BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
INSTRUCTION DIVISION
FIRST SEMESTER 2018 – 2019

Course Handout Part II

Date: 12/03/2021

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No.	**: CE G618**
Course Title	**: Design of Multi-storey Structures**
Instructor-in-Charge	**: ANSHUMAN**

Scope and Objective of the Course:

Paucity of land in urban areas has limited the horizontal extension of buildings used for residential or commercial purposes. High-rise structures are advanced as a solution to this problem. The present course intends to impart adequate knowledge enabling the students to plan, analyse, design and construct high rise structures either in steel, concrete or mix-type of applications. Initially, the various kinds of loads and stresses to which the structure is subjected to, will be studied. Various important components of tall structures like diaphragms, shear walls, tubular encasements will be covered. Analysis and design against lateral loads (wind and earthquake) will also be emphasized along with detailing of reinforcements in order to provide ductile and efficient buildings.

2 (a) Text book

T1. Varyani, U. H. (1999). "Structural design of multi-storeyed buildings." South Asian Pub., New Delhi, ISBN 8170031214.

2 (b) Reference books

R1. Taranath, B. S. (1998). "Steel, concrete, & composite: Design of tall buildings." Second Edition, Mc. Graw Hill Publishers, New York, ISBN 0070629145.
R2. Smith, B. S., and Coull, A. (1991). "Tall building structures : Analysis and design." A Wiley-Interscience Publication, New York, ISBN 0471512370.
R3. Chopra, A. K. (1996). "Dynamics of structures." Prentice Hall of India, New Delhi.
R4. Beedle, L. S., Editor-in-Chief. (1987). "Advances in tall buildings." Council on Tall Buildings and Urban Habitat, CBS Publishers and Distributors, New Delhi, India.
R5. Nash, P. (1989). "Super structures." Garrett Educational Corporation. ISBN 0944483372.
R6. Hart, F. et al. (1985). "Multi-storey buildings in steel." Nichols Publishing, Company, ISBN 089397224X.

R7. Schueller, W. (1996). "The design of building structures." Prentice Hall, New Jersy, ISBN: 047101530.
R8. Moreno, J. (1985). "Analysis and design of high rise concrete buildings." Books on Demand, ISBN 060801429X.
R9. Jain, A. K. (1999). "Reinforced concrete – limit state design." 5th Edition, Nem Chand & Brothers, Roorkee.
R10. Fintel, M. (1985). "Handbook of concrete engineering." 2nd Edition, Van Nostrand Reinhold Co., New York.
R11. Y. P. Gupta (1995). "High rise structures – design and construction." New Age International (ISBN 8122408370)

3. Course Plan

Lecture No.	Learning Objective	Topics to be covered	Reference to Text Book
1-2	To estimate various loads on Structure	Loads and Stresses	Chap-1 (T1)
3-4-5	Use of different Framing System	Building Frames	Chap-2 (T2)
6-7	Different Framing System	Framing System	Chap-2 (T2)
8-9-10	Design of Structural System against Horizontal Loads	Bracing of Multistoried building Frames	Chap 4 & 6 (R2)
11-12	Analysis and Design of Diaphragms	Diaphragms	Chap-7 (T1)
13-17	Analysis and Design of Shear Walls	Shear Wall and Cover	Chap-8 (T1) Chap-9 (R2)
18-19	Tubular Structural Framings	Tube Structures	Chap-2 (R2)
20-23	Design of Multistoried Frames against Lateral Loads	Approximate analysis and preliminary design	Chap-17(T1)
24-26	Evaluation of Design Loads	Design Loading on Frames	Chap-7 (T1)
27-30	Complete Analysis of Multistory Frames	Frame Analysis	Chap 6 (T1)
31-36	Design of Steel Towers	Steel Towers	
37-38	Introduction to STADD for High Rise Structures	-	Class Notes
39-40	Detailing of various Structural Components	Construction Details	Chap-17 (T1)

4. Evaluation Scheme

Component	Duration	Weightage	Date & Time	Remarks
Midsem	1.30 hrs	35%	CB	
Quiz		20%		
Compre	2 hrs	45%	26/06 AN	OB+CB

5. **Chamber Consultation Hour:** To be announced in the class

6. **Notice:** Notice if any concerning this course will be displayed on the Notice Board of Civil Engineering Group.

Instructor-In-Charge
CE G618