

CONTACT PERIODS : 3(LECTURE) PER WEEK

DURATION OF EXAM : 3 HOURS

EXAM MARKS : 100

PROGRESSIVE MARKS : 50

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Objective:

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To provide an introduction to design of reinforced concrete structures

Outline:

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Concrete: Composition, Basics of mix design, water cement ratio, strength, durability, workability requirements. Relevance of RCC in Architectural practice. Advantages of RCC over other conventional structural practices. Steel for RCC – Plain & Twisted bars, IS 456 code provisions.

Working Stress method of design – Basic concept, types of loads, assumptions. Calculation of MR for singly RC beam (only).

Limit state method of design – Necessity and philosophy of limit state design. Limit state design of simply supported slabs, beams, T beams, columns (axial and uniaxial bending) and footings (axially loaded square footing). Use of SP 16, IS 456 permitted

Design of Dog legged and open well stairs (waist slab type)

Note – The teachers are expected to expose the students to demonstration models, tests and experiments with materials and structural systems related to the above topics.

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

References:

1) "RCC" by Jain and Jaikrishna

2) "RCC" by Ramamrutham

3) "RCC" by N Krishna Raju and RN Pranesh