AMAR-13 DESIGN OF STRUCTURES-I

UNIT-1 TIMBER STRUCTURES- DESIGN OF BEAMS AND COLUMNS

1.1 Grading of Timber

1.2 Permissible Stresses

1.3 Design of timber beams

1.4 Madras terrace roof

1.5 Design of timber columns.

UNIT-2 STEEL STRUCTURES- BOLTED AND WELDED JOINTS

2.1 Assumptions- failure of Bolted joints

2.2 Strength and Efficiency of Bolted Joints

2.3 Types- Design of Bolted Joints for Axially Loaded Members (Excluding eccentric connections) Types of welded joints

2.4 Advantages and disadvantages

2.5 Design of Fillet welds (Excluding eccentric connections). (Exercises)

UNIT-3 TENSION MEMBERS

3.1 Introduction

3.2 Net sectional area- permissible stresses.

3.3 Design of Axially loaded Tension member

3.4 Lug angle- code provision- tension splice.

UNIT-4 COMPRESSION MEMBERS

4.1 Introduction- various sections- built up section

4.2 Design of columns (excluding Lacing, Battening and other connections.)

UNIT-5 STEEL BEAMS

5.1 Introduction

5.2 Laterally supported and unsupported beams

5.3 Design of laterally supported beams

References Books:

1. S.K. Duggal, "Limit State Design of Steel Structures", McGraw Hill Education, Private Limited, 2010.
2. Dr. V. L. Shah, Prof. Veena Gore, "Structures Publications", Pune, 2012.
3. S.S. Bhavikatti, "Design of Steel Structures" by Limit State Method as per IS800-2007, I.K. International Publishing House Pvt, Ltd, 2012