GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 2

Civil Engineering (Computer Aided Structural Analysis & Design)

Subject Name Advanced Foundation Engineering(Major Elective II)

Sr. No	Course content
1.	Critical study of different bearing capacity theories [Mayerhof, IS, Skempton's]. Foundations on different soil deposits having significant characteristics & settlement study. Foundations on non-uniform soils.
2.	Types of rafts, conventional rigid design of raft.
3.	Nature & complexities of soil structures interaction problems, subgrade modulus of soils. Application of advanced technique of analysis of beams & rafts using FEM.
4.	Concept, analysis & design of pier, abutment, cap, pile & well foundation with settlement considerations
5.	Study of natural frequency of machine foundation - soil system – dynamic soil properties. Types of machines and machine foundation – IS code of practice for design and construction of block foundation for reciprocating & impact machine and framed foundation for high speed rotary machines.
6.	Introduction to reinforced earth structures & geotextiles use of geotextiles & geogrids, elements of soil anchors.

Reference Books :

1. Analysis and design of foundation - J. Bowles
2. Foundation design -Teng
3. Soil mechanics & foundation engg. vol-II - V.N.S. Murthy
4. Principles of foundation Engg. - Braj Das
5. Pile foundation - M.J. Tomlinson
6. Handbook of foundation Engg. - Fang & Winker Korn