

# **CERTIFIED MAINTENANCE AND RELIABILITY PROFESSIONAL (CMRP)**

## **EXAM PREPARATION TRAINING**

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VELOSI TRAINING  
INSTITUTE L.L.C.





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## INTRODUCTION

Velosi Training Institute is conducting Certified Maintenance and Reliability Professional (CMRP) Exam Preparation Trainings Online.

Velosi is a leading global consulting firm that provides Asset Integrity Management, HSE, Engineering, Environmental and Software Solutions to clients in the Oil & Gas, Energy, Power and Petrochemical industries around the world.

We provide both standard and customized industrial safety training courses that are specially designed to meet the varied workplace requirements of today's training standards.

**WE HELP YOU TO  
BUILD A STRONG  
FOUNDATION AND  
SCORE HIGHER**





# CERTIFIED MAINTENANCE AND RELIABILITY PROFESSIONAL (CMRP)

The Certified Maintenance & Reliability Professional (CMRP) program is the industry standard for validating maintenance, reliability, and physical asset management professionals' expertise, skills, and abilities. It is the only ISO-accredited credential for individuals working in the maintenance, reliability, and physical asset management fields. The CMRP, awarded by the Society of Maintenance and Reliability Professionals (SMRP), educates and assesses professionals in the areas of industry and management, manufacturing process reliability, equipment reliability, organization and leadership, and job management.

## BENEFITS OF CMRP CERTIFICATION



INCREASED JOB  
OPPORTUNITIES



CAREER  
ADVANCEMENT



TECHNICAL  
EXPERTISE



WORLDWIDE  
RECOGNITION



**EXPERT TRAINERS  
WITH GOOD TRACK  
RECORDS!**



## TRAINING CONTENT

**The training content for this program is as follows:**

- CMRP Certifications & All Pillar Body of Knowledge (BoKs)
- Operator Driven Maintenance (ODM/ODR)
- Maintenance Strategies
- Understanding of PF Curve
- Introduction to predictive maintenance
- CBM/PdM Technologies
- Maintenance and Reliability Tools
- Maintenance Work Process Management
- Workforce Management
- Lean Manufacturing in maintenance
- Reliability Centered Maintenance
- Best Practice & Managing Performance
- Inventory management



## LEARNING OBJECTIVES

**Upon successful completion of this 12-day course, participants will have gained knowledge in:**

- Applying knowledge to apply several reliability tools.
- Understanding the application of the Asset's Life Cycle.
- Analyzing the plant equipment failure events by using quantitative reliability methods such as Weibull and RAM analysis.
- Applying Preventative Replacement calculations to determine the Optimal Replacement Time.
- Determining optimum maintenance strategies based on failure statistical analysis.
- Understanding condition monitoring fundamentals and benefits.
- Determining maintenance task's optimal frequencies.



## WHO SHOULD ATTEND?

This course is encouraged for a professional who hopes to learn and perform at a higher level but not limited to:

- Operations Managers
- Production Supervisors
- Maintenance Directors, Managers, Supervisors, Engineers, Superintendents and Personnel
- Reliability Managers/Engineers
- Manufacturing Managers
- Storeroom Managers
- Continuous Improvement Managers
- TPM Coordinators
- Plant Engineers and Operators
- All those who are directly or indirectly involved in maintenance and reliability related projects.

## PRE AND POST COURSE ASSESSMENTS

Each participant will complete their course assessment to gauge their current levels of knowledge and experience. At the conclusion of the course, participants will then complete a post-course assessment to ensure the material was presented effectively.

## WHO IS ELIGIBLE TO TAKE THE CMRP CERTIFICATION?

The CMRP examination is accessible to any professional involved in the field of maintenance and reliability operations. There is no prerequisite and only has to submit the application and pass the examination. Candidates are required to sign a code of morals explanation, which validate to the truth that they have not taken the exam within the last six months and have not been indicted of a lawful offense or other wrongdoing of ethical turpitude beneath worldwide, national, government or state law in any matter related to upkeep and unwavering quality.

# PROGRAM OVERVIEW

The course is a 05-days interactive training course aimed at giving trainees an overview of the fundamental pillars of Reliability and Maintenance, as defined by the Society of Maintenance and Reliability Professionals. Separately from the course, an examination for the SMRP certification of Certified Maintenance and Reliability Professional test will be organized right after the conclusion of the course.

Each course module covers one of the 5 pillars of a Reliable Manufacturing Organization, as defined by the Society of Maintenance and Reliability Professionals (SMRP) body Of knowledge for the CMRP certification. For individuals that are new to the world Of Reliability and Maintenance, the course will provide an overview of aspects to master, For individuals aiming to take the CMRP test' the course Will provide a refresher session before the actual test. The Certified Maintenance and Reliability Professional (CMRP) program is the primary certification for skills, knowledge, and abilities of maintenance & reliability Professionals. Assessing more than just textbook knowledge, the exam tests validate the skills and abilities of maintenance and reliability professionals according to the objective of the body of knowledge. The areas to be examined are:



## Business and Management

Covering how to translate business goal into maintenance and reliability goals that support an organization business results.

