DESIGN OF MASONRY STRUCTURES

PROF. ARUN MENON
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IIT Madras

TYPE OF COURSE : Rerun | Elective | UG/PG
COURSE DURATION : 12 weeks (20 Jul'20 - 09 Oct'20)
EXAM DATE : 17 Oct 2020

PRE-REQUISITES : Student must have completed courses on Strength of Materials, Structural Analysis, Structural Design (RC or steel), and preferably Seismic design of Structures

INTENDED AUDIENCE : The course is appropriate for UG (Civil), and PG students specialising in Structural Engineering.

INDUSTRIES APPLICABLE TO : Public Works Departments (CPWD/PWDs), Birla Aerocon (and other AAC block and cement concrete block manufacturers), Bekaert (India), Weinerberger (India)

COURSE OUTLINE :
The course aims at elucidating theories on mechanical behaviour of masonry assemblages under different actions, and introduces students to working stress and limit state approaches to analysis and design of unreinforced, reinforced, confined masonry structures for gravity and lateral loads, including earthquake loads. The course will also briefly address behaviour of masonry infill walls and procedures for structural assessment and strengthening of existing masonry structures.

ABOUT INSTRUCTOR :
Prof. Arun Menon is an Associate Professor of Structural Engineering at IIT Madras and holds an undergraduate degree in architecture, a masters degree in Civil Engineering from India, and Masters and doctoral degrees in Earthquake Engineering from University of Pavia, Italy. His research interests are in structural aspects of historical constructions, Earthquake-resistant structural masonry, structural assessment and retrofit design.

COURSE PLAN :

Week 1: Introduction

Week 2: Masonry Materials and Properties

Week 3: Strength and Behaviour of Masonry

Week 4: Strength and Behaviour of Masonry (contd)

Week 5: Strength and Behaviour of Masonry (contd)

Week 6: Design of Reinforced Masonry

Week 7: Design of Reinforced Masonry (contd)

Week 8: Design of Reinforced Masonry (contd)

Week 9: Design of Reinforced Masonry (contd)

Week 10: Design of Reinforced   Masonry   (contd)

Week 11: Design of Reinforced Masonry (contd)

Week 12: Confined Masonry, Infill Masonry,