GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 2

Civil Engineering (Computer Aided Structural Analysis & Design)

Subject Name Advanced Steel Structure Design (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.	Multi storey building : Introduction, loading, Analysis for gravity loads, computer analysis of rigid frame, advanced structural forms
3.	Cold form steel: Introduction, advantages of cold formed sections, load buckling, beam, axially compressed column, combined bending & compression, Tension members, Design on the basis of testing, empirical method & examples.
4.	Bridges : Introduction, steel used in bridges, classification of steel bridges load & load combination, Analysis of girder bridge, plate girder bridges, truss bridges, connection gusset

Reference Books :

1. Plastic Design of Low -rise frames, Horne, M.R., and Morris, L.J., Granada Publishing Ltd., 1981.
2. Steel Structure -Design and Behaviour, Salmon, C.G., and Johnson, J.E. Harper and Row, 1980.
3. Design of Steel Structure, Dayarathnam, P., A.H.Wheeler, 1990.
4. Steel Design for Structural Engineers, Kuzamanovic,B.O. and Willems,N., Prentice Hall, 1977.
5. Cold-formed Steel Structures, Wie - Wen Yu., McGraw Hill Book Company, 1973.
6. Steel Structures, William McGuire, Prentice Hall, Inc., Englewood Cliffs, N.J.1986.
7. Guidelines to design cold form section by Tata Steel