

Year & Sem: E2S1	Course Code: CE2202	Course Name: Design of Steel Structures	No. of Credits: 4	L 2	T&PS 2	P 0
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UNIT – I: Bolted and Welded connections:

Introduction, Advantages and disadvantages of welding- Strength of welds-Butt and fillet welds: Permissible stresses – IS Code requirements. Design of welds fillet weld subjected to moment acting in the plane and at right angles to the plane of the joints, beam to beam and beam to Column connections.

UNIT – II: Beams:

Allowable stresses, design requirements as per IS Code-Design of simple and compound beams- Curtailment of flange plates, Beam to beam connection, check for deflection, shear, buckling, check for bearing, laterally unsupported beams.

UNIT –III: Tension Members And Compression Members:

General Design of members subjected to direct tension and bending – effective length of columns. Slenderness ratio – permissible stresses. Design of compression members, struts etc.

UNIT – IV:Design Of Built Up Compression Members

– Design of lacings and batten. Design Principles of Eccentrically loaded columns splicing of columns. Design of Column Foundations: Design of sign of slab base and gusseted bases. Column bases subjected moment.

UNIT - V :Roof Trusses:

Different types of trusses – Design loads – Load combinations IS Code recommendations, structural details – Design of simple roof trusses involving the design of purlins, members and joints – tubular trusses.

UNIT – VI: Plate Girder & Gantry Girder:

Design consideration – I S Code recommendations Design of plate girder Welded – Curtailment of flange plates stiffeners – splicing and connections. Gantry girder impact factors - longitudinal forces, Design of Gantry girders.

References/Text Books:

1. Design of Steel Structures- Limit State Method by N Subramanian, Oxford Press, New Delhi
2. Design of steel structures by S.K. Duggal, Tata Mcgraw Hill, New Delhi
3. Design of steel structures by P Dayaraththam, S Chand Publication, New Delhi
4. Comprehensive Design of Steel structures, by B.C. Punmia, Ashok Kumar Jain and Arun Kumar Jain, Laxmi Publications, New Delhi.
5. Design of Steel Structures by M.Raghupathi, Tata Mc. Graw-Hill

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

1. <http://nptel.ac.in/courses/105106112/>