



Organised by
CSIR- Structural Engineering Research Centre
(An ISO 9001: 2015 certified organisation)



COURSE CONTENTS

The lectures of the advanced course will cover

- Analysis, design, and performance evaluation of structures subjected to multiple natural and man-made hazards such as earthquakes, wind, cyclones, blast, and fire.
- Risk/performance based design approaches, along with modern mitigation strategies including passive and semi-active control systems
- Codal provisions, case studies, and emerging practices
- Visit to various laboratories of CSIR-SERC

ABOUT CSIR-SERC

CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai, is one of the national laboratories under the Council of Scientific & Industrial Research, India. CSIR-SERC has built up excellent facilities and expertise for analysis, design and testing of structures and structural components. Services of CSIR-SERC are being extensively used by the Central and State Governments and public and private sector undertakings. Scientists of CSIR-SERC serve on many national and international committees. The Centre is recognised at the national and international levels as a leading research institution in Structural engineering.

ADVANCED SEISMIC TESTING AND RESEARCH (ASTAR) LABORATORY

ASTaR Lab at CSIR-SERC is a premier national facility dedicated to advanced research in earthquake engineering and structural dynamics. The research activities at ASTaR Lab focus on structural dynamics, evaluation of seismic performance of civil engineering structures, development of advanced seismic-resistant design and response control strategies, and vibration assessment of structures. Emphasis is placed on building interdisciplinary knowledge and expertise to develop innovative solutions that improve the safety, resilience, and reliability of civil infrastructure subjected to dynamic hazards such as earthquakes.

BACKGROUND

Civil infrastructure is increasingly exposed to multiple dynamic and environmental hazards such as earthquakes, wind, vibrations from machinery and traffic, and extreme loading conditions. Conventional design approaches often address these hazards in isolation, offering limited scope for holistic risk mitigation. The current academic curriculum in Civil and Structural Engineering provides limited exposure to these emerging concepts and their practical implementation. This course is designed to bridge this gap by introducing the fundamentals and applications of integrated multihazard mitigation approaches.

OBJECTIVES

The primary objective of the course is to provide a comprehensive understanding of multihazard mitigation concepts through the application of smart materials, vibration analysis, and control strategies. The course aims to familiarize participants with the behavior of structures under dynamic hazards, while providing insight into current design practices, emerging technologies, and real-world applications.

FACULTY

Faculty for the course would comprise mainly scientists from CSIR-SERC and few experts from academia.



CONTACT US

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PREREQUISITES

Course registrants are expected to possess adequate background knowledge relevant to the course content in order to fully benefit from participation in this advanced course.

VENUE & DURATION

Training and Development Complex,
CSIR-SERC, Chennai.
Timing: 9.30 a.m. to 5.00 p.m.

REGISTRATION & FEE

Rs. 3000/- per participant inclusive of GST for working professionals, Rs. 1500/- for student participants and US \$ 450/- for foreign delegates. Presentation material (in .pdf format) and participation certificate will be provided to all the registered participants. The course registration can be completed via online form with the URL below:

<https://serc.res.in/course>

TRAVEL, BOARDING & LODGING

The participants or their sponsoring organizations must bear travel, boarding and lodging expenses. Limited accommodation in the Guest House/ Trainee's Hostel at CSIR- SERC Campus may be arranged on a first-come-first-served basis at extra cost. Participants wishing to avail of this facility are advised to write to the course coordinators well in advance, and in any case, not later than 20 Aug 2026.