

DESIGN OF STEEL STRUCTURE (3-0-0)

Module I

Introduction, advantages/disadvantages of steel, structural steel, rolled steel section, various types of loads, design philosophy

Limit state design method, limit states of strength and serviceability, probabilistic basis for design

Riveted, bolted and pinned connections,

Welded connections-assumptions, types, design of fillet welds, intermittent fillet weld, plug and slot weld, failure of welded joints, welded joints vs bolted and riveted joints

Module II

Tension members, types, net cross-sectional area, types of failure, slenderness ratio, design of tension members, gusset plate.

Compression members, effective length, slenderness ratio, types of cross-section, classification of cross-section, design of axially loaded compression members, lacing, battening, design of column bases, and foundation bolts.

Module III

Design of beams, types of c/s, lateral stability of beams, lateral torsional buckling, bending and shear strength, web buckling and web crippling, deflection, design procedure.

Plate girders- various elements and design of components

Eccentric and moment connections, roof trusses

Reference Books:

1. Limit State Design of Steel structures by S.K. Duggal, TMH Publication
2. Steel Structures- Design & Practice by N. Subramanian, Oxford University Press
3. Design of steel structures by S.S.Bhavikatti, I.K. International Publishing house, New Delhi.
4. Design of Steel Structures by K. S. Sairam- Pearson