

Devi Ahilya University Indore, India Institute of Engineering & Technology				III Year B.E. (Civil Engineering) (Full Time)			
Subject Code and Name	Instruction Hours per Week			Credits			
	L	T	P	L	T	P	Total
6VLRC3: Design of Steel Structures – I							
Duration of Theory Paper: 3 hours	3	1	2	3	1	1	5

Course Objective:

1. To learn the properties of steel sections and design basics and codal provisions Design of connections.
2. To design steel members subjected to tension and compression members.
3. Design steps involved in beams, built up beams and connections in beam, column etc.
4. Design of element in roof trusses, joints etc.use of hand book in steel trusses design.
5. To design plate girders, gantry girders and light gauge sections.

Prerequisite(s): Mathematical Methods and Mechanics of Materials.

COURSE CONTENTS

Unit I: Introduction

Properties of structural steel, Structural steel sections, Limit state and working stress design concepts, Types of connections, Design of bolted, riveted and welded joints, Eccentric connections - Efficiency of joints, High Tension bolts.

Unit II: Tension members and Compression members

Types of sections, Net area, Net effective sections for angles and Tee in tension, Design of connections in tension members, Use of lug angles, Design of tension splice, Concept of shear lagTypes of compression members, Theory of columns, Basis of current codal provision for compression member design, Slenderness ratio, Design of single section and compound section compression members, Design of lacing and battening type columns, Design of column bases, Gusseted base

Unit III: Beams Design of laterally supported and unsupported beams, Built up beams, Beams subjected to biaxial bending, Design of plate girders riveted and welded, Intermediate and bearing stiffeners, Web splices

