

# Rehabilitation of Historical Structures

## Overview

Conservation of heritage structures is an inter-disciplinary effort, wherein traditional knowledge on building materials, techniques and specifications are brought to the realm of current practitioners of conservation engineering, with the intent of merging them with modern tools and practices. Internationally, it is established practice that structural safety cannot be compromised in any conservation effort. Formal systems that recognise conservation of heritage structures as an interdisciplinary engineering effort, with structural safety as a critical determinant, do not exist in India. With one of the largest stocks of heritage structures in the world, lack of adequate quality and quantity of manpower is a serious bottleneck in India in addressing the task of understanding and protecting heritage structures from natural hazards, ageing and weathering effects. Hence, capacity building in structural safety-centric conservation engineering is a major challenge for India, with an urgent need to identify the existing diffused expertise in relevant sub-areas within conservation and forming a consortium for a holistic approach to the national grand challenge of protecting heritage structures. This is the basis of such a course.

The objectives of the course are:

- (1) To develop an understanding of the mechanical and structural behaviour of historical masonry under the action of different loads;
- (2) To identify the different scientific tools available for condition assessment and diagnosis of structural distress in historical constructions;
- (3) To develop a framework to select appropriate repair or strengthening strategy for a distressed historical construction.

This course is being conducted as part of the educational activities of **National Centre for Safety of Heritage Structures (NCSHS)**, IIT Madras ([www.ncshs.org](http://www.ncshs.org)).

<b>Course Dates</b>	<b>28 September to 08 October 2016</b>
<b>Host Institute</b>	<b>IIT Madras</b>
<b>No. of Credits</b>	<b>2</b>
<b>No. of Participants</b>	<b>50 (maximum)</b>
<b>You Should Attend If...</b>	<ul style="list-style-type: none"><li>▪ You are a structural engineer or conservation architect working on structural assessment and rehabilitation of historical monuments and heritage structures.</li><li>▪ You are an engineer, scientist, conservation assistant or archaeologist working with government organisations or NGOs involved in preservation of built heritage.</li><li>▪ You are a student, researcher or faculty member from an academic institution interested in pursuing research on rehabilitation of historical monuments and heritage structures.</li></ul>
<b>Course Registration Fees</b>	<p>The participation fees for taking the course is as follows:</p> <p><b>Student Participants:</b> Rs.2000 <b>Faculty Participants:</b> Rs.4000 <b>Government Organizations:</b> Rs.8000 <b>Industry Participants:</b> Rs.15000</p> <p>The above fee is towards participation in the course, the course material, computer use for tutorials and assignments, and laboratory equipment usage charges.</p> <p><b>Mode of payment: Demand draft in favour of "Registrar, IIT Madras" payable at Chennai</b></p>
<b>Accommodation</b>	<p>The participants may be provided with hostel accommodation, depending on the availability, on payment basis. Request for hostel accommodation may be submitted through the link: <a href="http://hosteldine.iitm.ac.in/iitmhostel">http://hosteldine.iitm.ac.in/iitmhostel</a></p>

## Course Faculty



**Claudio Modena** graduated with Degree (Laurea-MSc) in Civil Engineering, obtaining “summa cum laude” from the University of Padova in 1970. He has been a Full Professor of Structural Engineering of University of Padova since 1994. He teaches courses on “Structural Problems of Monuments and Historic Buildings”, “Construction Technology” and “Theory and Design of Bridges” at the School of Engineering of the University of Padova; on “Constructions in Seismic Areas” at the University Institute of Architecture in Venice (course for the Degree in Architecture), at the School of Engineering of the University of Padova.

Since 2003 he is the Director of a Master Course (post-lauream) on Structural Restoration of Historical Construction, and since the current academic year co-coordinator of an Advanced Master Course in Structural Analysis of Monuments and Historical Constructions, within a consortium formed with the University of Minho (Portugal), the Technical University of Barcelona (Spain), the University and ITAM in Prague (Czech Republic), funded by the European Master Programme Erasmus Mundus.



**Arun Menon** is Assistant Professor of Structural Engineering at the Civil Engineering Department of IIT Madras. He received his PhD in Earthquake Engineering from University of Pavia, Italy.

He has 15 years of exposure to the field of seismic engineering and his research interests include seismic behaviour of masonry structures, restoration of heritage structures and seismic risk assessment. He is currently coordinating the efforts of National Centre for Safety of Heritage Structures (NCSHS), IIT Madras. He is member of Bureau of Indian Standards Panel for Masonry, CED 46:P7 and Convener, Working Group for Draft Code: “Seismic Retrofit of Structures: Masonry Buildings” in CED 39:Earthquake Engineering Sectional Committee.

## Course Coordinator

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