

AMEV16 BASIC STRUCTURAL DESIGN

UNIT-1 INTRODUCTION AND PLANNING

- 1.1 Introduction- Planning and Design Process
- 1.2 Design Philosophies-Structural Safety, Allowable Stress Design, Limit State Design
- 1.3 Types of Loading- Dead , Live, Wind and Earthquake loads
- 1.4 Fabrication Drawing of Simple Riveted, Bolted and Welded Connections.

UNIT-2 LIMIT STATE DESIGN FOR FLEXURE

- 2.1 Analysis and design of singly and doubly reinforced rectangular and flanged beams
- 2.2 Analysis and design of one way, two way and continuous slabs subjected to uniformly distributed load for various boundary conditions.

UNIT-3 LIQUID STORAGE STRUCTURES RC

- 3.1 Water Tanks- Circular and Rectangular
- 3.2 Design and Drawing
- 3.3 Hemispherical Bottomed Steel Water Tank
- 3.4 Design and Drawing.

UNIT-4 RETAINING WALLS

- 4.1 Design and Detailing of RC Cantilever and Counterfort Retaining Walls
- 4.2 Horizontal Backfill with Surcharge
- 4.3 Design of Shear Key.

UNIT-5 INDUSTRIAL STRUCTURES

- 5.1 Steel Roof Trusses
- 5.2 Design and Drawing of Roofing Elements
- 5.3 Purlins
- 5.4 Design and Drawing of Self supported Chimney.

Reference Books:

1. Krishnaraju N, "Structural Design and Drawing", Universities Press, 200-.
2. Punmia B.C, Ashok Kumar Jain and Arun Kumar Jain, "Comprehensive Design of Steel Structures", Laxmi Publications Pvt. Ltd., 2003.