COURSE OVERVIEW RE0017
Maintenance & Reliability Best Practices and CMRP Exam

Course Title
Maintenance & Reliability Best Practices and CMRP Exam

Course Date/Venue
Session 1: February 11-15, 2024/Oryx Meeting Room, Double Tree by Hilton, Doha, Qatar
Session 2: March 03-07, 2024/Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey

Course Reference
RE0017

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

The Certified Maintenance & Reliability Professional (CMRP) program is the #1 leading credentialing program for certifying the knowledge, skills and abilities of maintenance and reliability professionals. The CMRP program is certified by the Society for Maintenance and Reliability Professionals (SMRP).

Examining more than just textbook information, the CMRP is a thorough examination of a broader scope of expertise measured against a universal standard. It was developed to assess professionals' aptitude within the five (5) pillars of the Maintenance and Reliability Body of Knowledge: Business Management, Equipment Reliability, Manufacturing Process Reliability, Organization and Leadership, and Work Management.

Every organization has a process for handling and documenting maintenance issues. Some are as simple and informal as the user calls maintenance to come fix something. Others use high powered computerized maintenance management software (CMMS).

Some organizations use formal planning and scheduling while others have the maintenance personnel plan and schedule their own work. Experience has shown that more informal and less planned and scheduled work is highly inefficient. On the other hand, too much planning, scheduling and documentation can also inefficiently use maintenance resources. The aim is to find the right balance of planning, scheduling and documentation to maximize the use of maintenance resources. In addition, one of the biggest challenges to adopting new processes is gaining acceptance at all levels in the organization. Management of change techniques is essential to a successful program.

This interactive course is designed to provide the participants with the information needed to understand their own maintenance management process as well as make improvements to their processes, so they can more effectively and efficiently use their maintenance resources. The participants will understand basic process development, planning and scheduling concepts and have the tools they need to work within their organization to improve the way they manage maintenance work.

The course includes an e-book entitled "*Maintenance and Reliability Certification Exam Guide*", published by Industrial Press, Inc., which will be given to the participants to help them appreciate the principles presented in the course.

This course shall provide adequate knowledge and skill for the participants to develop a strategy for outstanding maintenance and reliability performance, tools to improve reliability at equipment level and an insight to the latest practices in planning, scheduling and control. This course shall provide maintenance and an in-depth overview of the five pillars of the SMRP Body of Knowledge, along with the award-winning UK Model of Excellence for Maintenance.

Course Objectives

Upon the successful completion of the course, each participant will be able to:-

- Get prepared for the next CMRP exam and have enough knowledge and skills to pass such exam in order to get the CMRP certification from SMRP
- Create strategic direction and plan for maintenance and reliability operations, administer strategic plans and measure performance
- Manage organizational changes, communicate with stakeholders and manage environmental-health-safety risk
- Describe manufacturing process reliability including the applicable processes
- Apply process improvement techniques, manage effects of change to processes and equipment and maintain processes in accordance with applicable standards and regulations
- Determine equipment reliability expectations, evaluate equipment reliability and identify improvement opportunities
- Develop a strategic plan to assure the reliability of existing and new equipment
- Employ selected plans for implementation and assure equipment reliability\
- Review reliability of equipment and adjust reliability strategy

- Determine organizational requirements and analyze organizational capability
- Develop the organization structure and personnel as well as lead and manage people
- Identify, validate, approve, prioritize, plan, schedule, execute and document work in a professional manner
- Analyze work follow-up, measure work management performance and plan and execute projects
- Use information technologies effectively and manage resources and materials

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course covers systematic techniques in maintenance and reliability management to assist maintenance management personnel responsible for delivering maximum reliability and availability of equipment at the lowest possible cost. The course will present techniques designed to improve the effectiveness of maintenance management activities, to ensure that physical assets perform their required functions, operate reliably, and support corporate goals. It is essential for all maintenance and reliability management staff including reliability and mechanical engineers who are directly responsible for the equipment reliability and maintenance. The course is ideal for those experienced maintenance and reliability professionals who are seeking an international professional certification.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- Society for Maintenance & Reliability Professionals (SMRP)

The course instructor is certified by **The Society for Maintenance & Reliability Professionals** (**SMRP**) to deliver and administer its internationally-recognized qualifications and certification programs on Maintenance & Reliability Best Practices. **SMRP** is a nonprofit professional society formed by practitioners to advance the reliability and physical asset management industry and to create leaders in the field. SMRP provides unparalleled value for individual practitioners looking to expand their knowledge and skills in maintenance and reliability and build more business connections with other practitioners.

