COURSE OVERVIEW RE0205
Modern Maintenance Planning, Scheduling & Work Control

Course Title
Modern Maintenance Planning, Scheduling & Work Control

Course Date/Venue
August 24-28-2025/TBA Meeting Room, Crowne Plaza Al Khobar, an IHG Hotel, Al Khobar, KSA

3.0 CEUs (30 PDHs) AWARD

H-STK© INCLUDED

Course Reference
RE0205

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

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

Maintenance planning, scheduling and work control are the most important elements in modern maintenance management. Maintenance planning and scheduling are also synonymous with control of maintenance. Further, maintenance planning and scheduling of work orders in addition to the control of such work are considered as the hub of a well functioning maintenance organization. In order for maintenance planning and scheduling to work many other systems need to work well. Most importantly equipment inspections through preventive maintenance, technical database such as bill of materials, work order history, and standard job plans. Maintenance spare part stores have to function well, see the above illustration picture.

In a world where sustainable cost-effectiveness and productivity is paramount, your focus is on increasing company revenue by enhancing the performance of your physical assets. Are you up to the challenge? Maintenance Management and plays a critical part within Physical Asset Management. By understanding the fundamental processes behind this strategy you will be able to identify the essential responsibilities you need to undertake in order to initiate a Maintenance Planning, Scheduling and Control program. But Maintenance Planning and Scheduling is not effective unless a strong reliability culture exists and reliability principles are understood and applied.

This course is designed to assist maintenance team 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. The sessions will focus on the modern methods and techniques on the most critical aspects of maintenance management such as organizing maintenance resource, selecting the right maintenance work, analyzing failures, setting and conducting a maintenance plan, planning spare parts, estimating and controlling maintenance costs, computerizing maintenance planning and measurement operations. The delegate will also be introduced to reliability tools and the effect human reliability has on plant availability.

Course Objectives

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

- Get certified as a *"Professional Maintenance Planner"*
- Apply the bottom-line benefits of maintenance planning, scheduling and work control as the core business process
- Perform the critical steps in the identification of necessary maintenance work
- Develop a proactive maintenance planning system to reduce costs, downtime and backlogs
- Achieve streamlined maintenance processes by developing an effective planning program
- Analyze work requests using a risk-based approach so only necessary work is performed
- Apply proven performance measurement tools tailored to your maintenance conditions in order to guarantee the successful execution of maintenance work
- Manage scheduling and coordination as well as develop an accurate and reliable maintenance history through tracing and analyzing maintenance
- Improve turnaround performance by applying proven best practices
- Utilize best practice performance management in order to control your Maintenance work process
- Identify the various support elements as well as employ proper work planning, scheduling and work control
- Effectively decrease downtime by coordinating and streamlining your maintenance planning, scheduling and control process

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 planning, scheduling and work control to assist maintenance team responsible for delivering maximum reliability and availability of equipment at the lowest possible cost. It is intended for plant maintenance engineers, planning engineers, maintenance planners and maintenance coordinators.

To maximize the benefits of the course, delegates should be prepared to actively participate in the course and bring examples of standard work plans, a list of plant performance metrics, the work priority system in-place, and any other planning or scheduling material they would like to review and discuss.

Exam Eligibility & Structure

Exam candidates shall have the following minimum pre-requisites:-

Category (1):	Holders of a 5-year Engineering Degree. No experience required
or,	
Category (2):	Holders of a 2-3 years Engineering Diploma with minimum 5 years of experience in Maintenance or Project departments
or,	
Category (3):	Holders of a High School Certificate with minimum 10 years of experience in Maintenance or Project departments in which 5 years experience in Planning section

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.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

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

Course Certificate(s)

(1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Successful candidate will be certified as a "*Professional Maintenance Planner*". Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants: -

(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-24

HTME No. 74851

Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
RE0205	Modern Maintenance Planning, Scheduling & Work Control	Nov 10-14, 2024	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Jaryl Castillo
Academic Director

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

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | E-mail: info@haward.org | Website: www.haward.org

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations:

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

- 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.

