

CONTACT PERIODS: 3 (LECTURE) PER WEEK

DURATION OF EXAM : 3 HOURS

EXAM MARKS : 100

PROGRESSIVE MARKS : 50

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Objective:

To give an introduction to pre-stressed concrete, special structural forms and detailing of RCC structural members.

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Outline:

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Basic concepts of pre-stressed concrete-pre-stressing systems, materials, behaviour of pre-stressed concrete beams and losses in pre-stress.

Introduction to special structural forms and basic structural concepts about : shells, folded plates, domes, grid structures, flat slabs(RCC), space frames, tensile structures and pneumatic structures (no problems to be solved for these).

Detailing of typical – Beam (singly and doubly reinforced), slab (one way and two way), column footing (square isolated), and staircase (dog legged and open well)

Note: The teacher is also expected to expound the structural concepts introduced in non-mathematical terms with examples and application in architectural design.

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References:

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- 1) "Pre-stressed Concepts" by N Krishna Raju

- 2) "Structures" by DL Schodek

- 3) "Form and Structure in Architecture" by Alexander Zamen

- 4) "RCC – design and practice" by N Krishna Raju and RN Pranesh