- The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

- British Accreditation Council (BAC

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Craig Nilsen, CMRP, CRCMP, RCM3, is a **Senior Maintenance & Reliability Engineer** with over **30 years** of extensive experience within the **Oil** & **Gas**, **Refinery** and **Petrochemical** industries. His wide expertise includes **Maintenance Planning & Scheduling**, **Maintenance Planning Process**, **Maintenance Shutdown & Turnaround**, **Maintenance Audit** Best Practices, **Maintenance & Reliability** Management, **Reliability** Engineering, **Maintenance & Reliability** Best Practices, Reliability, Availability & Maintainability (**RAM**), **Root Cause** Analysis, **Maintenance** Process, **Reliability-Centered Maintenance** (**RCM**), **Reliability Engineering Analysis** (**RE**), **Root Cause Analysis** (**RCA**), **Asset Integrity Management** (**AIM**), **Reactive & Proactive** Maintenance, **Maintenance** Process, Work Task Prioritization, **Condition Monitoring**, **Mechanical Engineering**, Mechanical Manufacturing Engineering, Mechanical Engineering Design, Electro Technology, **Maintenance Planning**, **Spare Parts Planning & Inventory** Management, Computerized Maintenance Management Systems (**CMMS**), **Process Plant Shutdown & Turnaround**, **Maintenance Optimization** & Best Practices, **Reliability Centered Maintenance** Principles & Application, Efficient Shutdowns, Turnaround & Outages, **Process Plant Shutdown**, **Turnaround & Troubleshooting**, **Shutdown & Turnaround** Management, Optimizing Equipment Maintenance & Replacement Decisions, **Maintenance Management & Cost Control**, **Preventive & Predictive** Maintenance, Effective Reliability Maintenance & Superior Maintenance Strategies, **Integrity & Asset** Management, **Total Plant Reliability** Maintenance, **Vibration** Measurement, **Spare Parts & Materials** Management, **Mechanical & Rotating Equipment** Troubleshooting & Maintenance, **Rotating Equipment Reliability** Optimization, **Laser Alignment**, **Thermography**, **Risk Assessment**, Legal Liability, Construction Regulations, **Machine Vibration** Analysis, **Bag Filters** Operation & Troubleshooting, **Blower & Fan**, **Pumps**, **Valves**, **Bearings & Lubrication**, **Mechanical Seals**, **Mechanical Equipment** Maintenance, **Gearboxes**, **Shaft Alignment**, **Rotating Equipment**, **Preventive & Predictive Maintenance**, **Spare** Management and **Network Analysis**.

During his career life, Mr. Nilsen gained his practical and field experience through his various significant positions and dedication as the **Maintenance Engineer**, **Repair Shop Supervisor**, **Maintenance & Reliability Specialist**, **Maintenance Planner/Reliability Specialist**, **Senior Maintenance Planner/Condition Monitoring Specialist**, **Supply Chain Maintenance Planner**, **Technical Advisor**, **Senior Trainer/Lecturer**, **RCM3 Senior Consultant/Practitioner** and **Fitter & Turner** for Algorax (Pty) Limited.

Mr. Nilsen has a **National Higher Diploma** in **Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Maintenance** and **Reliability Professional** (**CMRP**) from the Society of Maintenance & Reliability Professionals (**SMRP**), a **Certified Reliability Centered Management Professional** (**CRCMP**) from the International Organization of RCM Professionals (**IORCMP**), a **Certified Reliability Centered Maintenance 3** (**RCM3**) **Professional** from **Aladon**, **USA** and a **Qualified Fitter & Turner**. Moreover, he is an active member of the Society of Maintenance and Reliability Professionals (**SMRP**) and the South African Asset Management Association (**SAMA**). He has further delivered numerous trainings, courses, seminars, workshops and conferences internationally.