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. Andrew Ladwig is a **Senior Process & Mechanical Maintenance Engineer** with over **25 years** of extensive experience within the **Oil & Gas**, **Refinery**, **Petrochemical & Power** industries. His expertise widely covers in the areas of **Ammonia Manufacturing & Process Troubleshooting**, **Distillation Towers**, **Crude Oil Distillation**, **Ammonia Storage & Loading** Systems, **Operational Excellence** in **Ammonia Plants**, **Fertilizer Storage** Management (Ammonia & Urea), **Fertilizer Manufacturing** Process Technology, **Sulphur Recovery**, Phenol Recovery & Extraction, **Refining Process & Petroleum Products**, **Refinery Planning & Economics**, **Hydrotreating & Hydro-processing**, **Separators** in **Oil & Gas** Industry, **Gas Testing & Energy** Isolations, **Industrial Liquid Mixing**, **Extractors**, **Fractionation**, **Water Purification**, **Water Transport** & Distribution, **Environmental Emission Control**, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Plant Performance**, **Plant Startup & Shutdown**, **Process Troubleshooting** Techniques and Oil & Gas Operation/Surface Facilities. Further, he is also well-versed in **Rotating Machinery** (**BRM**), **Rotating Equipment** Operation & Troubleshooting, Root Cause Analysis (**RCA**), **Process Plant** Shutdown, Turnaround & Troubleshooting, Planning & Scheduling **Shutdowns & Turnarounds**, Optimizing **Equipment Maintenance** & Replacement Decisions, **Maintenance Planning & Scheduling**, **Material Cataloguing**, Maintenance, Reliability & Asset Management Best Practices, **Storage Tanks Operations** & Measurements, **Tank** Inspection & Maintenance, **Pressure Vessel** Operation, **Flare & Relief** System, **Flaring System** Operation, **PSV** Inspection & Maintenance, **Centrifugal & Reciprocating Compressor**, **Screw Compressor** Troubleshooting, **Heat Exchanger** Overhaul & Testing, **Pipe Stress** Analysis, **Control Valves & Actuators**, **Vent & Relief System**, **Centrifugal & Reciprocating Pump** Installation & Repair, **Heat Exchanger** Troubleshooting & Maintenance, **Steam Trapping & Control**, **Control & ESD** System and Detailed Engineering Drawings, Codes & Standards.

During his career life, Mr. Ladwig has gained his practical experience through his various significant positions and dedication as the **Mechanical Engineer**, **Project Engineer**, **Reliability & Maintenance Engineer**, **Maintenance Support Engineer**, **Process Engineer**, **HSE Supervisor**, **Warehouse Manager**, **Quality Manager**, **Business Analyst**, **Senior Process Controller**, **Process Controller**, **Safety Officer**, **Mechanical Technician**, **Senior Lecturer** and **Senior Consultant/Trainer** for various companies such as the Sasol Ltd., Sasol Wax, Sasol Synfuels, just to name a few.

Mr. Ladwig has a **Bachelor's** degree in **Chemical Engineering** and a **Diploma** in **Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and has delivered various trainings, workshops, seminars, courses and conferences internationally.

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: ***Sunday, 24th of August 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Understanding Maintenance & Reliability*** *Understanding Maintenance ● Understanding Reliability ● Maintenance Cost-Facts & Figures ● Maintenance & Profitability*
0930 – 0945	*Break*
0945 – 1015	***Understanding Maintenance & Reliability (cont'd)*** *Maintenance Development Over Time ● Maintenance Policies ● Maintenance & Reliability Best Practices*
1015 – 1145	***Equipment Failure Process & Causes*** *What is a Failure? ● What is a Failure Mode? (FM) ● What is a Failure Mechanism? ● The P-F Curve Concept ● How Failures Appear? ● Equipment Failure Patterns ● Fundamental Causes of Failures*
1145 – 1215	***Equipment Criticality Assessment*** *What is Equipment Criticality Assessment? ● Why Do You Need ECA? ● What Makes an Equipment Critical?*
1215 – 1230	*Break*
1230 – 1330	***Equipment Criticality Assessment (cont'd)*** *The Importance of Equipment Criticality ● ECA Methodology ● ECA Process*
1330 – 1420	***Maintenance Planning & Scheduling (MPS)*** *MPS – Introduction ● MPS – Objectives ● Maintenance Planning & Scheduling ● MPS – Benefits ● Maintenance Planning – Definition ● The Role of Maintenance Planning ● The Practical Result of Planning ● How Many Planners? ● How to Choose a Planner? ● Where Planning Fits into Maintenance ● The Planner Responsibilities*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 25th of August 2025***

