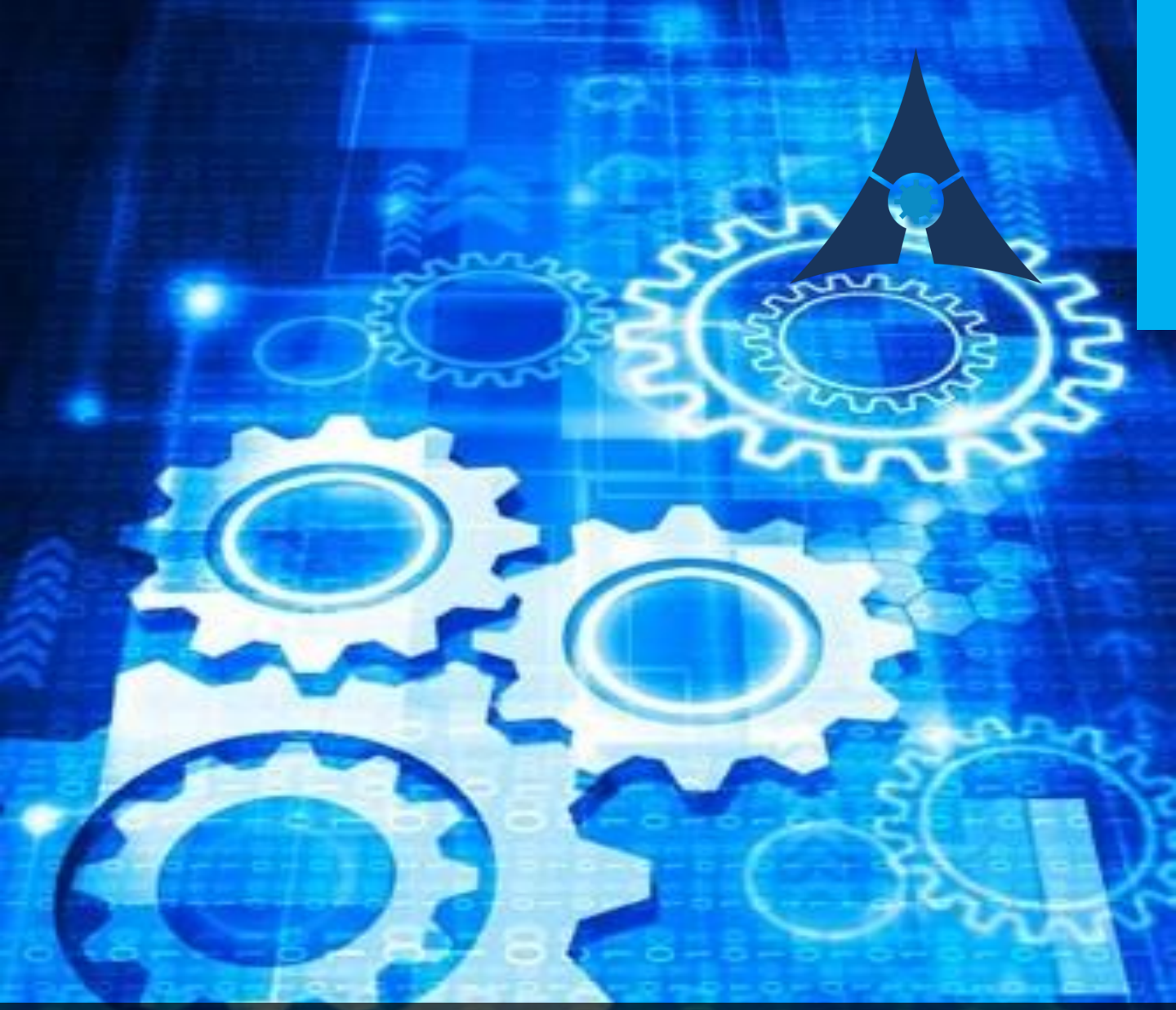


TRAINING PROGRAM ON

RAM Studies

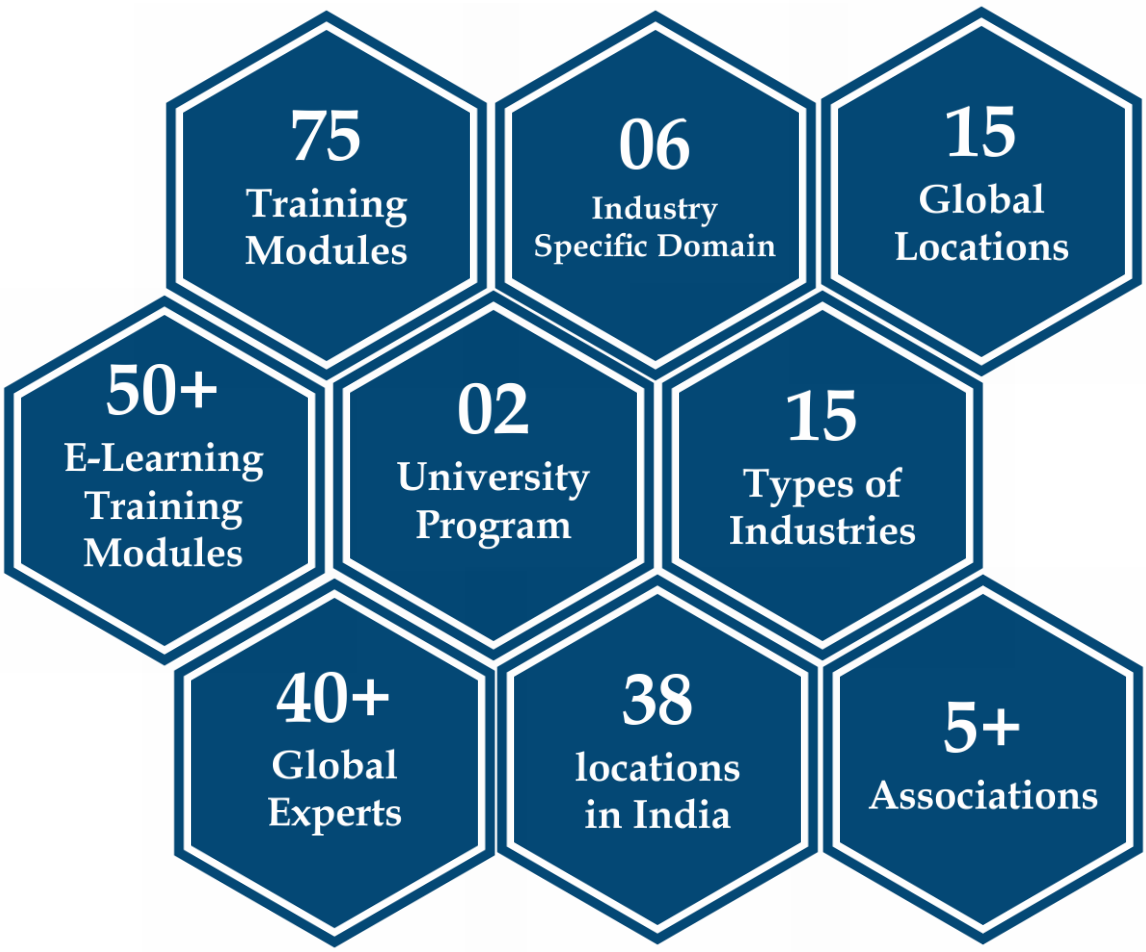
ABOUT ARRELIC TRAINING INSTITUTE

Arrelic Institute is focused to equip both industry professionals and college graduates with the skills and knowledge required for bridging the desire stare of workforce which industry needs to compete globally.

Arrelic Institute provides over 75 different type of customized training programs in the field of Reliability Engineering, Asset Management, Best Practice, Operation & Maintenance, Predictive Maintenance, NDT, Predictive Analytics, Quality, Risk & Safety.

Arrelic Institute conducts public trainings and workshops in 38 locations across India and 10+ International locations. We are working for large corporate house from 15 different types of industries ranging from Airlines, Automobiles, Cement, Defence Manufacturing, FMCG, Glass, Marine, Metals, Mining, Oil & Gas, Power, Pulp & Paper, Facility Management and Fertilizer.

ARRELIC INSTITUTE: AT A GLANCE



www.arrelic.com/offerings/training-and-development

ARRELIC AWARDS & RECOGNITIONS

NASSCOM®

TOP5

Won the Top 5 Startups in eastern India in Thieve 30 by NASSCOM

GLOBAL ENTREPRENEURSHIP SUMMIT INDIA 2017

Selected for GES – 2017, Hyderabad and showcased among top 100 Start-ups from India.

SMART FIFTY
50 Solutions to Transform India

TOP50

Emerged as one of the top 40 startups in #Smartfifty' – a search for solutions to transform India

PULSE THE VENTURE INSPIRING INNOVATION

Top 24 Start-ups selected over 1850 startups across India By CNBC.

NASSCOM® PRODUCT CONCLAVE

Selected for NPC – Bangalore and NPC – Kolkata for Product showcase.

TiE CON DELHI-NCR

Product showcased in TIECON – 2017 and selected through Govt. Of Odisha.

