



Centre For Industrial Solutions and Advanced Training

A Global Services and Industrial Solutions Provider Company

An ISO 9001:2015 Certified

GST No: 27ABBPW5589J1ZV; Web: www.cisat.co.in; cisat.nagpur@gmail.com; Contact: +91-7709012815

Communication Address: 503, Sai Sankul, Plot D, Swamy Colony, Aakar Nagar, Friends Colony. Katol Road, Nagpur-440013, MH, India

MSME no: MH20E0054775; Udyam Registration Certificate No: UDYAM-MH-20-0026894

Dear Sir/Madam,

Greetings from CISAT! An ISO 9001:2015 certified Global HR/Training Service Provider Company.

CISAT Invite you to participate (Nomination) in a Two Days Training Programme on

Reliability Centered Maintenance (RCM) and FMECA

6-7 June 2022@Mumbai

The Reliability-Centered Maintenance process presented here is used to apply RCM techniques to identify applicable and effective preventive maintenance tasks in support of a Condition Based Maintenance program. It also allows the user to develop and document rationale and justifications for preventive maintenance task recommendations.

Overall course objectives:

Upon completion of this course participants will be able to:

1. Describe the RCM and FMECA theory.
2. Correctly apply RCM and FMECA principles in development of a Planned Maintenance System
3. Understand the use of RCM and FMECA principles in the continuous sustainment of a Planned Maintenance System

Course Contents: -

1. Introduction to RCM
2. Introduction to FMEA/FMECA
3. Identify the Problem for Improvement in Maintenance strategy
4. Determining the Right Maintenance Strategy for Plant efficiency improvement
5. Condition Monitoring Principle and practices
6. Measuring Results of RCM / PdM - Implement the Best Practices Solution

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software), Software Development, Automation Solutions.

"A Complete Industrial Solution (Outsourcing) under One roof"



Centre For Industrial Solutions and Advanced Training

A Global Services and Industrial Solutions Provider Company

An ISO 9001:2015 Certified

GST No: 27ABBPW5589J1ZV; Web: www.cisat.co.in; cisat.nagpur@gmail.com; Contact: +91-7709012815

Communication Address: 503, Sai Sankul, Plot D, Swamy Colony, Aakar Nagar, Friends Colony, Katol Road, Nagpur-440013, MH, India

Day -1: Session -1

Maintenance Strategy to practice under different situations.

Session -2

Developments & Adopting Modern Maintenance Approach.

Functional Failures and Failure Effects; Failure Consequences; RCM Actions

State the 3 different RCM actions to be evaluated for implementation based on failure assessment.

Session -3

Predictive Maintenance philosophy & RCM (Reliability Centered Maintenance) Approach.

Session -4

Understanding root cause of Equipment failures under different situations.

Day -2: Session - 1

How to prevent equipment (fixed or mobile) failing before planned replacement?

Session -2

Pro-Active Maintenance Approach & strategy for Component Life Enhancing Activities.

Discuss the purpose of performing Functional Failure Analysis (FFA)

Session -3

1. Failure Modes and Effects Analysis (FMEA)
 - Documenting Failure modes and effects
 - Rationale and Justification: Why we made these choices.

Session -4

2. Decision Logic Tree
 - Types of Failures and Failure Consequences
 - The three RCM related actions
 - Using the Decision Logic Tree

Certification: Every successful participant will be awarded a course completion certificate.



Centre For Industrial Solutions and Advanced Training

A Global Services and Industrial Solutions Provider Company

An ISO 9001:2015 Certified

GST No: 27ABBPW5589J1ZV; Web: www.cisat.co.in; cisat.nagpur@gmail.com; Contact: +91-7709012815

Communication Address: 503, Sai Sankul, Plot D, Swamy Colony, Aakar Nagar, Friends Colony. Katol Road, Nagpur-440013, MH, India

Delivery Methodology (Strategy):

- Introduction and Objective Setting
- Pre and Post Test,
- Knowledge Presentations,
- Assignments & Exercise,
- Feedback and Assessment
- Discussion and Interaction
- Delivery 10:00 AM to 17:30 PM

About CISAT:

Centre For Industrial Solution and Advanced Training is an ISO 9001:2015 certified Global Training Provider Company managed by professionals with rich Industry and professional training experience. Company involves in professional trainings and been providing training on various topics of Industry interest through various experts associated. More details are available on www.cisat.co.in.

For Registration please do contact to, We do prefer on line Registration through our web www.cisat.co.in.

1. Vikas +91-8669546332; 7709012815; vikas@cisat.co.in; cisat.nagpur@gmail.com;

Registration Details:

Dates of the program: 6-7 June 2022 at Mumbai (MH).

