

Design of Steel structure

Code: CE602

Contact: 3L

Credits: 3

1. Materials and Specification :-Rolled steel section, types of structural steel , specifications [2]
2. i)Structure connections: Riveted, welded and bolted including High strength friction grip bolted joints. – types of riveted & bolted joints, assumptions, failure of joints ,efficiency of joints, design of bolted ,riveted & welded joints for axial load.
ii) Eccentric connection:- Riveted & bolted joints subjected to torsion & shear, tension & shear, design of riveted, bolted & welded connection. [8]
3. Tension members: Design of tension members, I.S code provisions. Permissible stresses, Design rules, Examples. [3]
4. Compression members: Effective lengths about major & minor principal axes, I.S code provisions. Permissible stresses, Design rules, Design of one component, two components and built up compression members under axial load. Examples.
Built up columns under eccentric loading: Design of lacing and batten plates, Different types of Column Bases- Slab Base , Gusseted Base, Connection details [8]
5. Beams: Permissible stresses in bending, compression and tension. Design of rolled steel sections, plated beams. simple Beam end connections, beam –Column connections. I.S code provisions [4]
6. Plate girders: Design of webs & flanges, Concepts of curtailment of flanges – Riveted & welded web stiffeners, web flange splices - Riveted, welded& bolted. [6]
7. Gantry Girder: Design gantry girder considering lateral buckling – I.S code provisions. [5]

Text & References:

1. Design of Steel structures N. Subramanian Oxford University Press
2. Design Of Steel Structures - S.K.Duggal Tata Mc-Graw Hill , New Delhi
3. Design of steel structures A.S.Arya and J.L.Ajmani Nemchand& Bros.
4. Design of steel structures, Vol. I & II Ramachandra
5. Design of steel structures PasalaDayaratnam – A.H.Wheeler& Co Ltd. 1990
6. Design of steel structures B.S.Krishnamachar and D.AjithaSinha – Tata McGraw – Hill publishing Co. Delhi.
7. Design of steel structures Ramamurtham
8. IS 800 – 2007(Latest Revised code) Bureau of Indian Standard
9. S.P.: 6(1) – 1964 Structural Steel Sections