#startupindia

Startup India Recognize

Startup Odisha

STARTUP ODISHA recognised.

birac
Ignite Innovate Incubate

BIRAC finalist in SPARCH - 2017

web summit
LISBON, NOVEMBER 6-9, 2017

Selected for Web summit - Lisbon

hello tomorrow

Selected for Hello tomorrow, Paris Summit.

100 open startups

Selected and presented in 1000 open startups.

ABOUT THE TRAINING COURSE
RAM STUDIES

RAM Studies are used as a way of assessing a production system's capabilities, both in operation and those still in the design phase. As facilities and plants are being used for longer period of time, a Reliability, Availability and Maintainability Study is able to provide an assessment into the assets life time capabilities and enable businesses to maximise on their return on investment.

A RAM Study can be shown to be broken up into three separate areas:
• Reliability Services – Predicting the probability in which a system will not experience an unplanned outage;
• Availability Services – Predicting the probability in which the system is working in a functioning state when required, including both planned and unplanned outages;
• Maintainability Services – Predicting the probability in which a product / system can be repaired following a failure within a specific time frame.
A well-designed and properly implemented asset optimization program can significantly lower project costs.

Reliability, Availability & Maintainability (RAM) modelling assesses a production system's capabilities, whether it is in operation or still in the design phase. The results from a RAM modelling will identify possible causes of production losses and can examine possible system alternatives. The RAM study is thus a tool for decision-making with help for costs versus benefits analysis. RAM studies will generate sufficient data needed in order to make decisions for possible systems changes that may increase system efficiency, and therefore increase project profits.

With the combination of these three services combines into one study, Arrelic is able to offer a RAM Study that models the predicted production capabilities of a facility.

LEARNING OBJECTIVES & KEY BENEFITS OF ATTENDING THE WORKSHOP

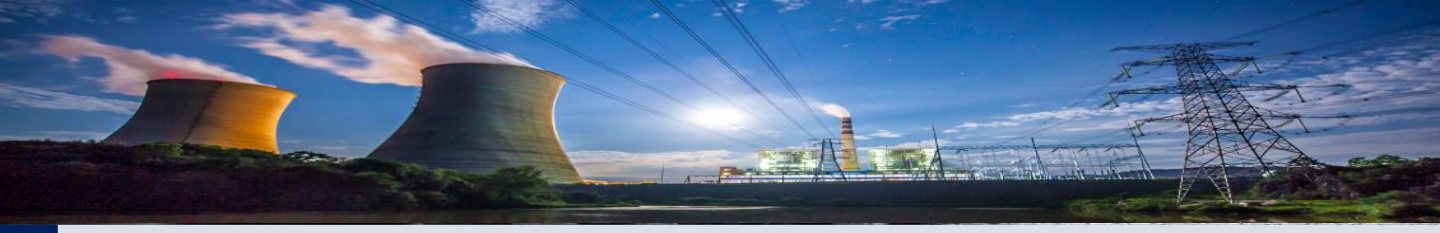
By attending this technical training on **"RAM STUDIES"** delegates will be able learn and deliver the following things.

- ✓ **Identifying bottlenecks in the production;**
- ✓ **Detecting failures in the early part of design;**
- ✓ **Comparing different design options for production;**
- ✓ **Optimizing maintenance schedules;**
- ✓ **Increasing the effectiveness of logistics;**
- ✓ **Identifying equipment maintenance priorities on failure;**
- ✓ **Meeting contract production requirements;**
- ✓ **Produce a RAM Study customised based on the needs and requirements of the client;**
- ✓ **Identify potential critical pieces of equipment;**
- ✓ **Identify the equipment that has the highest risk of causing operational failures;**
- ✓ **Identify possible causes of production losses and examine the possible alternatives to overcome them;**
- ✓ **Produce a RAM Study based on different system configurations;**
- ✓ **Produce recommendations on how to improve the system availability;**
- ✓ **Produce a record of the RAM Study in the form of a formal report, detailing an overview of the RAM Study, including any assumptions made as well as the findings as part of the study.**

WHO SHOULD ATTEND ?

Successful RAM Studies programs require the disciplined application of proven processes and interdepartmental partnerships. It is important for departments that are influenced and impacted by the processes to understand the processes. People in the following roles should participate in this training:

- ✓ **Quality Managers**
- ✓ **Quality Engineers**
- ✓ **Lean practitioners**
- ✓ **Business Process Owners,**
- ✓ **Process Improvement Managers**
- ✓ **System implementers**
- ✓ **Management representatives**
- ✓ **System coordinators.**



INDUSTRIES THAT CONCERN ABOUT

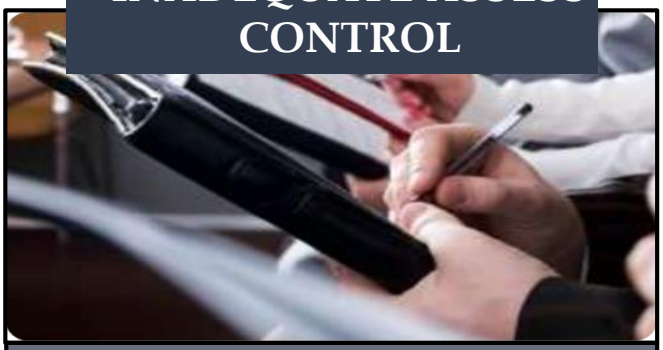
LOW PRODUCTIVITY

Conventional use of time-based approach for maintenance does not take into consideration the way assets are being utilized, their current condition and real world operating conditions.

HIGH DOWNTIME

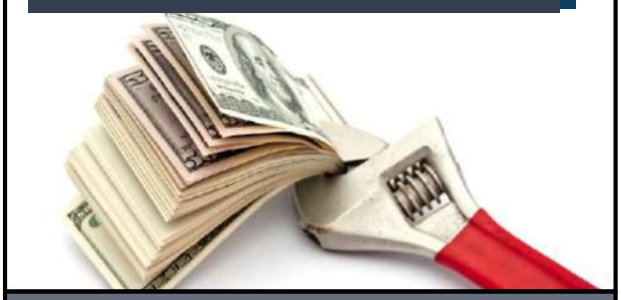
Failure to curb unplanned downtime and lack of control over value chain processes lead to high costs , inefficiencies and poor compliance. These severely impacts the profit and industrial growth.

INADEQUATE ASSESS CONTROL

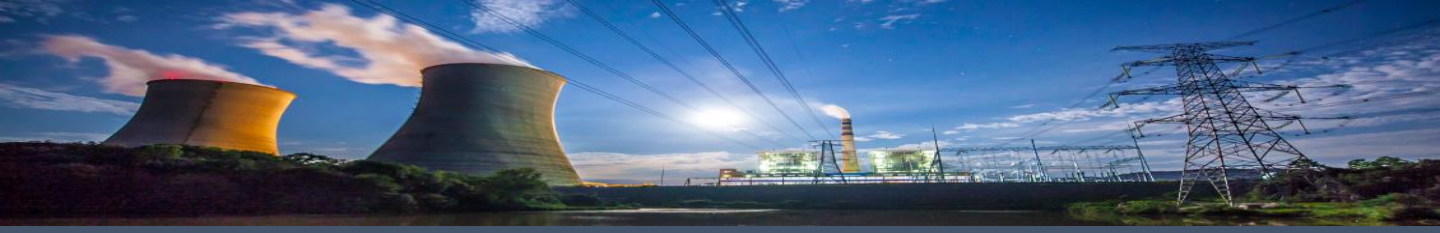


Industries lack the ability to interpret assets data and because of unavailability of proper predictive methods they are unable to predict equipment failures which leads to unplanned downtime.

HIGH MAINTENANCE COST



Increased competition, pressure to grow revenue & profit , tighter regulations, scarcity of raw material, fluctuation demand and obsolete technologies have impacted the way industries are being operated.



COURSE OUTLINE

DAY – 1

FUNDAMENTAL
- ✓ Introduction to RAMS
- ✓ Benefits of a RAMS
- ✓ Definitions of Terms and Measures in RAMS
- ✓ RAMS Analysis Introduction

RAMS MATHEMATICS AND STATISTICS
- ✓ Fundamental RAM mathematics
- ✓ Introduction to statistics
- ✓ Key probability distributions
- ✓ Monte Carlo Simulation

RAM SYSTEM MODELLING AND ANALYSIS
- ✓ Fault trees
- ✓ Reliability Block Diagrams (RBDs)
- ✓ Repairable System Analysis
- ✓ Reliability Growth Modelling

REVIEW & Q/A

DAY – 2

RAMS ASSURANCE
- ✓ Reliability Demonstration Testing (RDT)
- ✓ Reliability Growth Planning (RGP)
- ✓ RAM Analysis

PHYSICS OF FAILURE
- ✓ Failure Mechanisms
- ✓ Case Studies

COURSE REVIEW
- ✓ Learning and developments in the RAMS
- ✓ Tips to Success in RAM Systems

POST ASSESSMENT

PROGRAM SCHEDULE

09:00 -10:30	Morning Session 1	13:30 -15:00	Afternoon Session 1
10:30 -11:00	Refreshments & Networking Break	15:00 -15:30	Refreshments & Networking Break
11:00 -12:30	Morning Session 2	15:30 -17:00	Afternoon Session 2
12:30 -13:30	Lunch	17:00 -17:30	Day review & Q/A