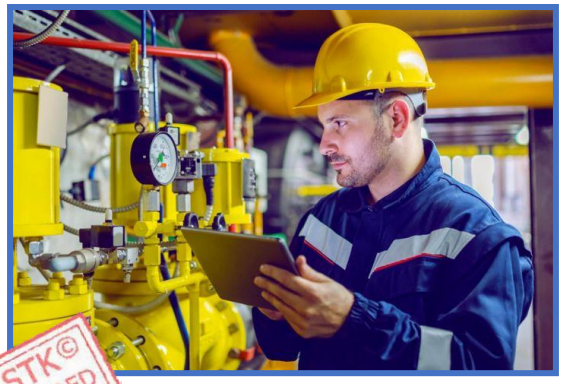
COURSE OVERVIEW RE0992
Modern Maintenance Planning, Scheduling & Work Control



Course Title
Modern Maintenance Planning, Scheduling & Work Control

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

Course Reference
RE0992

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.

This course is designed to provide participants with a detailed and up-to-date overview of Modern Maintenance Planning, Scheduling & Work Control. It covers the maintenance management, maintenance strategies and classifications; the role of planning and scheduling in asset management; the asset lifecycle and maintenance planning integration and work identification and prioritization methods; the organizational structure and roles in maintenance, maintenance work order system, job scoping and work package development; the task time estimating techniques, materials planning and inventory coordination; and planning preventive and predictive maintenance tasks.

During this interactive course, participants will learn the safety considerations in maintenance work planning, maintenance scheduling and creating effective weekly maintenance schedules; managing maintenance backlogs, using CMMS for scheduling and control and shutdown, turnaround and outage (STO) planning; the critical path method (CPM) and Gantt charts and maintenance work execution best practices; the work control and supervision essentials, coordinate with operations and production and maintenance performance indicators (KPIs); the continuous improvement in maintenance, auditing and benchmarking maintenance performance and reliability-centered maintenance (RCM) concepts; the risk-based maintenance planning and planning for digital maintenance systems; and the root cause analysis in maintenance failures.

Course Objectives

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

- Apply and gain an in-depth knowledge on modern maintenance planning, scheduling and work control
- Carryout maintenance management and maintenance strategies and classifications and discuss the role of planning and scheduling in asset management
- Illustrate asset lifecycle and maintenance planning integration including work identification and prioritization methods
- Recognize organizational structure and roles in maintenance and apply maintenance work order system, job scoping and work package development
- Employ task time estimating techniques, materials planning and inventory coordination and planning preventive and predictive maintenance tasks
- Apply safety considerations in maintenance work planning, maintenance scheduling and creating effective weekly maintenance schedules
- Manage maintenance backlogs, use CMMS for scheduling and control and apply shutdown, turnaround and outage (STO) planning
- Prepare critical path method (CPM) and Gantt charts and apply maintenance work execution best practices
- Recognize work control and supervision essentials, coordinate with operations and production and implement maintenance performance indicators (KPIs)
- Employ continuous improvement in maintenance, auditing and benchmarking maintenance performance and reliability-centered maintenance (RCM) concepts
- Illustrate risk-based maintenance planning, planning for digital maintenance systems and root cause analysis in maintenance failures

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 provides an overview of all significant aspects and considerations of modern maintenance planning, scheduling and work control for maintenance planners and schedulers, maintenance engineers and supervisors, reliability and asset management professionals, operations and production personnel involved in maintenance coordination, CMMS/EAM system users and administrators, maintenance and plant managers, technical support staff involved in planning and resource allocation and anyone responsible for improving maintenance effectiveness and efficiency.

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

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.

