

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 4

Civil Engineering

Subject Code 140604

Subject Name Engineering Geology

Sr.No	Course contents
1.	Branches and Scope of Geology
2.	Physical geology- Geological agents and their action-weathering-volcanism- earthquake and plate tectonics
3.	Elements of crystallography, mineralogy and Petrology- Types of rocks, genesis , texture, structure and physical chemical characters, building stones
4.	Structural geology- Types of structures and classification and their effect on Civil Engineering projects and Geological mapping
5.	Hydrogeology- Groundwater and occurrence, investigations, quality, artificial recharge
6.	Geology in Civil Engineering- Tunnels, dams-reservoirs-bridges-runways-roads and buildings. Slope failures and landslides. Investigations, Remote Sensing and GIS applications

Reference Books:

1. Bangar, K.M, Principles of Engineering Geology, Standard Publishers Distributors, 1995, New Delhi
2. Billings, M.P., Structural Geology, Prentice-Hall India, 1974, New Delhi
3. Blyth, F.G.H and de Freitas, M.H. Geology for Engineers, ELBS, 1974 London
4. Gokhale, KVG.K and Rao, D.M., Experiments in Engineering Geology, Tata-McGraw Hill, 1981, New Delhi
5. Kesavulu, C. Textbook of Engineering Geology, Macmillan, India Ltd., 1993, New Delhi
6. Lilesand, T.M. and Ralph W. Keifer., Remote sensing and Image Interpretation, John Wiley & Sons, 1987, New York.
7. Reddy, V. Engineering Geology for Civil Engineers; Oxford & IBH, 1997, New Delhi
8. Todd, D.K. Groundwater Hydrology, John Wiley & Sons, 1980, New York