

COURSE OVERVIEW RE0983

Maintenance Repair & Operations (MRO) Materials Spare Parts Inventory Optimization & Cost Reduction

Course Title

Maintenance Repair & Operations (MRO)
Materials Spare Parts Inventory Optimization &
Cost Reduction

Course Date/Venue

June 29-July 03, 2025/Meeting Plus 9, City
Centre Rotana, Doha, Qatar

Course Reference

RE0983

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.

This course is designed to provide participants with a detailed and up-to-date overview of Maintenance Repair and Operations (MRO) Materials Spare Parts Inventory Optimization and Cost Reduction. It covers the MRO and spare parts covering its definitions and scope, types of spare parts and role of MRO in asset reliability and uptime; the spare parts classification and criticality, MRO lifecycle management, failure modes and inventory planning and MRO and maintenance planning interface; the key performance indicators (KPIs) for MRO, inventory management principles, inventory cost categories and cost drivers and inventory optimization techniques; the vendor managed inventory (VMI) and consignment stock, critical spares and insurance spares management; and the inventory rationalization and cleanup.



During this interactive course, participants will learn the spare parts catalogue standardization, material master data management, spare parts numbering and identification and integration with CMMS and ERP systems; the bill of materials (BOM) development and maintenance, digital tools and MRO technology and spare parts procurement strategies; the supplier relationship and evaluation, cost reduction through strategic sourcing and storage and warehousing best practices; the inventory accuracy and physical controls, emergency and breakdown spares handling and linking spare parts to reliability and RCM; the KPI dashboards and continuous improvement, lean maintenance and inventory principles; and the sustainability and green inventory management.



Course Objectives

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

- Apply and gain an in-depth knowledge on maintenance repair and operations (MRO) materials spare parts inventory optimization and cost reduction
- Discuss MRO and spare parts covering its definitions and scope, types of spare parts and role of MRO in asset reliability and uptime
- Recognize spare parts classification and criticality, MRO lifecycle management, failure modes and inventory planning and MRO and maintenance planning interface
- Identify key performance indicators (KPIs) for MRO, inventory management principles, inventory cost categories and cost drivers and inventory optimization techniques
- Explain vendor managed inventory (VMI) and consignment stock, critical spares and insurance spares management and inventory rationalization and cleanup
- Discuss spare parts catalogue standardization, material master data management, spare parts numbering and identification and integration with CMMS and ERP systems
- Identify the bill of materials (BOM) development and maintenance, digital tools and MRO technology and spare parts procurement strategies
- Determine supplier relationship and evaluation, cost reduction through strategic sourcing and storage and warehousing best practices
- Carryout inventory accuracy and physical controls, emergency and breakdown spares handling and linking spare parts to reliability and RCM
- Recognize KPI dashboards and continuous improvement, lean maintenance and inventory principles and sustainability and green inventory management

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 reducing maintenance/MRO inventories for maintenance and project personnel such as project managers, maintenance managers, project engineers, plant engineers, maintenance engineers, senior buyers, purchasing managers, storeroom managers, store supervisors, store men, store keepers, CMMS professionals, maintenance planners, maintenance supervisors, IT professionals, operations managers and manufacturing managers.

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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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.

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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.

Course Fee

US\$ 6,000 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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. Pan Kidis, MBA, BSc, is a **Senior Logistics & Management Consultant** with over **30 years** of extensive experience in **Logistics & Transportation Planning** Methods, **Forecasting Logistics** Demands, Visual Network Model, **Logistics Operations**, **Strategic Transport Planning**, **Transport System**, **Fleet Planning**, Routing & Scheduling, **Transport Cost Concepts & Elements**, Costing Vehicles & Trips, Tariff Fixing, **Supply Chain & Operations** Management, **Logistics & Production Planning**, **Cost Reduction** Techniques, **Inventory** Management, **Business Analysis**, **Risk** Management, **Production** Management, **Warehouse** Management, **Production Planning**, **Material Requirement Planning**, **Budgeting**, Production & Shop Floor Scheduling, **Cost Analysis**, **Database** Design & Implementation, **Business Administration**, **Production Data** Acquisition & Analysis, Industrial **Logistics**, Process Improvement, Team Leadership & Training, Textile Manufacturing, Staff Reduction, **Warehouse** and **Shipping**. Further, he is also well-versed in **Cash Flow** Management, **Decision Making** Techniques, Production Planning & Scheduling, Production & Product Inventory Control, **Inventory** Analysis Tools, **Stock Management** Techniques, Material Handling, Process Improvement & Equipment Selection, **Costing & Budgeting**, Wastewater Treatment Plant Monitoring & Control, Volume Tank Measurements, Data Acquisition and Energy Conservation. He is currently the **Business Analyst** of Diasfalis Ltd. wherein he is responsible in the design of the proposed business model and develop and evaluate new applications.

Mr. Kidis had occupied several significant positions as the **Supply Chain Manager**, **Production Planning & Logistics Manager**, **Purchasing Office Manager**, **Project Manager**, **Assistant Dyeing Manager**, **Production Supervisor**, **Production Coordinator** and Design & Analysis Intern for various international companies such as the Hellenic Fabrics, **AKZO Chemicals Ltd.** and **EKO Refinery** and Greek Navy Force.

Mr. Kidis has a **Master** degree in **Business Administration** from the **University of Kent, UK** and a **Bachelor** degree in **Chemical Engineering** from the **Aristotle University of Thessaloniki, Greece**. Further, he is a **Certified Instructor/Trainer** and has delivered numerous trainings, courses, workshops, seminars and conferences internationally.

Accommodation

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

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: Sunday, 29th of June 2025

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to MRO & Spare Parts Definitions and Scope of MRO Materials • Types of Spare Parts: Capital, Consumables, Rotables • Role of MRO in Asset Reliability and Uptime • MRO versus Production Inventory
0930 – 0945	Break
0945 – 1030	Spare Parts Classification & Criticality ABC/XYZ Analysis for Inventory Segmentation • Critical versus Non-Critical Parts • Functional and Economic Classification • Stocked versus Non-Stocked Parts Criteria
1030 – 1130	MRO Lifecycle Management Spare Part Lifecycle Stages • Part Obsolescence and Technology Changes • New Part Evaluation and Approval Process • End-of-Life Strategies
1130 – 1215	Failure Modes & Inventory Planning Reliability and Failure Modes Link to Spares • Mean Time Between Failures (MTBF) & Mean Time to Repair (MTTR) • Maintenance Strategies (RCM, TPM) and Impact on Spare Demand • Reactive versus Preventive versus Predictive Influence
1215 – 1230	Break
1230 – 1330	MRO & Maintenance Planning Interface Work Order Requirements for Spare Parts • Linking PM Tasks to Spares • Planned versus Unplanned Demand • Synchronizing Shutdowns with Material Readiness



1330 – 1420	Key Performance Indicators (KPIs) for MRO <i>Inventory Turnover Ratio • Service Level/Fill Rate • Stockouts and Emergency Purchases • Inventory Value and Carrying Cost Metrics</i>
1420 – 1430	Recap <i>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</i>
1430	<i>Lunch & End of Day One</i>

Day 2: Monday, 30th of June 2025

0730 – 0830	Inventory Management Principles <i>EOQ (Economic Order Quantity) • Safety Stock and Reorder Point Calculation • Lead Time Variability and Demand Uncertainty • Min-Max and Buffer Stock Strategies</i>
0830 – 0930	Inventory Cost Categories & Cost Drivers <i>Ordering Cost, Holding Cost, Stockout Cost • Obsolescence and Shrinkage • Total Cost of Ownership (TCO) for Spares • Balancing Cost versus Service Level</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Inventory Optimization Techniques <i>Statistical Demand Forecasting • Pareto Analysis and 80/20 Rules • Inventory Simulation Modeling • Optimization Software and Tools</i>
1100 – 1215	Vendor Managed Inventory (VMI) & Consignment Stock <i>Benefits and Risks of VMI • Shared Data and Collaboration Requirements • Contracting and Accountability • Inventory Visibility and Replenishment Triggers</i>
1215 – 1230	<i>Break</i>
1230 – 1330	Critical Spares & Insurance Spares Management <i>Criteria for Critical Spares Identification • Risk-Based Stockholding Decisions • Shared Spares and Pooled Inventory Options • Managing Long Lead and Single-Source Items</i>
1330 – 1420	Inventory Rationalization & Cleanup <i>Duplicate and Obsolete Item Identification • Standardization of Parts and Specifications • BOM (Bill of Materials) Accuracy • Slow-Moving and Non-Moving Items Disposal</i>
1420 – 1430	Recap <i>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</i>
1430	<i>Lunch & End of Day Two</i>

