



Engineering Staff College of India

An Autonomous Organ of The Institution of Engineers (India)

Old Bombay Road, Gachi Bowli, Hyderabad-500 032

(IMS [ISO 9001:2015, ISO 14001:2015, ISO 50001:2018, ISO 45001:2018],
ISO/IEC 17025:2017 Certified, AICTE & CEA Recognized Institution)

CIVIL & TRANSPORTATION ENGINEERING DIVISION

Training and Development Programme On

Condition Assessment of Railway Bridges

18th – 22nd August, 2025

Venue : ESCI, Hyderabad



Centre for Promotion of Professional Excellence

INTRODUCTION:

A Bridge is a structure built to span a valley, road, river, body of water, or any other physical obstacle. Designs of Bridges will vary depending upon the function of the bridge and nature of the area where the bridge is to be constructed.

Railway infrastructure is crucial for economic growth, low-carbon emission, and energy-efficient transport. Framed on the railway infrastructure, bridges, and viaducts face problems due to aging, overloading, lack of maintenance, and poor inspection. To remain competitive in comparison to other means of transport, digitalization in railway infrastructure is a crucial aspect, particularly in what concerns the structural condition assessment. The traditional human-dependent inspection methods are typically costly and time-consuming. Bridge inspection is an essential element of any BMS particularly for aged and deteriorated bridges and a path way to condition rating by Vision-Based Condition Assessment and Digital Inspection. The accuracy of condition assessment is relied heavily on the quality of the inspection. Advances in robotics and remote sensing technologies provide nondestructive, contact-free ways to capture the 3D state of the infrastructure and improve inspection efficiency. A Condition Assessment of a Railway Bridge involves evaluating the current state of the bridge's structural and functional components to ensure safety, reliability, and serviceability.

OBJECTIVES:

- To familiarize and improve the skills of the participants with the Visual Inspection Techniques
- To update the knowledge, upgrading the skills in Implementations of **AI** (Artificial Intelligence) in Protective Measures and Maintenance
- To give the knowledge on how to Improve the overall safety and reliability of railway infrastructure

COURSE COVERAGE :

- Overview of Condition Assessment of Railway Bridges
- Visual Inspection Techniques and Rating Systems
- Non-Destructive Testing (NDT) for Railway Bridges
- Rail-Structure Interaction (RSI) and Its Impact on Assessment
- Integration of Structural Health Monitoring (SHM) with Bridge Management Systems (BMSs).
- Vision-Based Condition Assessment and Digital Inspection
- Implementation of **AI** (Artificial Intelligence) in Protective Measures and Maintenance of Bridges
- Integrated Condition Assessment Framework and Case Studies
- Technical Field visit
- Group discussions, Presentation of Case Studies by Participants

BENEFITS TO THE PARTICIPANTS:

- Participants will learn the Rail-Structure Interaction (RSI)
- Gain knowledge on the latest advancements in bridge condition assessment techniques
- To impart knowledge on Learn about best practices for maintaining railway bridges

TARGET PARTICIPANTS:

This course is suitable to all engineers and officers working at junior level to senior level from Government departments like R&B, PWD, MES, Municipal Corporations, Panchayat Raj, Housing Boards, GHMC, RITES, and Border Roads Development & Defense. Engineers from all State and Central Government Departments, & construction Companies.

RESOURCE PERSONS:

Renowned personalities both from Industry / Educational Institutions like IIT's/ NIT's / Research Institutes, Reputed Universities, who are experts in this field, will be involved in providing the training.

PROGRAMME VENUE, DATES &TIMINGS:

VENUE : **Engineering Staff College of India (ESCI)** Campus, Old Bombay Road, Gachi Bowli, Hyderabad- 500 032.

DATES : 18th – 22nd August, 2025

Registration : 09:45hrs.

Session timings : 09:45 – 17:15 hrs with 3 times breaks.

COURSE DIRECTOR:

Dr. R Venkat Reddy, Ph.D (Osmania), FIE
Head

COURSE COORDINATOR:

Ch. Tilak – Faculty

COURSE FEES:

Rs.27,500/- (Rupees Twenty Seven Thousand Five hundred Only) + GST 18% per participant. Fee includes, Soft copy of course material, course kit and Twin Sharing AC accommodation, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

DISCOUNTS

- ❖ **Non-Residential Fee-** 10% discount on course fee is allowed for non-residential participants.
- ❖ **Group Discount:** Additional 10% discount for three or more participants, if sponsored by the same organization.

GST 18% is to be paid extra over and above the training fee, as training is also brought under the purview of **Service Tax. PAN Card No AAATT3439Q; Service Tax registration No AAATT3439QST008 (under commercial training or coaching services – clause 65(105) (ZZC) of Finance act – 1994). GSTN Number – 36AAATT3439Q1ZV (HSN Number – 999293)**

Programme fee is to be paid in favor of **“IE (I) – Engineering Staff College of India”** in the form of demand draft payable at Hyderabad.

Alternatively the payment may be made by **Electronic Fund Transfer (EFT) to ESCI - SB A/c No. 10007111201 with The SBI, PBB, Rajbhavan Road Branch, Khairatabad, Hyderabad-500004 by NEFT / RTGS / IFSC Code No. SBIN 0004159 – MICR No.500002075**. While using EFT method of payment, please ensure to communicate us your company name, our invoice reference and programme title.

REGISTRATION:

Please send your nominations

To
The Head
Civil & Transportation Engineering Division
Engineering Staff College of India
Old Bombay Road, Gachi Bowli, Hyderabad - 500 032
Mobile : **9490011311 / 9492011311**
Phone: 040-6630 4114
Email : cte@escihyd.org

CERTIFICATE:

A certificate of participation will be awarded to each participant.

GENERAL INSTRUCTIONS

- ESCI encourages participants to present case studies from their respective organizations.
- ESCI provides complimentary accommodation and boarding to the participants one day before commencement (Check-in 1200hrs) and one day after conclusion (Check-out 1100hrs) of the program duration. Overstay charges will be applicable as per ESCI rules (subject to availability of accommodation).