



# CMRT

Certified Maintenance  
& Reliability Technician

# Course Description:

- This Maintenance and Reliability Technicians Best Practices course is designed to give new and veteran maintenance technicians an overview of the knowledge required to become a Certified Maintenance and Reliability Technician (CMRT). The course covers the four domains of practice and knowledge proficiency required of a CMRT.



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# The Training Course will highlight:

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- The course covers the four domains of practice and knowledge proficiency required of a CMRT.

# Course Objective:

- Course attendees will gain knowledge and proficiency in four specific areas of maintenance and reliability practice to help them prepare for certification.
- **Maintenance Practices** – General maintenance activities related to safe and effective performance of maintenance activities
- **Preventive and Predictive Maintenance**– Best practices in PM, condition monitoring, and lubrication
- **Troubleshooting and Analysis** – Best practices for performing troubleshooting activities related to breakdowns and continuing equipment issues
- **Corrective Maintenance**– Best practices for performing corrective maintenance activities designed to restore equipment to full function.

# WHO Should attend?

- Individuals who either supervise or are interested in becoming Certified Maintenance and Reliability
- Technicians will benefit from attending this course.
- **Level of the Course**
- **(Foundation/Intermediate/Advanced) and Prerequisites for Attending the Course (if the level is**
- **Intermediate/Advanced):**
- This is a foundation level course.

# Training Methods:

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- This course will be presented using a combination of lectures, individual exercises, group exercises, and interactive computer-based exercises.





# Day 1

- **Domain I: Maintenance Practices**
- **Safety, health, and environmental standards and practices**
- Work scheduling and interfacing with production
- Lockout/tag out (LOTO) procedures
- Inspection and use of special equipment and tools
- Use of measuring tools such as micrometers, torque wrenches, etc.
- Best practices for handling maintenance materials
- Housekeeping best practices
- Documentation of maintenance activities

# Day 2

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## Doman II: Preventive and Predictive Maintenance (Part 1)

- Performing preventive and predictive maintenance activities
- Preventive maintenance inspections
- Writing inspection specifications
- TPM Concepts of PM/PdM
- Autonomous Maintenance
- Essential Care and Condition Monitoring for Operations
- Essential Care and Condition Monitoring for First Line Maintenance

## Best practices for maintenance of protective systems

- Recognizing hidden failures
- Rebuild versus replace decisions

## Doman II: Preventive and Predictive Maintenance (Part 2)

- Application of predictive maintenance technologies
- Vibration analysis
- Thermography
- Ultrasound

## Lubricant analysis

- Lubrication best practices
- Proper application
- Maintaining required cleanliness

# Day 3

- **Domain III: Troubleshooting and Analysis**
- Working with production personnel to gather knowledge about problems
- Verifying the problem
- Using technical documentation
- Reviewing maintenance history
- Identifying the cause of the problem
- Root Cause Analysis
- Physical versus human and systemic causes



# Day 4

## Domain IV: Corrective Maintenance

- Precision Maintenance Methods
- Quality assurance for maintenance work
- Quality control for maintenance
- Writing maintenance task instructions
- Maintenance personnel qualifications
- Training for precision and workmanship
- Tools and Methods for Precision Maintenance

## Precision Alignment

- Rotating Equipment
- Flanged Piping o Precision in Lubrication o Precision in Assembly
- Mechanical Equipment
- Electrical Equipment

## Verifying the “fix”

- System testing
- Verifying work quality

# Day 5

- Test