

Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

CE7023 - Computations for historical masonry

Credit Distribution: C:11 L:3 T:1 P:0 E:1 O:6 TH:0

Course Type: Theory

Description: To identify the role of quantitative analysis in the safety assessment of historical constructions, particularly historical masonry constructions. To develop a framework for the choice of modelling and analysis possibilities depending on the requirements of the actual engineering problem at hand. To identify issues, methods, requirements and possibilities of modelling and analysis of historical masonry structures.

Course Content: 1. Introduction - Concepts on historic construction - Modern approach towards conservation; 2. Historic Development of Masonry Structures – Main types of structural elements / Glossary - Overall structural arrangement - Collapse and damage mechanisms; 3. Design and Assessment Methods - Design rules from modern coded - Thrust analysis / kinematic analysis - Non-linear analysis - Masonry Experimental behavior; 4. Seismic Design and Analysis - Safety verification with capacity curves for collapsing mechanisms - Possibilities and results for structures with box behavior - Possibilities and results for structures without box behavior; - 5. Discussion of Case Studies

Text Books

- Lecture Notes by Paulo Lourenço

Reference Books

NIL

Prerequisite: