

COURSE OVERVIEW RE0215
Maintenance Work Estimation Skills

Course Title

Maintenance Work Estimation Skills

Course Date/Venue

October 07-11, 2024/ Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference

RE0215

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 maintenance planning, estimating and scheduling. It covers the concepts, tools and techniques for estimating with focus upon using the ACE Team Benchmarking process; how planning and scheduling can be the cornerstone for a broader approach to reliability and maintenance improvement within their organization; managing and improving maintenance processes and craft productivity; and improving accuracy and quality of estimating.



During this interactive course, participants will learn how to develop more effective repair methods and standard job plans for benchmarking; develop and implement maintenance excellence index; validate results of maintenance investments; and improve the use of an existing or future CMMS.

Course Objectives

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

- Apply systematic techniques on maintenance planning, estimating and scheduling techniques
- Discuss concepts, tools and techniques for estimating with focus upon using the ACE Team Benchmarking process
- Explain how planning and scheduling can be the cornerstone for a broader approach to reliability and maintenance improvement within their organization
- Manage and improve maintenance processes and craft productivity
- Improve accuracy and quality of estimating
- Develop more effective repair methods and standard job plans for benchmarking
- Develop and implement a maintenance excellence index
- Validate results of maintenance investments
- Improve use of an existing or future CMMS

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, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

Who Should Attend

This course covers systematic techniques and methodologies on maintenance planning, estimating and scheduling for maintenance managers, plant managers, routine work managers, operations managers, technical maintenance managers, production managers, engineering managers, team leaders, engineers, planners, superintendents and supervisors.

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)

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: -

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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.

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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. Andrew Ladwig is a **Senior Mechanical & Maintenance Engineer & HSE Consultant** with over **25 years** of extensive experience within the **Oil & Gas, Refinery, Petrochemical & Power** industries. His expertise widely covers in the areas of **Best Practice In Maintenance Management, Maintenance Troubleshooting, Preventive Maintenance & Corrective Maintenance, Maintenance Planning, Scheduling, Management & Work Control**, Certified Maintenance Planner (**CMP**), Certified Planning & Scheduling Professional (**AACE-PSP**), **Maintenance Optimization & Best Practices, Engine Construction & Maintenance, Process Plant Shutdown & Turnaround, Maintenance Auditing & Benchmarking, Machinery Lubrication, Machinery Failure Analysis, Reliability, Availability & Maintainability (RAM), Reliability-Centered Maintenance (RCM), Reliability Engineering Analysis (RE), Root Cause Analysis (RCA), Asset Integrity Management (AIM), Reactive & Proactive Maintenance, Compressors & Turbines Operation, Maintenance & Troubleshooting, Reciprocating & Centrifugal Compressors, Screw Compressor, Compressor Control & Protection, Gas & Steam Turbines, Turbine Operations, Gas Turbine Technology, Centrifugal Pumps, Bearings, Couplings, Screw Compressors & Heat Exchangers Operation, Maintenance, Inspection, Troubleshooting, Lubrication & Shaft Alignment, Gas Turbine Operating & Maintenance, Pressure Safety Relief Valve Repair & Recalibration, PSV/PRV Troubleshooting, Valve Testing & Inspection, Control Valves & Actuators, Boiler Inspection & Maintenance, Boiler Systems, Boiler instrumentation & Controls, Boiler Start-up & Shutdown, Boiler Operation & Steam System Management, Heat Recovery Steam Generating (HRSG), Impulse Tube Installation & Inspection, Pipes & Fittings, Tank Design & Engineering, Tank Shell, Tanks & Tank Farms, Bearings & Lubrication** and **Advanced Machinery Dynamics**. Further, he is also well-versed in **Hazardous Materials & Chemicals Handling, Hazardous Materials (HAZMAT), Hazard Identification & Operability (HAZOP), Professional HAZOP/PHA Leader: Advanced Process Hazard Analysis (PHA) Methods & Leadership (HAZOP, What-if, FMEA), Process Safety Management (PSM), Layer of Protection Analysis (LOPA), Behavioural Based Safety (BBS), Job Safety Analysis (JSA), Permit to Work (PTW), Authorized Gas Tester (AGT), Confined Space Entry & Rescue, Pre-Startup Safety Reviews (PSSR), Safety in Process Plants, Risk Assessment, Risk Management, Emergency Planning, Emergency Response & Crisis Management Operations and Incident Investigation Advanced & HSE Reporting**.

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.

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: Monday 07th of October 2024

0730 - 0745	Registration & Coffee
0745 - 0800	Welcome & Introduction
0800 - 0815	PRE-TEST
0815 - 0930	Building the Foundation Introduction/Overview of MPES & CMMS • Practical Exercise/Discussion: Define your top five priorities for improvement • Teams Assigned for Presentation on Day 4: What is our plan of action to improve your top 5 priorities • The Role of Effective Maintenance Planning, Estimating and Scheduling (MPES) • Today's Maintenance Challenges-Planning is Critical • Continuous Reliability Improvement: MPES is very important
0930 - 1100	Building the Foundation (cont'd) Profit Service & Service-Centered Maintenance: Effective MPES is the foundation • Selling the Significant Benefits of Planning and Scheduling • Ensuring your Maintenance Storeroom Supports the Planning Process • Impact of Materials Management on Planned Maintenance • Practical Exercise: How does your storeroom compare • How Planning and Scheduling Improves Craft Productivity • Practical Exercise: What is the value of craft productivity improvement at LGN?
1100 - 1115	Break
1115 - 1300	Building the Foundation (cont'd) Organizing and Managing a Maintenance Planning and Scheduling Process • Planner/Scheduler Selection and Key Roles Responsibilities • Planner/Scheduler Job Description Examples • Pre-requirements for an effective MPES Process • Backlog Management and Planning for Maintenance Excellence • Balancing Workload with Maintenance Resources • Practical Exercise: Developing Backlogs
1300 - 1315	Break
1315 - 1420	Planning and Estimating Key Steps for an Effective Planning Process • How Much Planning is Enough? • Informational Support-the Maintenance Technical Library •



	Work Breakdown Structures • The Planned Job Package • Work Screening, Job Scoping, Research and Detailed Planning
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2 : Tuesday 08th of October 2024

0730 – 0900	Planning and Estimating (cont'd) Detailed Planning of Materials, Tools and Equipment • Responsibilities of the Materials Management Process • Planner's Role in Project Type Work • Materials Management's Support to Planned Maintenance • Effective Estimating for Achieving Reliable Planning Times
0900 – 0915	Break
0915 – 1100	Planning and Estimating (cont'd) Different Types of Maintenance: "Operational vs. Project" • Different Types of Estimating Techniques • The ACE Team Benchmarking Process

1100 – 1230	Planning and Estimating (cont'd) Practical Exercises: Developing job estimates and spread sheets • Brief Review of Estimating Software
1230 – 1245	Break
1245 – 1420	Effective Scheduling Coordination Required for Successful Scheduling • Scheduling Techniques • The Critical path Method/PERT • Preparing Schedules, Job Loading, and Schedules
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3: Wednesday 09th of October 2024

0730 – 0900	Effective Scheduling (cont'd) Key Guidelines for Completing the Scheduling Process
0900 – 0915	Break
0915 – 1100	Effective Scheduling (cont'd) Measuring Performance of the Planning and Scheduling Function • Measuring the Performance of the Overall Maintenance Operations
1100 – 1230	Focus on Effective Scheduling Scheduling Multiple Projects • Dealing with Estimating Uncertainties (Estimating, Probability and Risk) • MPES Impact on Budgeting, Cost and Progress Control • The Earned Value Analysis Technique
1230 – 1245	Break
1245 – 1420	Focus on Effective Scheduling (cont'd) Linking Performance Measures to Action • Improving the Quality of MPES • Linking Planning and Scheduling to Craft Productivity • Conclusion and Final Review
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4: Thursday 10th of October 2024

0730 – 0900	Maximizing Your CMMS Investment Introduction and Course Objectives • CMMS: A Maintenance Business System for Profit and Customer-Centered Results
0900 – 0915	Break





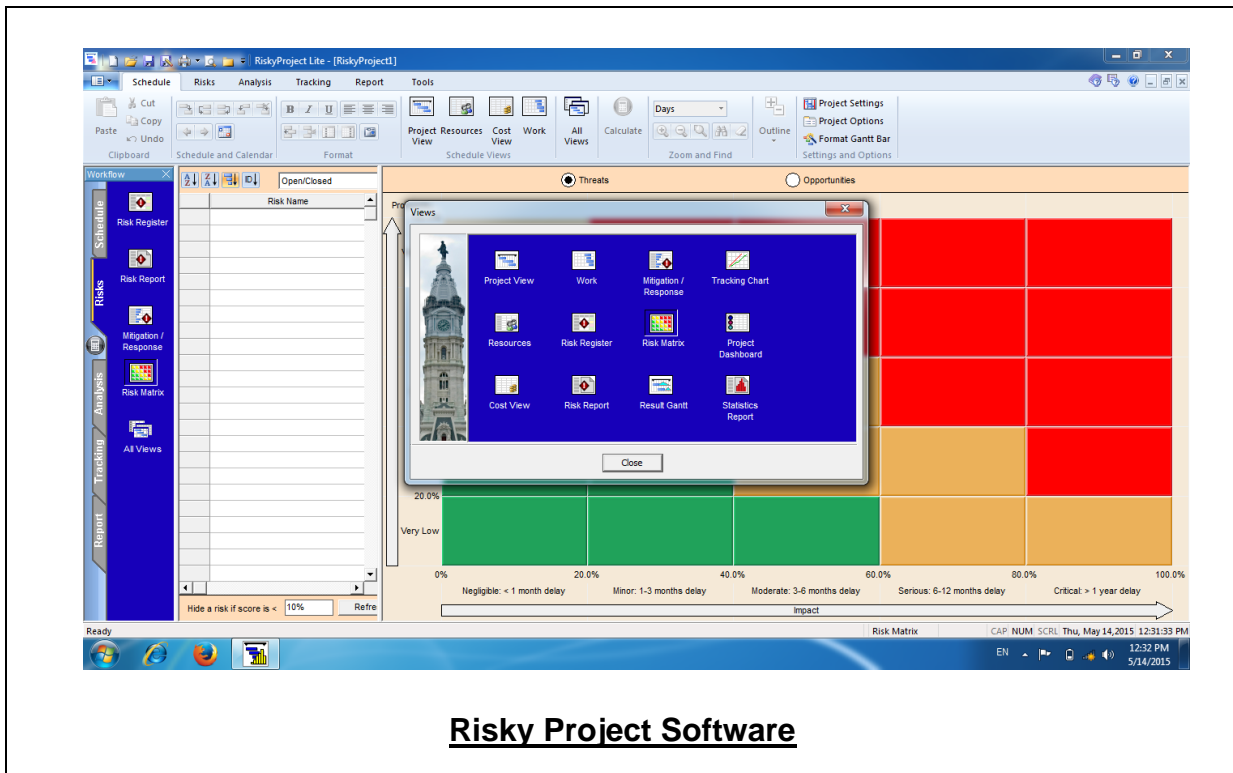
0915 - 1100	Maximizing Your CMMS Investment (cont'd) <i>How to Improve Operations Culture for CMMS Acceptance • Return on CMMS: Show me the money and improved customer service!</i>
1100 - 1230	Maximizing Your CMMS Investment (cont'd) <i>CMMS Success Stories and Case Studies • Practical Exercise: Review of Participant's CMMS Benchmarking System Results</i>
1230 - 1245	Break
1245 - 1420	Maximizing Your CMMS Investment (cont'd) <i>Improving Existing CMMS Databases • Practical Exercise: Review scoreboard, results and define priority of best practice needs</i>
1420 - 1430	Recap
1430	Lunch & End of Day Four

Day 5: Friday 11th of October 2024

0730 - 0900	Measuring Results for Effective Planning and Scheduling <i>How CMMS Can Improve</i>
0900 - 0915	Break
0915 - 1045	Measuring Results for Effective Planning and Scheduling (cont'd) <i>Working Smarter so CMMS Works for You • CMMS Functionality Evaluation: Determining the things your CMMS need to do</i>
1045 - 1200	Measuring Results for Effective Planning and Scheduling (cont'd) <i>Practical Exercise: Developing a plan of action to increase value of your CMMS • Achieving and Validating Results with Your Maintenance Excellence Index</i>
1200 - 1215	Break
1215 - 1330	Measuring Results for Effective Planning and Scheduling (cont'd) <i>Continuous Reliability Improvement: Going Well Beyond TPM & RCM to Improve All Six Maintenance Resources • Team Presentations: Our Plan of Action to Improve Our Top 5 Areas for Improvement</i>
1330 - 1345	Course Summary
1345 - 1400	Course Conclusion
1400 - 1415	POST-TEST
1415 - 1430	Presentation of 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 “Risky Project Software”.



Risky Project Software

Course Coordinator

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