Nonresidential Participation fees: INR 24500/participant (Excluding GST@18%);

Payment: ECS/NEFT/DD in favor of “Centre for Industrial Solutions and Advanced Training” Bank: IDBI, Sadar, Nagpur, Maharashtra 440018, India; Account No: 0509 1020 0000 3353; IFSC Code: [IBKL0000648](#); MICR Code [440259006](#); Swift Code IBKLINBBNGP.

Venue: To be informed post nominations confirmation.

Contact for any In-house Training/Webinar or other nominations at your plant or location.

Looking forward to further communication from you soon.

With Best Regards and Thanks,

Mrs. Rupali (Contact: +91-7709012815)

Director Business Development

www.cisat.co.in; Email: cisat.nagpur@gmail.com; 7709012815

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software),

Software Development, Automation Solutions.

“A Complete Industrial Solution (Outsourcing) under One roof”



Centre For Industrial Solutions and Advanced Training

A Global Services and Industrial Solutions Provider Company

An ISO 9001:2015 Certified

GST No: 27ABBPW5589J1ZV; Web: www.cisat.co.in; cisat.nagpur@gmail.com; Contact: +91-7709012815

Communication Address: 503, Sai Sankul, Plot D, Swamy Colony, Aakar Nagar, Friends Colony. Katol Road, Nagpur-440013, MH, India

TERMS & CONDITIONS FOR TRAINING/Workshop:

- All training courses will require a minimum of 8 participants for confirmation.
- In the event of cancellation of a course, we will endeavour to inform all candidates a week before the course is due to take place. In such case all course fees paid will be reimbursed in full or the payment will be transferred in full to another course.
- CISAT shall not accept liability for any consequential loss and shall have no liability to reimburse any other costs that may have been incurred, including transport costs, accommodation etc.
- Special arrangements can be made for group bookings.
- Certificate of participation will be issued when payment has been received in full.

Training Calendar July 2022 (Goa, Kolkata, Nagpur, Pune, Delhi, Mumbai, Chennai, Ahmedabad and Hyderabad)						
Sr No	Month	Name of the Program	Duration in Days	Date1	Location	Fees
Electrical Engineering/Automation/Process/C&I						18% GST extra
1	July	Substation (765/400/220/132/66/33 KV) Engineering, Design, HV/MV Testing of S/S Equipment's , Commissioning and Protection (Transformer, CB, Relay)	4	10-13	Nagpur	34000
2	July	Energy Saving techniques in Industrial Utilities: Power and Energy Management, Energy Auditing Methods, Case Studies.	3	25-27	Nagpur	24000
3	July	HIRA for Electrical, Arc Flash, Safety Auditing, Electrical Safety and International Standards (NFPA 70E, NESC, IEEE, IE)	2	5-6	Nagpur	18000
4	July	High Voltage Electrical Safety, Factory Act and IE/CEA Applicable standards, Arc Flash and Mitigation Techniques	2	22-23	Kolkata	18000
5	July	PLC-SCADA Industrial Engineering Application	4	15-18	Pune	30000
6	July	Generator: Operation, Maintenance, CBM & Performance improvement	2	15-16	Nagpur	20000

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software), Software Development, Automation Solutions.

"A Complete Industrial Solution (Outsourcing) under One roof"



Centre For Industrial Solutions and Advanced Training

7	July	HT/LT Motor: Operation, Maint and CBM; Protection and Relay Setting	2	29-30	Nagpur	20000
Mechanical/Production Engineering						
1	July	HVAC: Design, Energy Saving	2	8-9	Mumbai	20000
2	July	Pump and Air Compressor: Operation, Maintenance, Troubleshooting and PPMT; Efficiency Improvement Techniques	2	22-23	Nagpur	20000
3	July	Hydraulics & Pneumatics and Valve: Operation, Maintenance, Troubleshooting and PPMT, CBM	2	24-25	Nagpur	20000
4	July	Pressure Safety Valve (PSV) (Fundamentals, Design, Sizing and Parameter, Operation & Maintenance, Troubleshooting)	2	29-30	Mumbai	20000
5	Aug	Heat Exchanger Tube and Shell Type: Design, Operation, Maintenance & troubleshooting	2	1-2 Aug	Kolkata	20000

Schedule for Classroom Training June 2022 Kolkata For nominations Email: cisat.nagpur@gmail.com; Call Vikas +91-7709012815; 8669546332

Dates of Training are proposed. Confirmation post nominations only. Min 6/8 participation required for all trainings.