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 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.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop 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	***Overview of Maintenance Management*** *Understanding Maintenance in Modern Industry • Objectives of Maintenance • Reactive versus Proactive Maintenance • Key Roles in Maintenance*
0930 – 0945	*Break*
0945 – 1030	***Maintenance Strategies & Classifications*** *Corrective Maintenance • Preventive Maintenance • Predictive Maintenance • Reliability-Centered Maintenance (RCM)*
1030 – 1130	***Role of Planning & Scheduling in Asset Management*** *Purpose of Maintenance Planning • Scheduling versus Planning • Key Performance Indicators (KPIs) • Benefits of Effective Planning*
1130 – 1215	***Asset Lifecycle & Maintenance Planning Integration*** *Lifecycle Phases (Acquisition to Disposal) • Design for Maintainability • Failure Patterns • Role of CMMS in Lifecycle*
1215 – 1230	*Break*
1230 – 1330	***Work Identification & Prioritization Methods*** *Sources of Work Requests • Work Order Classification • Priority Matrix & Risk Assessment • Emergency versus Routine Work*

1330 – 1420	***Organizational Structure & Roles in Maintenance*** *Roles of Planner, Scheduler & Supervisor • Interface with Operations • Maintenance Crew Optimization • Delegation of Responsibilities*
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 One*

Day 2: Monday, 25th of August 2025

0730 – 0830	***Maintenance Work Order System*** *Work Request Workflow • Work Order Lifecycle • Approval & Authorization • Work Order Coding*
0830 - 0930	***Job Scoping & Work Package Development*** *Understanding the Job Scope • Developing Detailed Work Packages • Parts, Tools & Manpower Requirements • Permit Requirements*
0930 – 0945	*Break*
0945 – 1100	***Task Time Estimating Techniques*** *Historical Data Use • Standard Job Plans • Estimating Man-Hours • Tools for Accurate Estimation*
1100 – 1215	***Materials Planning & Inventory Coordination*** *Bill of Materials (BOM) • Spares Availability Check • Inventory Optimization • Coordination with Procurement*
1215 – 1230	*Break*
1230 – 1330	***Planning Preventive & Predictive Maintenance Tasks*** *PM Task Libraries • Condition-Based Monitoring Plans • Trigger Points for Scheduling • Trend Analysis & Monitoring*
1330 – 1420	***Safety Considerations in Maintenance Work Planning*** *Hazard Identification in Jobs • Integration with PTW Systems • Job Hazard Analysis (JHA) • LOTO & Confined Space Entry*
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 – 0830	***Fundamentals of Maintenance Scheduling*** *What is a Schedule • Types of Schedules (Daily, Weekly, Shutdown) • Scheduling Horizon • Lead Time Management*
0830 – 0930	***Creating Effective Weekly Maintenance Schedules*** *Developing Weekly Plans • Coordination with Production • Use of CMMS/Gantt Charts • Scheduling Meetings*
0930 – 0945	*Break*
0945 – 1100	***Managing Maintenance Backlogs*** *Types of Backlogs (Workable, Planning, Scheduling) • Acceptable Backlog Levels • Prioritization Techniques • Reporting Tools*
1100 – 1215	***Use of CMMS for Scheduling & Control*** *Schedule Entry in CMMS • Calendar Views • Task Assignment • Notifications & Alerts*
1215 – 1230	*Break*

