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**A Short Term Program on  
RAMS for Railway Systems**



**(11 - 15 July, 2016)  
@ Reliability Engineering Centre, IIT Kharagpur**



## Who Should Attend?

This Practicing professionals, Engineers, Managers in the fields of design, development, consulting, manufacturing, audit, operations, maintenance, and QA/QC in the rail or metro rail industry.

## Program Contents

Participant will be exposed to various RAMS concepts including:

- Introduction to RAMS Parameters
- Basic Probability & Statistics
- Failure Data Analysis
- Failure Mode Effects and Criticality Analysis
- System Reliability Modeling
  - Reliability Block Diagram
  - Fault & Event Tree Analysis
- Design for Reliability
  - Apportionment of RAMS Parameters
- Basics of V&V and Software Reliability
- Hazard Analysis Risk Metrics and SIL Allocation
- Hazard Analysis and CENELEC Standards

## Program Details

Date: July 11 - 15, 2016

Venue: Reliability Engineering Centre, IIT Kharagpur

Fee: INR 40,000 only (for Indian Nationals)  
USD 1,000 only (for Foreign Nationals)

Seats: 30 (Thirty only)

The Program Fee is to be paid as a Demand Draft drawn in favour of CEP-STC, IIT Kharagpur payable at Syndicate Bank, IIT Kharagpur.

The principal coordinator may be contacted for any clarification or information required. Electronic transfer details will be sent through email on request.

Please note that fee *does not include* travel and local hospitality. The accommodation will be provided to participants in our guest house on payment and request basis. For more details, please contact us.

## Important Dates

Registration By: July 05, 2016

Fee Payment By: July 10, 2016

Program Duration: July 11 - 15, 2016

## Program Coordinators

### Coordinator

Prof. Neeraj Kumar Goyal  
Associate Professor  
Reliability Engineering Centre  
IIT Kharagpur, West Bengal  
PIN – 721302

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Email: [ngoyal@hijli.iitkgp.ernet.in](mailto:ngoyal@hijli.iitkgp.ernet.in)

### Co-coordinator

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Director (Academic)  
Institute of Metro Rail Technology First  
Floor, 160, Patny Square Hyderabad,  
Andhra Pradesh 500003

Tel: + 91 40 2790 3311 / 3312

Email: [ad@imrtindia.edu.in](mailto:ad@imrtindia.edu.in)

## Faculty

The program is designed and delivered by experts with years of experience in metro and rail technologies. Almost all faculty members are currently associated with the industry in a consulting role.

## Industry Problem Discussions

If your organisation 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: \_\_\_\_\_

Organisation: \_\_\_\_\_

Problem Statement:

## Application Form

**A Short Term Course on RAMS  
FOR RAILWAY SYSTEMS  
(July 11-15, 2016)**

### *Personal Information*

Name:

Designation:

Organization:

### *Contact Information*

Address:

Tel:

Mobile:

Email:

### *Payment Information*

DD Number:

Bank:

Amount:

Date:

*If payment is made online, then transaction details should be emailed to:*

[ngoyal@hijli.iitkgp.ernet.in](mailto:ngoyal@hijli.iitkgp.ernet.in)

or

[binoy.a@imrtindia.edu.in](mailto:binoy.a@imrtindia.edu.in)

*Please feel free to contact:*

Dr. N.K Goyal @ + 91 94347 41267 OR

Binoy A @ + 91 80088 01147

For any clarifications



### **Reliability Engineering Centre IIT Kharagpur**

IIT Kharagpur is the largest technical institution in India and ranked as the best institution in the country imparting technical education and research. The Reliability Engineering Centre came into existence in 1983. The centre offers M.Tech, MS and PhD degrees in Reliability Engineering. Besides, the centre is actively engaged in sponsored research and offers consultancy services to various public and private organizations.



### **Institute of Metro & Rail Technology**

IMRT is a first-of-its-kind institution that aims to become a knowledge leader in metro and rail technology. Apart from the flagship Post Graduate Program on Metro and Rail Technology (PGPMRT), IMRT provides modular short-duration programs for on-field engineers and custom programs for railway firms involved in manufacturing, construction, operations, and management.

### **The RAMS for Railway Systems, 2014 Course**

The first and second short term programs on RAMS for Railway Systems were conducted during July 21-25, 2014 and July 27 – 31, 2015. 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 Indian Railway in general through bringing awareness about RAMS concepts and provide basic training in these concepts.

### **Participating Organizations in 2014 and 2015 Course**

L&T Metro Rail

Hyderabad Metro Rail

Larsen & Tubro Limited

GG Tronix

Bombardier

Dedicated Freight Corridor Corporation

Alstom Transportation

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