GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. Semester II
Civil Engineering (Structural Engineering)

Subject: - Advanced steel structures (Major Elective III)

Sr. No.	Course Content
1.	Introduction: Design requirements and design process, Material behavior, mechanical properties under static load, fatigue failure under repeated load, brittle fracture under impact load, Dead loads, imposed loads, wind loads, earthquake load, earth or ground water load, indirect forces and combination of loads.
2.	Plastic Design: Plastic design of continuous beams, Rigid jointed portal frames.
3.	Multi storey building : Introduction, loading, Analysis and design for gravity and lateral forces like wind load , earthquake loads.
4.	Cable Suspended Structures: Concepts, tensile structures, bridges.
5.	Design of connections: Bolted and welded connections. Semi rigid and rigid beam-column and beam-beam connections. Beam and column splices.
6.	Load calculations and design of steel truss Bridges for roadways and railways including seismic performance.

Reference Books :

1. Design of Steel Structure - Dayarathnam, P., A.H.Wheeler, 1990
2. Design of Steel Structures – N. Subrhamanyan, Oxford..
3. Steel Structure -Design and Behaviour, Salmon, C.G., and Johnson, J.E. Harper and Row, 1980.
4. Steel Design for Structural Engineers - Kuzamanovic,B.O. and Willems,N., Prentice Hall, 1977.
5. Steel Structures - William McGuire, Prentice Hall, Inc., Englewood Cliffs, N.J.1986.