1230 – 1330	***Shutdown, Turnaround & Outage (STO) Planning*** *STO Objectives & Planning Phases • Critical Path Scheduling • Resource Mobilization • Post-Execution Review*
1330 – 1420	***Critical Path Method (CPM) & Gantt Charts*** *Principles of CPM • Float Calculation • Dependency Logic • Tools for CPM (MS Project, Primavera)*
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 – 0830	***Maintenance Work Execution Best Practices*** *Field Readiness • Job Kick-Off & Briefings • Monitoring Work Progress • Documentation & Feedback*
0830 – 0930	***Work Control & Supervision Essentials*** *Daily Control Tools • Managing Delays & Interruptions • Field Supervision Techniques • Quality of Execution*
0930 – 0945	*Break*
0945 – 1100	***Coordination with Operations & Production*** *Joint Planning Process • Operations' Role in Maintenance Windows • Communication Protocols • Conflict Resolution*
1100 – 1215	***Maintenance Performance Indicators (KPIs)*** *Mean Time Between Failures (MTBF) • Mean Time To Repair (MTTR) • Schedule Compliance • Wrench Time*
1215 – 1230	*Break*
1230 – 1330	***Continuous Improvement in Maintenance*** *Root Cause Analysis (RCA) • Defect Elimination • Lessons Learned from Failures • Kaizen & TPM Integration*
1330 – 1420	***Auditing & Benchmarking Maintenance Performance*** *Internal Audit Checklists • Benchmarking against Industry Standards • Maintenance Maturity Models • Action Plan Development*
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 – 0830	***Reliability-Centered Maintenance (RCM) Concepts*** *RCM Overview • Failure Modes & Effects Analysis (FMEA) • Criticality Analysis • RCM Decision Logic*
0830 – 0930	***Risk-Based Maintenance Planning*** *Risk Matrix for Prioritization • Asset Criticality Ranking • Condition Monitoring Triggers • Maintenance Deferral Assessment*
0930 – 0945	*Break*
0945 – 1100	***Planning for Digital Maintenance Systems*** *IoT Integration • Digital Workflows • Real-Time Monitoring Systems • Mobile Maintenance Tools*

1100 – 1215	***Root Cause Analysis in Maintenance Failures*** *Basic RCA Tools (5 Whys, Fishbone) • Chronic Failure Elimination • Role of Data Collection • Follow-up Actions*
1215 – 1230	*Break*
1230 – 1300	***Training, Competency & Skill Development*** *Maintenance Technician Skills Matrix • Training Needs Assessment • Competency Evaluation • Upskilling Strategies*
1300 – 1345	***Final Group Exercise & Action Plan Development*** *Integrated Planning & Scheduling Case Study • Developing a Maintenance Plan • Group Presentations*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about t Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
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", "Mindview Software", "iLearnVibration" "MTBF Calculator" and "ManWinWin Express CMMS Software".

