# National Academy of Construction


# Quality & Reliability Management

**7 – 9 February, 2024**

NAC Grounds, Cyberabad, Hyderabad-500084,
Telangana, India
**Phone:** (040) 23111916 & 17

## INTRODUCTION

Today engineering systems are becoming more complex to design and build because of factors such as accelerated growth in new technologies system complexity and size. Quality and Reliability of a product or a service is essential for very survival of the Organisation. To improve the chances that a system will perform satisfactorily during its useful life, the interest in reliability and quality control has been growing at a considerable rate in recent years. Every organization is striving hard to continuously improve the quality and reliability of their products and in-turn their customer base.

Reliability is concerned with the performance of a product over its entire life time, quality control is concerned with the performance of a product at one point in time, usually during the manufacturing process. As stated in the definition, reliability assures that components, equipment and systems function without failure for desired periods during their whole design life, from conception (birth) to junking (death). Quality control is a single, albeit vital, link in the total reliability process. Quality control assures conformance to specifications. This reduces manufacturing variance, which can degrade reliability. Quality control also checks that the incoming parts and components meet specifications, that products are inspected and tested correctly, and that the shipped products have a quality level equal to or greater than that specified.

The program addresses practical pathways towards manufacturing cost reduc tion through product quality and reliability improvement. It explores ways to reduce or eliminate the impact of life limiting failure mechanism in design and manufacturing processes.

## OBJECTIVES

- Design process that leads to reliable systems with built-in quality.
- Fewer warranty-period failures for better operational reliability in the field, better image of organization and lower repair costs;
- Better economy through fault detection and correction during the product-development cycle
- Improved overall quality of the process/product and weed out infant-mortality

## COVERAGE

- Introduction to Quality & Reliability
- Concepts of Quality, Quality Management and Cost of Quality,
- Quality Management System Requirements/ Performance Improvements Measures
- Quality Improvement Tools/RCA
- Reliability, Maintainability, Availability, absolute and relative availability, reliability evaluation techniques, reliability activities in system design, reliability data.
- Failure Models
- Time dependent failure model: Weibull distribution, failure modes, burn-in life, three parameter Weibull
- Reliability of Systems
    - Simple System
    - State Dependent System
    - Physical Reliability Model
    - Design for Reliability
- Reliability Accelerated Testing
- FMECA, FTA

- Reliability Data & Analysis
- New Concepts in Reliability
    - Reliability Evaluation Using MIL-HDBK-217 plus
    - Baysian techniques for reliability Estimation
    - Condition Monitoring
- Case Studies

## METHODOLOGY

The programme will be conducted in a Virtual interactive environment providing scope for discussions. Emphasis will be on a highly participative style of learning through Presentations, Case Studies and hands-on exercises.

### Infrastructure requirement

A Desktop / Laptop with a high speed reliable internet connection and Audio & Video capabilities. A Headset is recommended.

Virtual Classroom through Zoom / Webex etc. Virtual Conferencing apps.

## TARGET PARTICIPANTS

Scientists, Managers, Designers, Manufacturing Engineers, Quality Engineers, Reliability Engineers, and others involved in improving product quality and reliability will benefit from attending this course. There are no prerequisites for this course; however, some background in engineering or sciences will be helpful.

## PROGRAMME VENUE, DATES & TIMINGS

***Venue***: NAC Campus, Hitex Grounds, Hyderabad – 84.

***Dates***: 7 – 9 February, 2024 ( 3 Days) **(or mutually suitable slot)**

***Timings:*** Every day the program timings will be from 10:00 – 17:00 Hrs., with breaks in between for tea and lunch.

## COURSE DIRECTOR

Director EDP Training –NAC

## FACULTY

Apart from core internal faculty, experts from industry, consulting firms, government organizations, academic and research institutions and others will share the sessions.

## Course Fee

1. **Virtual : Rs.12,000/- + 18% GST per participant.** Fee includes course material.

2. **Off-line : Rs.16,000/- + 18% GST per participant.** Fee includes course material, course kit, lunch, tea / coffee and snacks during the actual days oftraining program.

## CERTIFICATE

A certificate of participation will be awarded to each participant on conclusion of the program.

## MODE OF PAYMENT

Payment may be made by Electronic Fund Transfer (NEFT) to DG **NATIONAL ACADEMY OF CONSTRUCTION-HYDERABAD-SB A/c No. 62422229281** with SBI, MADHAPUR- 500 081, **IFSC Code SBIN0021162, GST No. 36AAAN0794MIDH**.

While using NEFT method of payment, please ensure to communicate us your company / individual name and program title in the transaction reference.

## REGISTRATION

To register please send your nominations giving details of name, designation, contact address, email address, mobiles no of the participant along with the details on mode of payment of fee.

**Addressed to:**

The Head

Corporate Quality and Productivity Division,

National Academy of Construction

NAC Grounds, Cyberabad, Hyderabad-500084,

Direct Phones: (040) 23111916-917 Fax :- (040) 23111997

Mobile: 9866114616, 8019158978

Email: sheshadri@nac.edu.in / info@nac.edu.in

Website: www.https://nac.edu.in

## Welcome to National Academy of Construction

**National Academy of Construction (NAC)** is registered as a **Society under State Government of Telangana** and incorporated as Public Charitable institution. Construction is one such area where technology is developing at a very fast rate. Hence one needs proper understanding of the technology and importance of proper training. Starting with one Centre and five trades and training 150 technicians per year, NAC has grown surely and steadily to 110 Centres throughout Telangana and Andhra Pradesh States and 21 trades today with target of training 1, 00, 000 technicians per annum. Apart from this its operations are reaching the nooks and corners of India, and also beyond sea sparing no hard ship and hindrance.

NAC is spread over 46 acres of prime land in the IT Corridor in Hyderabad. It is located adjacent to HITEX Exhibition grounds and HICC.

## Accolades

NAC received CIDC Vishwakarma Achievement Awards 2016, 2018 and 2019 for Best Construction Skill Development Organisation, Assocham Award 2018 and 2019 for Best Institute - Placement and Golden Peacock National Training Awards 2017 & 2019.

- **Assocham Award 2019**
- **CIDC Vishwakarma Award 2019**
- **Golden Peacock National Training Award 2019**
- **Assocham Award 2018**
- **CIDC Vishwakarma Award 2018**
- **Golden Peacock National Training Award 2017**
- **CIDC Vishwakarma 2016**

## Infrastructure

The facilities at the NAC campus consists of Auditorium, Seminar Halls, Class Rooms, Board Rooms, NAC Residency, Parking area under the Display Centre and Canteen.

## General Information

- NAC encourages participants to present case studies from their respective organizations.
- Well-developed Information Centre and Internet facilities are available to the participants.
- NAC campus is centrally located near to Hitech City, High Tech city MMTS station & Metro station.
- Close to major Shopping malls, Hitex and other convention & recreational centres etc.