



**DISCOUNTS ARE AVAILABLE**

# ADVANCED MAINTENANCE EXCELLENCE: INTEGRATING INDUSTRY 4.0



**1 WEEK TRAINING**  
**20-JUL-2024**  
**SATURDAY-SUNDAY**

**TOTAL CONTACT HOURS 12**



**NUST CERTIFIED COURSE**

## COURSE DESCRIPTION:

Advanced Maintenance Excellence: Integrating Industry 4.0 is a comprehensive course designed to equip professionals with advanced skills in maintenance management. Participants will gain a deep understanding of maintenance department design, performance management, continuous improvement methodologies like Total Productive Maintenance (TPM) and 5s, Industry 4.0 integration using Internet of Things (IoT), Artificial Intelligence (AI), and smart sensors for real-time data analytics. The course also covers Reliability Centered Maintenance (RCM) methodologies, such as Failure Mode and Effective Analysis (FMEA), and emphasizes the importance of safety in maintenance operation. Led by Dr. Antash Najib, an experienced researcher and industrial consultant, the course combines theoretical knowledge with practical exercises and case studies to enhance understanding and application of key concepts

## COURSE OUTLINE

- MAINTENANCE DEPARTMENT DESIGN
- MAINTENANCE PERFORMANCE MANAGEMENT
- CONTINUOUS MAINTENANCE IMPROVEMENT (TPM & 5S MODEL)
- INDUSTRY 4.0 INTEGRATION IN MAINTENANCE (IOT, AI & SMART SENSORS FOR REAL-TIME DATA ANALYTICS)
- RELIABILITY CENTERED MAINTENANCE
- MAINTENANCE & SAFETY

**LEARNING INVESTMENT**   
**RS: 20,000/-**



**Scan For Registration**

PNS JAUHAR, Habib Ibrahim Rehmatullah Road, Karachi, Pakistan

**NUST KARACHI CAMPUS**



# INDUSTRY 4.0



**NUST CERTIFIED  
COURSE**

## WORKSHOP CONTENTS:

### DAY-1

#### MODULE 1 MAINTENANCE DEPARTMENT DESIGN

1. Asset Management & Maintenance Management
2. Objectives & organization of Maintenance Department
3. Issues in Maintenance Organization
4. Exercise: Designing a Maintenance department

#### MODULE 2 MAINTENANCE PERFORMANCE MANAGEMENT

1. Maintenance Productivity & Performance
2. Maintenance Performance Measurement (MPM)
3. MPM-Overall Equipment Effectiveness (OEE)
4. Exercise: Calculating the OEE for a company

#### MODULE 3 CONTINUOUS MAINTENANCE IMPROVEMENT (TPM & 5S MODEL)

1. Total Productive Maintenance (TPM)
2. TPM: 5s Model and implementation
3. TPM: Components or Pillars
4. Exercise: Importance of 5s

### DAY-2

#### MODULE 4 INDUSTRY 4.0 INTEGRATION IN MAINTENANCE (INTERNET OF THINGS, AI AND SMART SENSORS FOR REAL-TIME DATA ANALYTICS)

1. Maintenance Management strategies
2. IoT technologies for real-time data analytics.
3. AI for predictive maintenance and anomaly detection.
4. Smart sensors and data collection.
5. Cloud computing and remote monitoring.
6. Cybersecurity considerations.
7. Case Study: Maintenance at a 4.0 automotive industry.

#### MODULE 5 RELIABILITY CENTERED MAINTENANCE

1. Historical background
2. RCM methodology
3. Failure Mode and Effect Analysis (FMEA)
4. Logic or Decision Tree Analysis (LTA)
5. Case Study: FMEA Power plant steam generator (boiler)

#### MODULE 6 MAINTENANCE & SAFETY

1. Significance of studying Maintenance & Safety
2. Interconnection between Safety and Maintenance
3. Root causes of safety-related issues in Maintenance
4. Approaches for Accident and Hazard Prevention in Maintenance



### ABOUT THE TRAINER:

Dr. Antash Najib is an accomplished researcher and industrial consultant with over 10 years of experience in the power generation, Oil & Gas and Energy R&D industries. Dr. Najib holds a PhD from the University of California, Davis, and has served in different roles at various industries including K-Electric Limited, Himark Biogas (Canadian Front-End Engineering Design Firm), ENI (Italian Oil and Gas company) and Western Cooling Efficiency Center, USA. He continues to work as a consultant and trainer for various National and International industries for areas related to maintenance and energy efficiency.

## CONTACT US

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