Sr No	Day /s	Date	Subject/Topic	Morning – 10.00 AM to 13.00 noon	Evening – 2:00 PM to 5.00 PM	Charges + 18% GST
Electrical Engineering Maintenance; Instrumentation and Control Engineering						
1	Day 1	2-4 June 2022, Kolkata	Relay Setting, Relay Parameter, Relay Coordination, Advanced Power System Protection, Transformer and Motor Protection	Concept of Relay Setting and relay Parameters. TMS, PMS and other.	Relay Coordination and Relay setting, Examples, Q&A. CT/PT requirement etc.	INR 27000/- per head
	Day 2		Transformer Protection and Relay coordination	Transformer Protection (REF, Differential, OC, S/C,		
	Day 3		Line protection, Distance protection, Motor Protection, CBM, Q&A etc.			
2	Day 1	6-7 June Kolkata	HT Motor and Transformer; Operation, Maintenance, Protection and CBM	Review of Objective, Operation & Maintenance. Starting and Failure, Protection and CBM.	Motor Protection, Relay setting, Case study and discussion	INR 20000/- per head

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software), Software Development, Automation Solutions.

"A Complete Industrial Solution (Outsourcing) under One roof"



Centre For Industrial Solutions and Advanced Training

Mechanical Engineering Maintenance Techniques, CBM, Energy Saving, Lubrication etc at Kolkata						
3	Day 1 & 2	8-9 June Kolkata	Electrical Drives:	Complete Function, Drive Components,	Control, Failure, Maintenance, Parameters and Hands ON	INR 20000/- per head
4	Day 1/2	10-11 June Kolkata	Electrical Safety, HIRA, Arc Flash, Auditing, International Standards (NFPA 70E, NESC, IEEE, IE), Hazardous Areas (Mining, O&G, Chemical) and mitigation.	Introduction to Electrical Safety, Electrical Fire, Electrical safety in Explosive areas, HIRA	Safety implementation procedure and requirements.	INR 18000/- per head
				Arc Flash and Mitigation, Arc Flash Calculation, Various Standards of safety.	Management of RISK, Audit and Accident Investigation, Earthing	
5	Day 1, 2,3,4	13-16 June Kolkata	4 Days Training on: PLC Engineering Applications, SCADA & HMI (As per participants Requirement)	PLC- Programming, Maintenance, troubleshooting; PLC: Any of (Mitsubishi, ABB, Delta, Siemens, Allen Bradley(Rockwell) L&T). Where as query will be answered.	SCADA: Programming, Alarms, History, Trends etc, Scada: Intoch, Rs View32, Elipse HMI: Mitsubishi, Delta ABB Robot , ABB DCS	INR 30000/- per head
6	Day 1	16-18 June, Kolkata	Testing of Electrical Equipments , O&M, and Condition Based Maintenance.	O&M of electrical equipments (Transformer, Motor, LA, CT, PT, Cable etc) CB (SF6, ACB and VCB)	Testing of Equipments on site during commissioning and regular maintenance.	INR 30000/ participation
	Day 2			CBM and Best Maint Practices.	Protection System applicable.	
	Day 3					
7	Day 1	2-4 June Kolkata	3 Days Training Programme on Industrial Rotating Machineries in a Plant: Operation, Maintenance, CBM, Performance and Efficiency Improvement Pumps, Air Compressors,	Module 1: Pumps - Operation and Maintenance:• Pumps - Principles and Characteristics • Pump Details and Materials• Selection of Pumps•Routine Maintenance of centrifugal Pumps•Pumps - Operation, Maintenance and Trouble Shooting• Energy Saving in Centrifugal Pumps• Pump shaft Couplings – Types and Method of Alignment	Module 4: Bearings- Types, Selection & it's fitting and Failure Analysis• Anti-friction Bearings- Types• Care in Bearings fitting and dismounting• Bearing Failure Analysis	INR 27000/ participation + 18% GST
Day 2	Module 2: Gears & Gear Boxes• Type of Gears• Gear Teeth Construction Details• Gears Failure Module 3: Air Compressors• Maintenance of Air Compressors •Compressed Air System and Compressor Efficiency•Air Dryers Energy Conservation and How to save energy?•Review and Feed back			Module 5: Air compressors & Blowers –Operation and Maintenance•Selection and Application of Air Compressors• Reciprocating Air Compressor• Screw Compressors•Centrifugal Air Compressor; Overview of API 610 and API 674Module 6: •Type of Lubricants & Selection of Lubricant•Handling, Storage and Application of lubricants•Bearing Lubrication & Method of Applying Lubricants.		

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software), Software Development, Automation Solutions.