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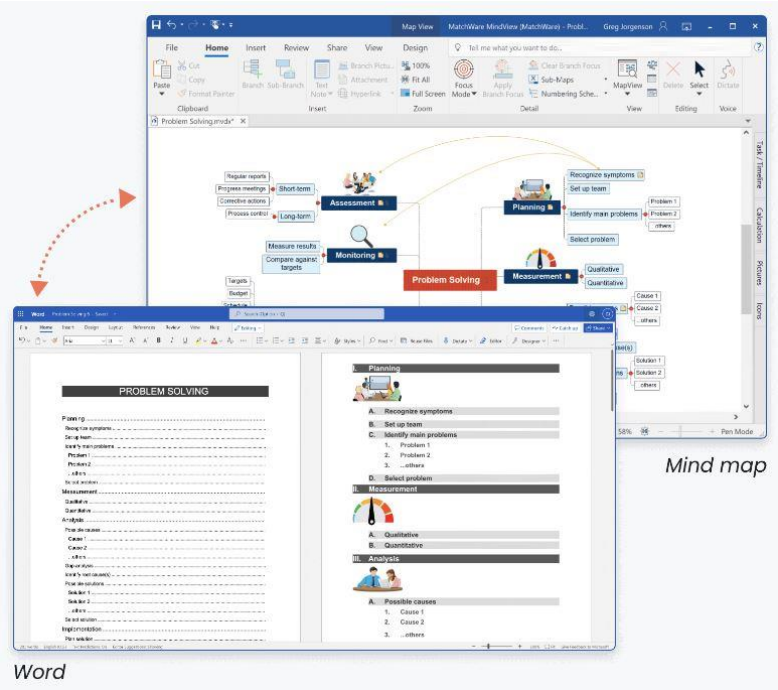
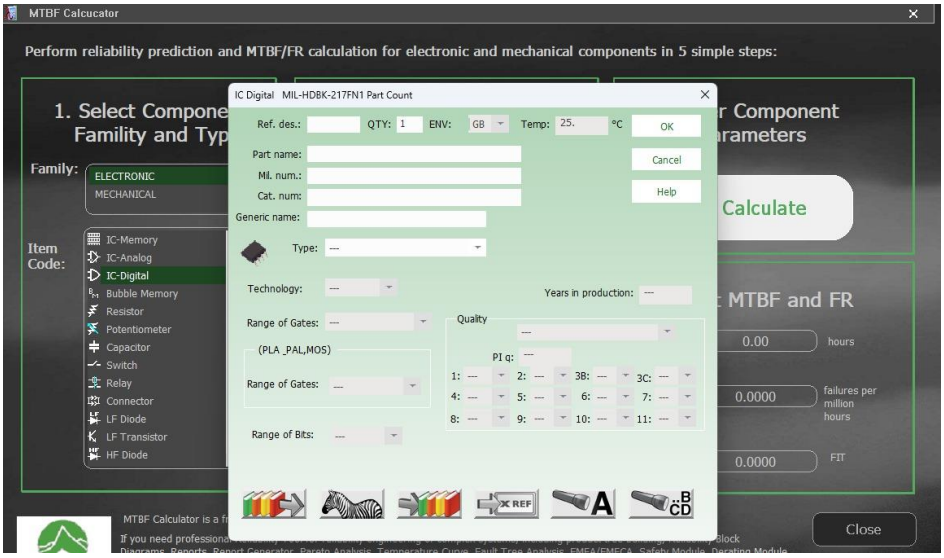
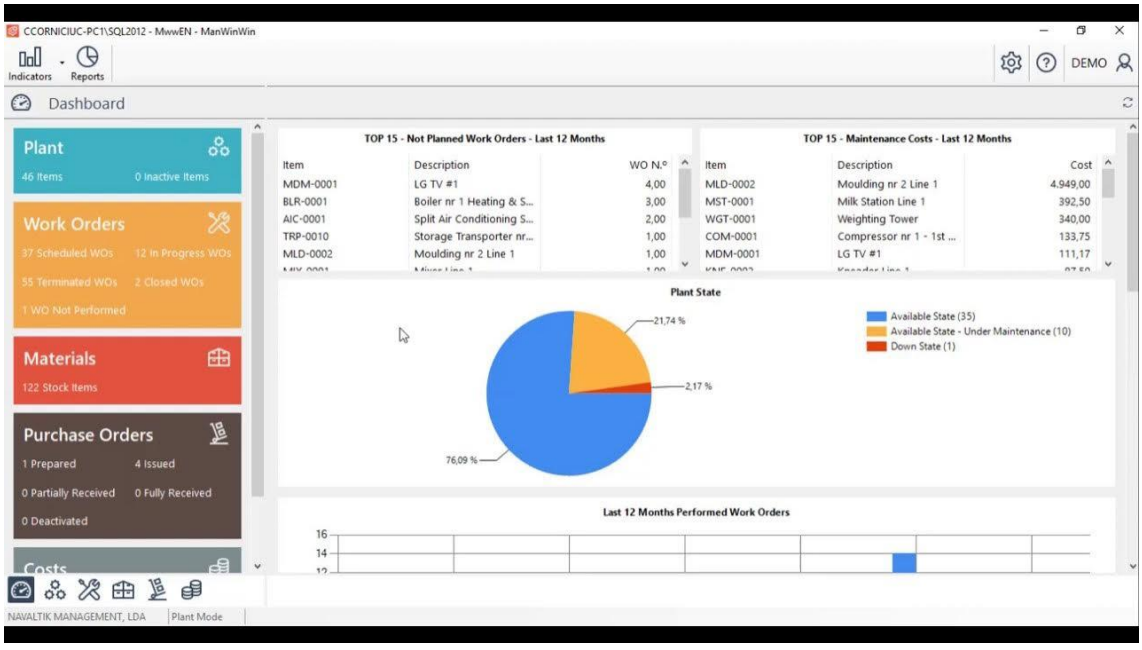


Mindview Software

iLearnVibration



MTBF Calculator



ManWinWin Express CMMS Software

Course Coordinator
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