## Equipment Reliability

Assessing capabilities of equipment and processes used to select and apply the most appropriate maintenance practices to ensure a safe and cost effective delivery.

## Manufacturing Process Reliability

Applying proven current methods and new data-driven analytical technologies to support optimum manufacturing process.

## Organization and Leadership

Of the maintenance and reliability staff as the most qualified and best assigned to achieve the maintenance and reliability organizational goals.

## Work Management

Focusing on the skills to get maintenance and reliability work done, including: planning and scheduling, quality assurance and store inventory management.

## CMRP CERTIFICATION PROCESS

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application process</b>         | Applications should be completed online at the SMRP Online Services Portal.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Examination Details</b>         | <ul style="list-style-type: none"> <li>• The Examination is conducted online.</li> <li>• Duration will be 150 minutes.</li> <li>• 110 MCQs / 2 Parts</li> <li>• Passing score is 75% in all pillars</li> </ul>                                                                                                                                                                                                                                                                                                        |
| <b>CMRP Certification Validity</b> | 3 Years Validity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Test Formats</b>                | Computer-Based: The CMRP exams are delivered online via computer-based testing at Pearson VUE testing centers. No matter the location, the exam will be presented the same way. One question at a time will be displayed on the computer screen. Examinees may select an answer using their mouse or keyboard. The examinee will have access to a calculator on the screen, a timer indicating the amount of time left for the exam and a flag icon to mark a question for review throughout the entire exam session. |
| <b>Test Result</b>                 | At the conclusion of the exam, preliminary results shall show onscreen. Candidates may access full results immediately upon exiting the exam by logging into his or her Pearson VUE online profile. The examination score reports shall reflect pass or fail status. Candidates shall be given access to diagnostic, non-numerical information indicating their overall performance for each domain of the exam.                                                                                                      |

## CMRP EXAM PREPARATION TRAINING

Velosi will ensure to provide an in depth understanding about each topic to equip the individual with the knowledge they need to successfully pass the CMRP Examination Certification.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mode of Training</b>                 | <ul style="list-style-type: none"><li>• Face to Face Training (Class Room)</li></ul>                                                                                                                                                                                                                                                                                                                           |
| <b>Course Material</b>                  | <ul style="list-style-type: none"><li>• SMRP Handbook 6<sup>th</sup> edition (PDF copy)</li><li>• Study notes</li><li>• Sample Exam Questions and Answers</li></ul>                                                                                                                                                                                                                                            |
| <b>Number of Participants per Class</b> | <ul style="list-style-type: none"><li>• 10 students per batch.</li><li>• Course Duration of 05 days including practice exam &amp; clarifications.</li><li>• The training schedule is flexible and will be either in the mornings on the weekends and evenings on weekdays as per Velosi's approved training schedule (for online training).</li></ul>                                                          |
| <b>Admission Policy</b>                 | <ul style="list-style-type: none"><li>• The interested participants would register his/her name and other necessary details by submitting an online registration form post reading the Admission Policy thoroughly.</li><li>• An advance payment of 25% should be paid at the time of registration and the balance amount must be settled before the first day of training via online bank transfer.</li></ul> |
| <b>Certification Issuance Policy</b>    | <ul style="list-style-type: none"><li>• The training completion certificate (Digital Copy) will be awarded to participants who satisfactorily completed the training.</li></ul>                                                                                                                                                                                                                                |
| <b>After Training Support</b>           | <ul style="list-style-type: none"><li>• Trainer immediate support and CMRP question assistance within 3 months of completed training.</li></ul>                                                                                                                                                                                                                                                                |



## OTHER COURSES WE OFFER:

- Safety Certification Exam Courses
  - CFPS
  - CIH
  - ASP/CSP
  - CFSP/CFSE
- Oil & Gas/Energy Industry Training
  - Asset Integrity Management
  - Pipeline Integrity Management
  - Wellhead Integrity Management
  - Structural Integrity Management
- Maintenance & Reliability Certification Exam Courses
  - CMRP
  - CMRT
- Firefighting Training
- H2S & BA Training
- First Aid Courses/Training
- HSE Courses/Training
- IOSH/OSHA Certified Courses
- IADC Certified Courses
- ISO Training
- Security and Safety Training
- Environment Protection Training
- Standardized Test Training

## WHY CHOOSE US

- In-Depth Comprehensive Explanation of all Sections.
- Continuous Assessment with Section-wise Practice Tests
- Study Material in the form of PPT, Group Discussions, etc. written in very easily understandable language.
- Technical clarifications at all levels during/after training.
- Practice Tests at the end of the training.
- Providing Real Exam Questions & Answers
- Provides Course Completion Certificate.



# ANNEXURE : CMRP COURSE OUTLINE

The Society for Maintenance & Reliability Professionals (SMRP) has created the Maintenance and Reliability Body of Knowledge. The foundation of the Maintenance and Reliability Body of Knowledge is the five pillars of knowledge: Business and Management, Manufacturing Process Reliability, Equipment Reliability, Organization and Leadership, and Work Management. The Maintenance and Reliability Body of Knowledge was developed by SMRP's Maintenance and Reliability Knowledge Committee using a rigorous development process. The current Maintenance and Reliability Body of Knowledge extends to level 2, the function level. Additional levels are under development and will be published periodically.

