

### Course Application Fee:

Application fee (non-refundable) of Rs. 5,000.00 (GST included) need to be paid when applying for the course through following link:

<https://erp.iitkgp.ac.in/CEP/courses.htm>

### Course Fee:

#### **For Indian Nationals**

INR: 40,000 (GST 18% included)

#### **For Foreign Nationals**

USD: 2,000 (including GST)

### Accommodation:

The accommodation will be booked on payment and request basis for the participants in our new technology guest house. Fee does not include charges for travel, accommodation and local hospitality. These are to be paid in actual by participants.

**Limited Seats: 30 (Thirty Only)**

### Address for Correspondence:

**Prof. Neeraj Kumar Goyal** (Coordinator)

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### **Participating Organizations (Earlier Editions):**

- AECOM India Pvt. Ltd.
- Alstom Transportation
- Arcadis India
- Areca Embedded Sys Pvt Ltd
- ASCRIT Pvt. Ltd.
- Atkins, Bangalore
- Bangalore Metro
- Bombardier Aerospace
- Bureau Veritas
- BE Analytic
- Central Electronics Limited
- Dedicated Freight Corridor Corporation
- DB International GmbH
- Delhi Metro Rail Corporation Limited, Delhi
- DNV GL Business Assurance India
- DNV Millennium Center
- DQS India
- Dubai Metro
- EGIS India Consulting Engineers Pvt Ltd
- Etap Automation Pvt Ltd
- Etihad Rail DB Operations
- Expo link Route 2020
- ELGI Equipments Limited
- Faiveley Transport India Pvt Ltd
- FCC - Riyadh Metro Rail
- FLOW Riyadh Metro Rail
- G. G. Tronics
- Geometric Global
- Indian Railways
- Jacobs
- JAKSON Ltd
- Jio Platforms Limited
- JRR safelogic
- Kochi Metro Rail Ltd,
- Keolis Hyderabad Metro Rail Transit System
- LTIMindtree
- L&T Construction
- L&T Metro Rail Hyderabad
- L&T Technology Services
- Louis Berger
- Maharashtra Metro Rail Corporation, Nagpur
- MEGA Company Ltd., Gandhinagar
- Metro One Operation
- Motorola Solutions India
- Mott MacDonald India
- Mumbai Metro One Pvt. Ltd.
- Mumbai Metro Rail Corporation Ltd
- National High Speed Rail Corporation Ltd
- Oriental Consultants
- Parimala Trinity Kaverappa Layout
- QDVC Doha, Qatar
- RAMPED, Saudi Arabia
- Rapid Metro Gurgaon
- Rail Vikas Nigam Limited
- RITES Ltd.
- RTA Dubai
- RSK Business Solution Limited
- Saudi Arabian Parsons Limited, Riyadh
- Saudi Railway Company
- Scomi Engineering Bhd.
- SENER Ingenieria Sistemas
- Serco Limited
- Sidwal Refrigeration Industries Pvt. Ltd.
- Systra MVA Consulting
- Siemens Mobility
- Shimizu Corp., Singapore
- Synergy Systems and Solutions
- Tata Projects Limited
- ThyssenKrupp Elevator Saudi Ltd., Riyadh
- TVM Signalling and Transportation System
- Titagarh Wagons Limited transit
- Vedanta Limited

Short Term Course on

## **RAMS for Railway Systems**



**July 8–12, 2024**



*Organized By:*

**Subir Chowdhury School of  
Quality and Reliability**

**IIT Kharagpur, West Bengal, INDIA**

## Subir Chowdhury School of Quality and Reliability, IIT Kharagpur

IIT Kharagpur is the largest technical institution in India and gets ranked among best institutions in the country imparting technical education and research. The Subir Chowdhury School of Quality and Reliability was formerly known as Reliability Engineering Centre, which came into existence in 1983. The school offers M Tech, MS and PhD degrees in Quality and Reliability Engineering. Besides, the school is actively engaged in sponsored research and offers consultancy services to various public and private organizations.

### Brief About the Course

#### Earlier Courses

RAMS for Railway Systems course is being offered since last ten years. This course has been conducted during July 21-25, 2014; July 27-31, 2015; July 11-15, 2016; July 10-14, 2017; July 9-13, 2018; July 8-12, 2019; Dec 14-18, 2020 (Online); Dec 06-10, 2021 (Online); Dec 05-09, 2022 (Online); July 03-07, 2023. The programs received good response from industries in terms of participation and on completion of the course the feedbacks were highly positive. Based on the feedbacks and multiple requests received, the program is proudly being offered again. We look forward to benefit railways authorities and rail support industries through bringing awareness about System Assurance/RAMS processes and provide training on these concepts.

#### Who Should Attend?

Practicing RAMS professionals, Engineers, or Managers working in the fields of design, development, consulting, manufacturing, audit, operations, maintenance, or QA/QC in the rail and rail support industries.

## Industry Problem Discussions

If your organization or project is facing any challenge or problem related to RAMS, please feel free to write to us in the form below. This can be used during the program for discussion and resolution.

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Problem Statement:

## Program Coordinators

**Principal Coordinator:**

**Prof. Neeraj Kumar Goyal**

Associate Professor

Subir Chowdhury School of Quality and Reliability  
IIT Kharagpur, West Bengal, INDIA

**Coordinator:**

**Dr. Ajeet Kumar**

System Assurance & RAMS Expert  
Bangalore – India

## Faculty

The program is designed and delivered by IIT Kharagpur faculty and RAMS experts with years of experience in System Assurance & RAMS on railway industries with cross-functional domain understanding of transport sectors. Almost all faculty members are currently associated with the industry in a consulting role.

## Program Contents

- Course Introduction, RAMS Parameters & Reliability Mathematics
- Failure Data Analysis (Parametric & Non-Parametric)
- Reliability Prediction using MIL 217
- System Reliability Modelling
- Risk Modelling
- Failure Mode Effects & Criticality Analysis
- Functional Safety, Hazard, Risk & Risk Matrix
- System Assurance & RAMS
- Railway RAMS Standard- EN 50126, 50128 and 50129
- Operational Aspect of Railway RAMS
- Cyber Security in Railway Application
- RAM and Safety Analysis: Case Study
- FRACAS and LCC: Case Study
- SIL Allocation: Case Study