

## **ST5008 INDUSTRIAL STRUCTURES**

### DETAILED SYLLABUS

#### **OBJECTIVE**

To study the requirements, planning and design of Industrial structures.

#### **UNIT I PLANNING AND FUNCTIONAL REQUIREMENTS**

Classification of Industries and Industrial structures - planning for Layout Requirements regarding Lighting, Ventilation and Fire Safety - Protection against noise and vibration - Guidelines of Factories Act.

#### **UNIT II INDUSTRIAL BUILDINGS**

Steel and RCC - Gantry Girder, Crane Girders - Design of Corbels and Nibs – Design of Staircase.

#### **UNIT III POWER PLANT STRUCTURES**

Types of power plants – Containment structures - Cooling Towers - Bunkers and Silos – Pipe supporting structures

#### **UNIT IV TRANSMISSION LINE STRUCTURES AND CHIMNEYS**

Analysis and design of steel monopoles, transmission line towers – Sag and Tension calculations, Methods of tower testing – Design of self supporting and guyed chimney, Design of Chimney bases.

#### **UNIT V FOUNDATION**

Design of foundation for Towers, Chimneys and Cooling Towers - Machine Foundation - Design of Turbo Generator Foundation.

#### **REFERENCES**

1. Jurgen Axel Adam, Katharria Hausmann, Frank Juttner, Klauss Daniel, Industrial Buildings: A Design Manual, Birkhauser Publishers, 2004.
2. Manohar S.N, Tall Chimneys - Design and Construction, Tata McGraw Hill, 1985
3. Santhakumar A.R. and Murthy S.S., Transmission Line Structures, Tata McGraw Hill, 1992.
4. Srinivasulu P and Vaidyanathan.C, Handbook of Machine Foundations, Tata McGraw Hill, 1976.