

GUJARAT TECHNOLOGICAL UNIVERSITY
M.E. Civil (Geotechnical Engineering)
Semester: I

Subject Name: **Soil Dynamics**
Subject Code: **714302**

Sr. No	Course content
1.	Introduction : Nature of dynamic loads, Free vibrations of spring mass systems, Forced vibrations, Viscous damping -principles of vibration, measuring equipments
2	Dynamic stress : Deformation and strength of soils -dynamic bearing capacity and earth pressure -Effect of transient and pulsating loads - resonant column apparatus -field tests -typical values of soil constants
3	Liquefaction of soils: Factors influencing -liquefaction potential -analysis from standard penetration data
4	Vibration isolation: Passive and Active isolation - Use of springs and damping materials -Construction aspects of machine foundations

References Books:

1. Das B M, "Fundamental of Soil Dynamics", Elsevier Scientific Publishing Co., New York, 1983
2. Barkan D D, "Dynamics of Bases of Foundations", McGraw Hill Book Co. Inc., New York
3. Srinivashula P & Vaidyanathan C V, Handbook of "Machine Foundation", McGraw Hill, 1986
4. Prakash S & Puri V K, "Foundations for Machines", McGraw Hill, 1987
5. Bykhovsky I, "Fundamentals of vibration engineering "
6. Winterkorn Hans, Fang Hsai Yang, "Foundation Engg Handbook ", Galgottia Publications