

1152CE107 (VTUR15)	INDUSTRIAL STRUCTURES	L	T	P	C
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A. Preamble:

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

B. Prerequisites:

NIL

C. Link to other Courses:

Design of RC Elements

D. Course Outcomes:

After the completion of the course the students will be able to

CO	Course Outcomes	Level of learning domain (Based on revised Bloom's)
CO1	Plan and prepare layout for industrial structures.	K3
CO2	Design functional requirements such as lighting and ventilation for industrial structures.	K3
CO3	Design the steel structures such as industrial roofs, crane girders, bunkers and silos.	K6
CO4	Design the R.C corbels, brackets, nibs, bunkers and silos.	K6
CO5	Have knowledge on the precast industrial structures.	K3

E. Correlation of COs with POs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		M				M		M		M	M	
CO2		M				M		M		M	M	
CO3		M	H			M		M		M	M	
CO4		M	H			M		M		M	M	
CO5		M				M		M		M	M	

F. Course Content:

UNIT I	PLANNING AND FUNCTIONAL REQUIREMENTS	9
Classification of industries and industrial structures – General requirements of various industries - Planning and layout of buildings and components.		
UNIT II	FUNCTIONAL REQUIREMENTS	9
Lighting – Ventilation - Acoustics – Fire safety – Guidelines from factories act.		
UNIT III	DESIGN OF STEEL STRUCTURES	9
Industrial roofs – Crane girders – Mills buildings – Bunkers and Silos - Chimney.		
UNIT IV	DESIGN OF R.C. STRUCTURES	9
Corbels, Brackets and Nibs - Silos and bunkers - Chimney - Principles of folded plates and shell roofs.		
UNIT V	PREFABRICATION	9
Principles of prefabrication – Prestressed precast roof trusses - Construction of roof and floor slabs - Wall panels.		

TOTAL: 45 PERIODS

H. TEXT BOOKS:

1. Ramamrutham.S., "Design of Reinforced Concrete Structures", Dhanpat Rai Publishing Company, 2016.
2. Varghese.P.C., "Limit State Design of Reinforced Concrete", Prentice Hall of India Eastern Economy Editions, 2nd Edition, 2009.
3. Bhavikatti.S.S., "Design of Steel Structures by Limit State Method as Per IS: 800-2007", I.K. International Publishing House Pvt. Ltd., 5th Edition, 2017.

I. REFERENCES:

1. Henn W. "Buildings for Industry", Vol. I and II, London Hill Books, 1995.
2. SP32-1986, Handbook on Functional Requirements of Industrial buildings, Bureau of Indian Standards, 1990.
3. Koncz.J., "Manual of Precast Construction", Vol. I and II, Bauverlay GMBH, 2nd Revised Edition, 1976.