## 1. Business and Management

This subject area describes the skills used to translate an organization's business goals into appropriate maintenance and reliability goals that support and contribute to the organization's business results

### 1.1 Create Strategic direction and plan for M&R operations

- Provide vision and direction
- Provide clear and measurable goals

### 1.2 Administer Strategic plan

- Develop support
- Obtain approval and resources
- Implement plans

### 1.3 Measure Performance

- Select key performance indicators
- Track and report

### 1.4 Manage organizational plan

- Develop change management process
- Communicate benefits

### 1.5 Communicate with stakeholders

- Provide management reports
- Inform staff
- Coordinate with operations

### 1.6 Manage environmental-health-safety risk

- Support community EHS goals
- Support security goals
- Conform to applicable regulations
- Provide EHS training

## 2. Manufacturing Process Reliability

This subject area relates maintenance and reliability activities to the manufacturing process of the organization to ensure that maintenance and reliability activities improve the manufacturing process.

### 2.1 Understand the applicable processes

- Document process flow
- Understand process parameters
- Understand quality specifications

### 2.2 Apply process improvement techniques

- Identify production losses
- Establish continuous improvement process

### 2.3 Manage effects of change to processes and equipment

- Establish change protocol
- Update documentation
- Update procedures

### 2.4 Maintain processes per applicable standards and regulations

- Understand industry standards
- Understand regulatory requirements
- Ensure compliance



### 3. Equipment Reliability

This subject area describes two kinds of activities that apply to the equipment and processes for which the maintenance and reliability professional is accountable. First, are those activities used to assess the current capabilities of the equipment and processes in terms of their reliability, availability, maintainability, and criticality. Second, are the activities used to select and apply the most appropriate maintenance practices, so that the equipment and processes continue to deliver their intended capabilities in the safest and most cost-effective manner.

#### 3.1 Determine equipment reliability expectations

- Identify reliability goals
- Identify process expectations

#### 3.2 Evaluate equipment reliability and identify improvement opportunities

- Measure and track performance
- Determine best-demonstrated performance
- Analyze gaps

#### 3.3 Establish a strategic plan to assure reliability of existing equipment

- Identify appropriate analysis techniques
- Develop maintenance strategy and tactics

#### 3.4 Establish a strategic plan to assure reliability of new equipment

- Establish reliability specifications
- Establish acceptance criteria
- Obtain complete documentation

#### 3.5 Cost-justify selected plans for implementation

- Conduct cost-benefit analysis
- Communicate benefits
- Obtain approval

#### 3.6 Implement selected plans to assure equipment reliability

- Apply reliability strategies
- Establish organization structure
- Provide resources

#### 3.7 Review reliability of equipment and adjust reliability strategy

- Assess key performance indicators
- Analysis deviations
- Identify relevant best practices
- Implement continuous improvement

### 4. Organization & Leadership

This subject area describes processes for assuring that the maintenance and reliability staff is the most qualified and best assigned to achieve the maintenance and reliability organization goals.

#### 4.1 Determine organizational requirements

- Review strategic plan
- Determine required skills
- Determine required staffing levels

#### 4.2 Analyze organizational capability

- Inventory staff skills
- Determine performance gaps

#### 4.3 Develop the organization structure

- Establish reporting channels
- Determine roles
- Determine responsibilities
- Manage reorganization

#### 4.4 Develop personnel

- Provide training
- Obtain needed expertise
- Delineate career paths

#### 4.5 Lead and manage people

- Develop leadership skills
- Assess performance
- Promote a cooperative work environment
- Facilitate communication

## 5. Work Management

This subject area focuses on the skills used to get the maintenance and reliability work done. It includes planning and scheduling activities, quality assurance of maintenance activities, stores and inventory management.

### 5.1 Identify, validate, and approve work

- Establish work identification processes
- Select and approve viable work

### 5.2 Prioritize work

- Develop formal prioritizing system
- Implement formal prioritizing system

### 5.3 Plan work

- Develop job package
- Including scope and procedures
- Including materials and tools
- Including testing

### 5.4 Schedule work

- Develop scheduling process
- Produce work schedule
- Balance resources
- Monitor backlog
- Manage break-in work
- Coordinate equipment access

### 5.5 Execute work

- Manage labor
- Manage material and services
- Control productivity
- Ensure EHS compliance

### 5.6 Document work

- Create post-work document process
- Record failure events and failure modes

### 5.7 Analyze work and follow-up

- Compare actual work with plan
- Identify variances

### 5.8 Measure work management performance

- Establish performance indicators
- Report schedule compliance and rework

### 5.9 Plan and execute projects

- Define scope
- Estimate project and life cycle costs
- Apply critical path methods
- Track progress
- Coordinate staffing

### 5.10 Use information technologies effectively

- Leverage capabilities of data historian
- Process control systems
- Condition monitoring software
- EAM, CMMS systems functionality

### 5.11 Manage resources and materials

- Control materials inventory
- Manage spares and equipment
- Establish MRO procurement process
- Manage contractors



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