Course Fee

Doha	**US$ 6,500** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	**US$ 6,500** per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

In addition to the Course Manual, participants will receive an e-book "*Maintenance & Reliability Certification Exam Guide*", published by Industrial Press, Inc.

Exam Fee

US$ 625 per Delegate + **VAT**.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Pillar 1 – Business & Management*** *Create Strategic Direction & Plan for Maintenance & Reliability Operations (Provide Vision & Direction, Provide Clear & Measurable Goals) ● Administer Strategic Plan (Develop Support, Obtain Approval & Resources, Implement Plans)*
0930 – 0945	*Break*
0945 – 1100	***Pillar 1 – Business & Management (cont'd)*** *Measure Performance (Select Key Performance Indicators, Track & Report) ● Manage Organizational Plan (Develop Change Management Process, Communicate Benefits)*
1100 - 1230	***Pillar 1 – Business & Management (cont'd)*** *Communicate with Stakeholders (Provide Management Reports, Inform Staff, Coordinate with Operations)*
1230 – 1245	*Break*
1245 – 1330	***Pillar 1 – Business & Management (cont'd)*** *Manage Environmental-Health-Safety Risk (Support Community EHS Goals, Support Security Goals, Conform to Applicable Regulations, Provide EHS Training)*
1330 – 1420	***Quiz***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	*Review of Day 1*
0830 – 0930	***Pillar 2 – Manufacturing Process Reliability*** *Understand the Applicable Processes (Document Process Flow, Understand Process Parameters, Understand Quality Specifications)*
0930 – 0945	*Break*
0945 – 1100	***Pillar 2 – Manufacturing Process Reliability (cont'd)*** *Apply Process Improvement Techniques (Identify Production Losses, Establish Continuous Improvement Process)*
1100 - 1230	***Pillar 2 – Manufacturing Process Reliability (cont'd)*** *Manage Effects of Change to Processes & Equipment (Establish Change Protocol, Update Documentation, Update Procedures)*
1230 – 1245	*Break*
1245 – 1330	***Pillar 2 – Manufacturing Process Reliability (cont'd)*** *Maintain Processes per Applicable Standards & Regulations (Understand Industry Standards, Understand Regulatory Requirements, Ensure Compliance)*
1330 – 1420	***Quiz***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	*Review of Day 2*
0830 – 0930	***Pillar 3 – Equipment Reliability*** *Determine Equipment Reliability Expectations (Identify Reliability Goals, Identify Process Expectations) ● Evaluate Equipment Reliability & Identify Improvement Opportunities (Measure & Track Performance, Determine Best-Demonstrated Performance, Analyze Gaps)*
0930 – 0945	*Break*
0945 – 1100	***Pillar 3 – Equipment Reliability (cont'd)*** *Establish a Strategic Plan to Assure Reliability of Existing Equipment (Identify Appropriate Analysis Techniques, Develop Maintenance Strategy & Tactics) ● Establish a Strategic Plan to Assure Reliability of New Equipment (Establish Reliability Specifications, Establish Acceptance Criteria, Obtain Complete Documentation)*
1100 - 1230	***Pillar 3 – Equipment Reliability (cont'd)*** *Cost-Justify Selected Plans for Implementation (Conduct Cost-Benefit Analysis, Communicate Benefits, Obtain Approval) ● Implement Selected Plans to Assure Equipment Reliability (Apply Reliability Strategies, Establish Organization Structure, Provide Resources)*
1230 – 1245	*Break*
1245 – 1330	***Pillar 3 – Equipment Reliability (cont'd)*** *Review Reliability of Equipment & Adjust Reliability Strategy (Assess Key Performance Indicators, Analysis Deviations, Identify Relevant Best Practices, Implement Continuous Improvement)*
1330 – 1420	***Quiz***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	*Review of Day 3*
0830 – 0930	***Pillar 4 – Organization & Leadership*** *Determine Organizational Requirements (Review Strategic Plan, Determine Required Skills, Determine Required Staffing Levels) ● Analyze Organizational Capability (Inventory Staff Skills, Determine Performance Gaps)*
0930 – 0945	*Break*
0945 – 1100	***Pillar 4 – Organization & Leadership (cont'd)*** *Develop the Organizational Structure (Establish Reporting Channels, Determine Roles, Determine Responsibilities, Manage Reorganization)*
1100 - 1230	***Pillar 4 – Organization & Leadership (cont'd)*** *Develop Personnel (Provide Training, Obtain Needed Expertise, Delineate Career Paths)*
1230 – 1245	*Break*
1245 – 1330	***Pillar 4 – Organization & Leadership (cont'd)*** *Lead & Manage People (Develop Leadership Skills, Assess Performance, Promote a Cooperative Work Environment, Facilitate Communication)*
1330 – 1420	***Quiz***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	*Review of Day 4*
0830 – 0930	***Pillar 5 - Work Management*** *Identify, Validate & Approve Work (Establish Work Identification Processes, Select & Approve Viable Work) ● Prioritize Work (Develop Formal Prioritizing System, Implement Formal Prioritizing System) ● Plan Work (Develop Job Package, Including Scope & Procedures, Including Materials & Tools, Including Testing) ● Schedule Work (Develop Scheduling Process, Produce Work Schedule, Balance Resources, Monitor Backlog, Manage Break-in Work, Coordinate Equipment Access)*
0930 – 0945	*Break*
0945 – 1130	***Pillar 5 - Work Management (cont'd)*** *Execute Work (Manage Labor, Manage Material & Services, Control Productivity, Ensure EHS Compliance) ● Document Work (Create Post-Work Document Process, Record Failure Events & Failure Modes) ● Analyze Work & Follow-Up (Compare Actual Work with Plan, Identify Variances) ● Measure Work Management Performance (Establish Performance Indicators, Report Schedule Compliance & Rework) ●*
1130 – 1145	*Break*
1145 – 1345	***Pillar 5 - Work Management (cont'd)*** *Plan & Execute Projects (Define Scope, Estimate Project & Life Cycle Costs, Apply Critical Path Methods, Track Progress, Coordinate Staffing) ● Use Information Technologies Effectively (Leverage Capabilities of Data Historian, Process Control Systems, Condition Monitoring Software, EAM, CMMS Systems Functionality) ● Manage Resources & Materials (Control Materials Inventory, Manage Spares & Equipment, Establish MRO Procurement Process, Manage Contractors)*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