Day 3: Tuesday, 1st of July 2025

0730 – 0830	Spare Parts Catalogue Standardization <i>Naming Conventions and Taxonomy • Class, Type and Attribute-Based Classification • International Standards (UNSPSC, eCl@ss) • Role of Catalogs in Procurement and Maintenance</i>
0830 – 0930	Material Master Data Management <i>Data Governance and Ownership • Master Record Structure (Description, Unit, Manufacturer) • Use of Templates and Validation Rules • Common Data Quality Issues and Cleanup Techniques</i>
0930 – 0945	<i>Break</i>



0945 – 1100	Spare Parts Numbering & Identification <i>Intelligent versus Non-Intelligent Part Numbering • Barcode and RFID Tagging • Cross-Referencing Manufacturer versus Internal Part Numbers • Labeling, Location and Traceability Systems</i>
1100 – 1215	Integration with CMMS & ERP Systems <i>Linking Spare Parts to Equipment and PM Tasks • Material Reservations and Automatic Reordering • Inventory Visibility and Stock Alerts • CMMS-ERP Synchronization Strategies</i>
1215 – 1230	Break
1230 – 1330	Bill of Materials (BOM) Development & Maintenance <i>Equipment Hierarchy and BOM Relevance • Linking Components and Subassemblies • BOM Accuracy versus Inventory Efficiency • Updating BOM After Modifications</i>
1330 – 1420	Digital Tools & MRO Technology <i>MRO Analytics Dashboards • Mobile Inventory Tracking Solutions • IoT in Parts Consumption Monitoring • Use of AI for Predictive Spare Needs</i>
1420 – 1430	Recap <i>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</i>
1430	Lunch & End of Day Three

Day 4: Wednesday, 2nd of July 2025

0730 – 0830	Spare Parts Procurement Strategies <i>Spot Buy versus Contract Purchase • Blanket Orders and Service Agreements • Reorder Triggers and Lot Sizing • Cross-Functional Communication with Purchasing</i>
0830 – 0930	Supplier Relationship & Evaluation <i>Supplier Selection Criteria for MRO Items • Vendor Performance Scorecards • Lead Time Tracking and Performance Review • Supplier Audits and Compliance</i>
0930 – 0945	Break
0945 – 1100	Cost Reduction through Strategic Sourcing <i>Grouping and Bundling of Spare Parts • OEM versus Alternate Vendor Evaluation • Reverse Auctions and E-Procurement • Cost Negotiation and Benchmarking</i>
1100 – 1215	Storage & Warehousing Best Practices <i>Bin Location System and Layout Planning • FIFO/LIFO and Shelf-Life Considerations • Climate Control and Hazard Storage • Kitting and Issuing Practices</i>
1215 – 1230	Break
1230 – 1330	Inventory Accuracy & Physical Controls <i>Cycle Counting versus Physical Inventory • Root Causes of Inventory Inaccuracy • Barcode Scanning and Handheld Devices • Inventory Audits and Reconciliation</i>
1330 – 1420	Emergency & Breakdown Spares Handling <i>Emergency Stock Setup and Control • 24/7 Availability Procedures • Linking Failure History to Emergency Stockholding • Maintenance Override Protocols</i>
1420 – 1430	Recap <i>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</i>
1430	Lunch & End of Day Four

Day 5: Thursday, 3rd of July 2025

0730 – 0830	Linking Spare Parts to Reliability & RCM <i>Equipment Criticality and Spare Parts Strategy • FMEA and Spare Parts Planning • Failure History Analysis to Adjust Stock • Linking RCFA Outcomes to Stock Policies</i>
0830 – 0930	KPI Dashboards & Continuous Improvement <i>Real-Time MRO Performance Dashboards • Visual Management and Storeroom Scorecards • Monthly Review and Optimization Meetings • Root Cause Analysis of Overstock/Understock</i>
0930 – 0945	Break
0945 – 1030	Lean Maintenance & Inventory Principles <i>5S in the Storeroom • Elimination of Waste in Materials Handling • Kanban and Just-in-Time (JIT) Spares • Visual Reorder Systems</i>
1030 – 1230	Sustainability & Green Inventory Management <i>Recycling and Reusing Spare Parts • Environmentally Friendly Materials • Carbon Footprint of Inventory • Circular Economy Strategies for Spare Parts</i>
1230 – 1245	Break
1245 – 1345	Case Studies & Benchmarking <i>Spare Parts Cost Reduction in Petrochemical Plants • Inventory Optimization in Manufacturing • VMI Implementation in Utilities Sector • Global Benchmarking: Best Practices from World-Class Companies</i>
1345 – 1400	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Practical Sessions

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



Course Coordinator

Reem Dergham, Tel: +974 4423 1327, Email: reem@haward.org