

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Civil (Geotechnical Engineering)

Semester: I

Subject Name: **Soil Improvement Techniques (Inter Disciplinary Elective - I)**

Subject Code: **714306**

Sr. No	Course Content
1	Types of Soil Structure – Clay Minerals – Characteristics and Construction of mineral groups – soil water
2	Definitions – Principles – Objectives – Field compaction methods – suitability of field compaction methods – field compaction controls – methods
3	Weak Deposits- Identification-Problems associated with weak deposits- Mitchel chart of applicability of treatment methods
4	Insitu compaction of cohesion less soil – Injection and grouting – stabilization of soils – Preloading and sand drains , Prefabricated vertical drain
5	Vibroflotation - Stone column – Encased stone column , Stone column design – strengthening of subsoil by stone column installation
6	Earth reinforcement , Geosynthesics , Mechanically stabilized earth wall , Anchor
7	Ground Water Control – Methods – Diaphragm techniques – well point system

Reference Books:

1. Koerner R M, “Construction and Geotechnical Methods in Foundation Engineering”, McGraw Hill Publishing Co. Ltd., 1984
2. Hausmann M.R. ‘Engineering Principles of Ground Modification’ McGraw Hill Publishing Company, New York - 1990.
3. Zeevart L, “Foundation Engineering for Difficult Subsoil Conditions”
4. Bell F G, “Foundation Engineering in Difficult Ground”, Butterworth, 1978.
5. Harr M E, “Ground Water & Seepage”
6. Van Impe W.F, ”Soil Improvement technique and their evaluation“
7. Rao V.V S, “Ground Improvement techniques“