage, use in road /airport pavements and strengthening existing pavements. **Earth Reinforcement**- mechanism and concept - laboratory behavior of reinforced soil-Reinforced Soil retaining Structures – Types of Reinforcements, fascia and connections - design concepts and stability analysis – Use in India

TEXT BOOKS:

1. Purushothama Raj, P., Ground Improvement Techniques, Laxmi Publications (P) Ltd., New Delhi, 2005
2. Relevant I.S. Codes

REFERENCES :

1. Foundation Analysis and Design by J.E. Bowles, MacGraw Hill, 1996.
2. Principles of Geotechnical Engineering by B. M. Das, Thomson Publications.
3. Earth Reinforcement and Soil structures by C. J. F. P. Jones,
4. Designing with Geotextiles by Koerner, R.M. (2005)
5. IRC (1995). Ground Improvement Techniques
6. Stabilization of clays, Indian Raods congress, New Delhi , SPL Publication No. Venkatappa Rao, G and Ramana, G.V. (2000)