"A Complete Industrial Solution (Outsourcing) under One roof"



Centre For Industrial Solutions and Advanced Training

	Day 3		Bearings and Lubrication techniques.			
8	Day 1	6-8 June 2022, Kolkata	Power and Energy Management in Industrial Utilities: Energy Auditing, Power saving Techniques and Management	1. Energy management and audit action planning- calculation and energy saving in detail	2. Energy efficiency of electrical power distribution systems, Fans, Motors, Lights etc.	INR 27000/ participation
	Day 2			3. Energy efficiency of Pumping systems, Compressors.	4. Energy efficiency of Air Conditioning and Refrigeration Systems.	
	Day 3			5. Power factor Improvement Techniques and applicable approach. Case Studies.	6. Approach towards conducting energy efficiency study of equipment's.	
9	Day 1	6-7 June Kolkata	"Advances in Lubrication and Lubricants"	Session: 1 · Introduction · Basics of Lubrication · Why Lubricate Machines · Types of Lubricants · Lubricant as Maintenance kit	Session 2 : · Oil vs. Grease Lubricants · Classification and source of Base Oil · Characteristics of Base oil · Additives and Role & Type of Additives · Grease as Lubricant · 5 major Tribological Tests for Grease and its significance · How grease fails and what to look for · Q&A Session	INR 18000/Head
	Day 2			Session 3: Grease Compatibility · Effect of over greasing · Fundamental of Industrial Oils (Four major Types) and Performance Parameters / Test Standards · Understanding basic performance characterises for different lubricating oil · Factors affecting performance Failure mode of Lubricants	Session: 4 · Lubrication Systems · A few Case Study · Sources of Contamination · Storage and Handling · Safety and Best Practices · Q&A Session · Review	
10	Day 1	10-11 June Kolkata	Hydraulics and Pneumatics; O&M, CBM, Faults and remedies	Hydraulics and Industrial Application: An overview, Main Components of Hydraulics	Hydraulics Pumps, Cylinder, Actuators and Valves	INR 20000/- per head
	Day 2			Reading of Hydraulics Drawing; O&M	Hydraulics Oil, Oil Contamination, Leakage, Q&A, Case Studies	

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software), Software Development, Automation Solutions.

"A Complete Industrial Solution (Outsourcing) under One roof"



Centre For Industrial Solutions and Advanced Training

11	Day 1	13-15 June at Kolkata	World Best Maintenance Strategies, Practices, Effective Predictive, Preventive and Condition Based Maintenance Techniques	Maintenance Concept – Basics; Concept of Asset Management	Types of Maintenance – Selection Strategy; Concept of CBM and RCM	INR 30000/- per head
	Day 2			Equipment Criticality Analysis; Concept of FMEA	CBM Techniques; NDT Techniques and MCA	
	Day 3			NDT Techniques	Case Study	

12	Day 1	17-18 June 2022, Kolkata	Pump and Air Compressor: Operation, Maintenance, Troubleshooting and PPMT; Efficiency Improvement Techniques	Pumps - Operation and Maintenance: v Pumps - Principles And Characteristics v Pump Details and Materials; v Selection of Pumps v Routine Maintenance of centrifugal Pumps v Pumps - Operation , Maintenance and Trouble Shooting v Energy Saving in Centrifugal Pumps; v Pump shaft Couplings – Types and Method of Alignment	v Type of Lubricants & Selection of Lubricant v Handling, Storage and Application of lubricants v Bearing Lubrication & Method of Applying Lubricants.	INR 20000/- per head
	Day 2			Bearings; Gears & Gear Boxes; Air compressors & Blowers –Operation and Maintenance	Air Compressors v Maintenance of Air Compressors v Compressed Air System and Compressor Efficiency, Air Dryers Energy Conservation and How to save energy? v Review, Final Quiz, Assessment & Feed back	

13	Day 1	23- 25 June (Mum or Kolkata)	“Bearing Maintenance Technology, Vibration Analysis Technology and Precision Shaft Alignment”	Day 1: Training Programme on “Bearing Maintenance” <ul style="list-style-type: none"> Basics of Bearing Bearing Selection Criteria Video Clips /Movies on Practical Mounting & Dismounting Of Bearings Bearing Lubrication Introduction to Various Bearing Failures, Discussion on Causes of Bearing Failure Discussion on Corrective Action to be taken to minimize bearing failure to enhance Bearing Life. 	<ul style="list-style-type: none"> Pre-Alignment Checks Soft Foot Concept Alignment Methods Video /Movie Clips on Precision Shaft Alignment practical’s on Real Machinery with Laser Alignment Tool Kit. Day 3: Training Programme on “Vibration Analysis Fundamentals” Fundamentals of Machinery Vibrations Vibration Standards for Various Equipment’s according to ISO 101816 Spectrum Analysis Analysing Typical Machinery Problems Video /Movie Clips on Vibration Data Collection Practical’s with FFT Analyser on Real Machinery 	INR 30000/participation + 18% GST
	Day 2			Day 2: Training Programme on “Precision Shaft Alignment” <ul style="list-style-type: none"> Alignment Definitions & Importance of Alignment Types of Misalignment & Detection of Misalignment with Condition Monitoring Technology 		
	Day 3					

Services: Complete Industrial Services, HR/ Training, O&M, Project, Energy/Safety Audit by accredited Firm, HR Automation System (ERP Software), Software Development, Automation Solutions.

“A Complete Industrial Solution (Outsourcing) under One roof”