0730 – 0930	***Maintenance Planning & Scheduling (MPS) (cont'd)*** *What is Scheduling? ● Scheduling ● Scheduling Pros ● Scheduling Issues ● Scheduling Considerations ● Annual Work Schedule ● Weekly Planning Schedule ● Daily Work Schedules ● Work Execution Package ● Maintenance Work Process Flow ● Maintenance Events – PMs ● Breakdowns ● Corrective Work*
0930 – 0945	*Break*
1100 – 1150	***Maintenance Planning & Scheduling (MPS) (cont'd)*** *Risk Assessment Needed to Establish Need & Performance Priority ● Poor Prioritization Causes ● Prioritization System Considerations ● Equipment Criticality ● Task Effect ● Priority Matrix When the Work Should Be Done ● Another Approach for Assessing Risk & the Need to Perform Work ● Probability Considerations ● Consequence Considerations, What is the Consequence Should the Event Occur? ● Example Work Selection Matrix ● Another Approach ● Work Selection Summary*

1150 – 1215	***Maintenance Planning Process*** *Maintenance Planning & Scheduling ● The Planning Process Step by Step ● The Planning Process ● Concepts for Planning Different Types of Jobs ● The Scheduling Process*
1215 – 1230	*Break*
1230 – 1420	***Maintenance Planning Process (cont'd)*** *Scheduling Techniques ● Scheduling Pros ● Scheduling Issues ● Scheduling Considerations ● Annual Work Schedule*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3: ***Tuesday, 26th of August 2025***

0730 – 0930	***Maintenance Planning Process (cont'd)*** *Weekly Planning Schedule ● Daily Work Schedules ● Work Execution Package ● MPS Process "Work Execution & Close Out" ● Maintenance Planning & Scheduling*
0930 – 0945	*Break*
0945 – 1100	***Maintenance Planning Process (cont'd)*** *Execution ● Close-out ● Calculating Craft Performance ● Craft Service Quality ● MPS Process "Analyze"*
1100 – 1215	***Maintenance Planning Process (cont'd)*** *MPS – Supporting Systems ● Typical KPIs – Planning ● Performance Indicator Characteristics & Requirements ● Performance Parameter Hierarchy ● Business Results Indicators Typically Solomon Indicators*
1215 – 1230	*Break*
1230 – 1420	***Maintenance Planning Process (cont'd)*** *Refining Business Results Indicators Solomon – Reliability ● Refining Business Results Indicators Solomon – Maintenance ● Work Management KPIs ● Maintenance Effectiveness Metrics ● Equipment Specific Indicators*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4: ***Wednesday, 27th of August 2025***

0730 – 0845	***Maintenance Planning Process (cont'd)*** *Pump MTBF Targets ● Work Force Utilization Metrics ● Maintenance Backlog ● Maintenance Work Backlog Management ● MPS Process "Continuous Improvement"*
0845 – 0930	***Proven Turnaround Practices*** *The Nature of Turnaround/Shutdown Project Management ● The Environment in which a Turnaround/Shutdown Takes Place ● Turnaround/Shutdown Success Factors ● More Success Factors ● Similar Planning Approach to Projects ● Elements of a Turnaround/Shutdown ● Turnaround/Shutdown Toolkit ● The Work Breakdown Structure (WBS) & the Organization Breakdown Structure (OBS) ● Identifying the Work ● General Shutdown/Turnaround Checklist ● Planning a Plan ● Milestone Plan ● Milestone Chart ● Work Scope*
0930 – 0945	*Break*

