PCI5I102 DESIGN OF STEEL STRUCTURE (3-0-1)

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.

Module IV

Plate girders- various elements and design of components Eccentric and moment connections, roof trusses

Text Books:

1. Design of Steel Structures- Limit State Method by N. Subramanian, Oxford University Press
2. Limit State Design of Steel structures by S.K. Duggal, Mc-Graw Hill

Reference Books:

1. Design of steel structures by S.S.Bhavikatti, I.K. International Publishing house.
2. Design of Steel Structures by K. S. Sairam, Pearson
3. Steel Design by William T. Segui, Cengage Learning
4. Fundamentals of Structural Steel Design by M.L.Gambhir, Mc Graw Hill
5. Steel Structures-Design and Practice by N. Subramanian, Oxford University Press