CE8009 INDUSTRIAL STRUCTURES

DETAILED SYLLABUS

OBJECTIVE:

- To learn the planning, layout, functional aspects of industries and design of major steel and R.C structures needed for industries.

UNIT I PLANNING

Classification of industries and industrial structures – Site Planning and Selection – Exterior and interior Layout for Industries and buildings - Guidelines from factories act

UNIT II FUNCTIONAL REQUIREMENTS

Lighting – Ventilation – Noise and Vibration control – Fire safety

UNIT III DESIGN OF STEEL STRUCTURES

Pre-engineered and Mill buildings – Transmission Lines Towers – plate girders. Bunkers and Silos – pipe/cable racks- Chimney.

UNIT IV DESIGN OF R.C. STRUCTURES

Corbels, Brackets and Nibs - Silos and bunkers –Chimney –Cooling Towers (Principles only)

UNIT V PREFABRICATION

Principles of prefabrication and pre cast construction – Prestressed precast roof trusses - Floor slabs - Wall panels- Handling and erection stresses –joints in precast structures.

TEXTBOOKS:

1. Ramamrutham. S., Design of Reinforced Concrete Structures, Dhanpat Rai Publishing Company, 2007.

2. Varghese. P.C., Advanced Reinforced Concrete Design, PHI, Eastern Economy Editions, Second Edition, 2005.

3. Subramanian, N., Design of Steel Structures, Oxford University Press, 2008.

4. Ramachandra and Virendra Gehlot, Design of steel structures –Vol. 2, Scientific Publishers, 2012.

REFERENCES:

1. Henn W. Buildings for Industry, Vol. I and II, London Hill Books, 1995

2. Handbook on Functional Requirements of Industrial buildings, SP32–1986, Bureau of Indian Standards, 1990.

3. Handbook of Industrial Lighting, Stanley L. Lyons, Butterworths, London.1981

4. Koncz, J., Manual of Precast Construction Vol. I and II, Bauverlay GMBH, 1971.

5. Handbook on Precast Construction, An Indian Concrete Institute Publication, 2016