0945 – 1100	***Proven Turnaround Practices (cont'd)*** *Budgets & Cost Control ● Projects ● Materials ● Process Operations ● Pre-Shutdown/Pre-Turnaround Reviews ● Safety ● Typical Safety Questions that should be Asked ● Inspection ● Contracting ● Quality: What is Required? ● Quality Control Plan (QCP) ● Quality Control Plan (QCP) Inspection Report ● Quality Control Sheet ● Risk Management ● Shutdown/Turnaround Practices Discussion*
1100 – 1215	***Spare Parts Planning & Inventory Management*** *Spare Parts – Introduction ● Why Do We Hold Spares? ● Spare Parts Inventory – Introduction ● Inventory Control – Effect on Maintenance ● Inventory – Components ● Spare Parts Inventory – Cost ● Cost of the Spare Part ● Cost of the Spare Part Ordering ● Cost of Storage*
1215 – 1230	*Break*
1230 – 1420	***Spare Parts Planning & Inventory Management (cont'd)*** *Cost of Stock Out ● Spare Parts Inventory – Analysis ● FSN Analysis ● SDE Analysis ● Inventory Reorder Point ● Inventory Economic Order Quantity (IEOQ) ● Economic Order Quantity (EOQ) ● Tips to Improve Spare Parts Management ● Spare Parts Inventory Management*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

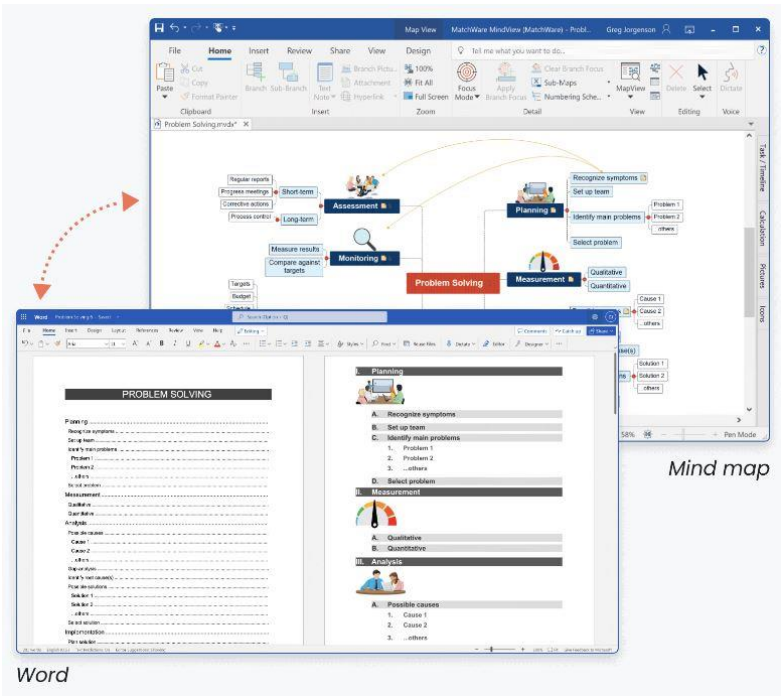
Day 5: ***Thursday, 28th of August 2025***

0730 – 0930	***Spare Parts Planning & Inventory Management (cont'd)*** *Measuring Performance – Storeroom Metrics ● Inventory Management – Case Study ● Inventory Management ● Spares Management (1) – Fast Moving Spares ● Spares Management (2) – Slow Moving Spares ● Spares Ranking ● Inventory Optimization – Best Practice ● Inventory Cost Saving ● Inventory Cost*
0930 – 0945	*Break*
0945 – 1215	***Computerized Maintenance Management Systems (CMMS)*** *CMMS – Introduction ● CMMS – What Returns can be Expected? ● What Should CMMS Do?*
1215 – 1230	*Break*
1230 – 1300	***Computerized Maintenance Management Systems (CMMS) (cont'd)*** *CMMS – Basic Functions ● CMMS - ROI*
1300 – 1315	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1315 – 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the "MS Project" and "Mindview Software".

Microsoft Office Project
Enterprise Project Management Solution



Mindview Software

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org