MOCK Exam

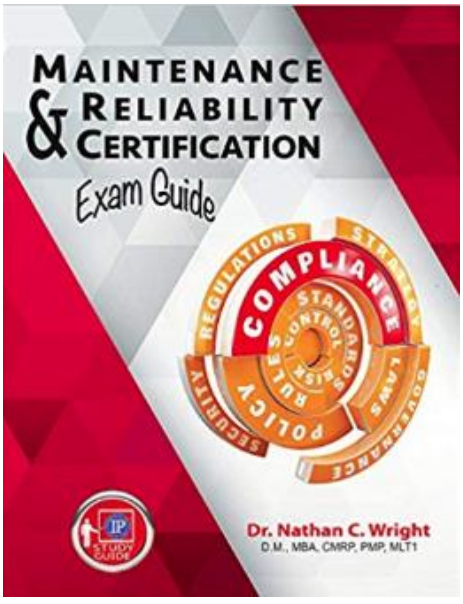
Upon the completion of the course, participants have to sit for a MOCK Examination similar to the exam of the Certification Body through Haward's Portal. Each participant will be given a username and password to log in Haward's Portal for the MOCK exam during the 7 days following the course completion. Each participant has only one trial for the MOCK exam within this 7-day examination window. Hence, you have to prepare yourself very well before starting your MOCK exam as this exam is a simulation to the one of the Certification Body.

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Book(s)

As part of the course kit, the following e-book will be given to all participants:



Title : Maintenance & Reliability Certification Exam Guide
ISBN : 9780831136239
Author : Dr. Nathan C. Wright
Publisher : Industrial Press, Inc.

Course Coordinator

Jaryl Castillo, Tel: +974 4423 1327, Email: jaryl@haward.org