Course Type	Course Code	Name of the course	L	T	P	Credit
DE	NCED514	Design of Tall Buildings	3	0	0	3

Course Objective
The primary objective of this course is to understand the fundamentals of the design of tall building structures.
Learning Outcomes
After studying this course, students should be able to: • Understand the behavior of various structural systems for tall buildings. • Design the tall buildings for gravity, seismic, and wind forces.

Unit No.	Topics to be Covered	Contact Hours	Learning Outcome
1	Introduction to structural systems and general concepts of Tall Buildings.	3L	Understand the fundamental principles of Tall Building design.
2	Loads on Tall Buildings, Behavior of Tall Buildings subjected to wind loads including dynamics effects, Behavior of Tall Buildings subjected to earthquake loads, Comparison of dynamic behavior under wind and earthquake, Earthquake resistant design philosophy for tall buildings.	10L	Understand the behavior under different loads.
3	Various methods of structural analysis, 3D modeling and analysis of the Tall Buildings, Frames, Shear walls, Masonry infills, Floor diaphragms, P-Delta effects, Backstay effects, Simultaneous and sequential loading, and Construction stage analysis.	8L	Learn the various methods of analysis of Tall Buildings
4	Gravity systems for steel, concrete, and composite buildings, Lateral load resisting systems for steel, concrete, and composite buildings, Outrigger systems, and Belt truss systems.	8L	Understand various lateral load-resisting systems.
5	Code provisions for seismic design of Tall Buildings, Code provisions for detailing of structural elements, Special considerations in the design of beams, columns, shear walls, joints, and floor diaphragms.	8L	Learn the provisions of the Indian Standard code.
6	Basics of Foundations for tall buildings, foundation-superstructure interaction, Asymmetric structures and twisting of frames, Case studies of existing Tall Buildings.	5L	Learn about the foundation systems and case studies.
	Total Contact Hours	**42L**	

Text Books:

1. Taranath, B. S. (2016). Structural analysis and design of tall buildings: Steel and composite construction. CRC press.

Reference Books:

1. IS 16700: 2023. Criteria For Structural Safety Of Tall Concrete Buildings – Indian Standard code of practice
2. Taranath, B. S. (2009). Reinforced concrete design of tall buildings. CRC press.
3. Stafford Smith, B., & Coull, A. (1991). Tall building structures: analysis and design. John Willey, New York.