Advanced MRO Spare Parts and Inventory Control Training Course



21 - 25 Dec 2026

Cape town

4600 € (Per Person)

Ref: #INM3549_277704

Course Introduction / Overview:

Effective Maintenance, Repair, and Operations (MRO) inventory management is a critical pillar of operational excellence, directly impacting asset reliability, production uptime, and financial performance. This course provides a comprehensive framework for mastering the complexities of MRO spare parts and inventory control. It moves beyond basic stock-keeping to instill a strategic mindset focused on optimizing inventory levels, minimizing carrying costs, and ensuring the right part is available at the right time. Drawing upon principles articulated by experts like Philip Slater in works such as "Smart Inventory Solutions," the curriculum delves into advanced classification, forecasting, and control techniques. Participants will learn to navigate the unique challenges of MRO inventory, such as intermittent demand and obsolescence risk. BIG BEN Training Center has designed this program to be intensely practical, equipping professionals with the tools to transform their storeroom from a cost center into a strategic asset that supports reliability-centered maintenance and overall business objectives, ensuring a seamless and cost-effective operational flow.

Target Audience / This training course is suitable for:

- Maintenance Managers and Supervisors.
- Inventory Planners and Analysts.
- Storeroom and Warehouse Managers.
- Procurement and Sourcing Professionals.
- Reliability and Maintenance Engineers.
- Supply Chain and Logistics Managers.
- Operations Managers.
- CMMS/EAM System Administrators.
- Financial Controllers involved in inventory valuation.

Target Sectors and Industries:

- Manufacturing and Industrial Production.
- Oil and Gas Exploration and Production.
- Power Generation and Utilities.
- Aviation and Aerospace Maintenance.
- Pharmaceuticals and Chemical Processing.
- Mining and Heavy Equipment Operations.
- Transportation and Logistics.
- Facilities Management and Real Estate.
- Governmental and Public Sector Operations.

Target Organizations Departments:

- Maintenance and Engineering.
- Supply Chain Management.
- Procurement and Purchasing.
- Operations and Production.
- Finance and Accounting.
- Logistics and Warehousing.
- Asset Management.
- Information Technology (related to CMMS/ERP systems).

Course Offerings:

By the end of this course, the participants will have able to:

- Develop a robust classification system for MRO spare parts using ABC, VED, and FSN analysis.
- Implement advanced inventory control models to optimize stock levels and reduce costs.
- Master demand forecasting techniques tailored for the erratic nature of MRO spares.
- Design and manage an efficient and secure MRO storeroom for operational excellence.
- Establish key performance indicators (KPIs) to measure and improve inventory performance.
- Formulate strategies for managing critical, slow-moving, and obsolete spare parts.
- Integrate MRO inventory management with CMMS/EAM systems for enhanced control.
- Enhance supplier relationship management for improved MRO procurement outcomes.
- Conduct effective cycle counting and physical inventory audits to ensure data accuracy.
- Justify inventory holding decisions to senior management using financial metrics.

Course Methodology:

This training course from BIG BEN Training Center employs a dynamic and interactive learning methodology designed to maximize knowledge retention and practical application. The approach is centered on a blend of expert-led instruction, real-world case study analysis, and collaborative group exercises. Participants will engage in workshops that simulate common MRO inventory challenges, allowing them to apply theoretical concepts in a controlled, risk-free environment. The facilitator will guide interactive discussions, encouraging the sharing of experiences and best practices among attendees from diverse industries. Practical sessions will focus on developing inventory policies, calculating safety stock, and creating performance dashboards. Emphasis is placed on a hands-on approach, where participants work with sample data to perform inventory analysis and make strategic decisions. Continuous feedback is provided throughout the sessions to ensure concepts are thoroughly understood. This immersive methodology ensures that participants leave not just with knowledge, but with the confidence and skills to implement effective MRO inventory strategies in their own organizations.

Course Agenda (Course Units):

Unit One: Fundamentals of Strategic MRO Inventory Management

- Introduction to Maintenance, Repair, and Operations (MRO) Inventory.
- The Strategic Role of Spare Parts in Asset Management and Reliability.
- Understanding the Total Cost of MRO Inventory Ownership.
- Types of Spare Parts: Critical, Insurance, Consumable, and Rotable.
- The Link Between MRO Inventory and Operational Downtime.
- Challenges Unique to MRO vs. Finished Goods Inventory.
- Stakeholder Management in the MRO Spares Ecosystem.

Unit Two: Spare Parts Classification and Inventory Control Models

- ABC Analysis for Prioritizing Inventory Management Efforts.
- VED (Vital, Essential, Desirable) Analysis for Criticality Assessment.
- FSN (Fast, Slow, Non-moving) Analysis for Consumption Velocity.
- Developing a Hybrid Classification Matrix (e.g., ABC/VED).
- Economic Order Quantity (EOQ) Model and its Application for MRO.
- Calculating Reorder Points (ROP) and Safety Stock Levels.
- Exploring Different Inventory Policies (Min-Max, Periodic Review).

Unit Three: Demand Forecasting and Planning for MRO Spares

- Understanding the Challenges of Forecasting Intermittent Demand.
- Qualitative and Quantitative Forecasting Methods for MRO.
- Using Historical Data and Maintenance Plans for Forecasting.
- Strategies for Managing Long-Lead-Time Items.
- Planning for Critical and Insurance Spares.
- Introduction to Bill of Materials (BOM) for Maintenance Planning.
- Collaborative Planning, Forecasting, and Replenishment (CPFR) with Suppliers.

Unit Four: MRO Storeroom and Warehouse Management Excellence

- Principles of an Efficient MRO Storeroom Layout and Design.
- Best Practices for Receiving, Inspection, and Put-Away Processes.
- Implementing Effective Kitting and Staging for Planned Maintenance.
- Ensuring Inventory Accuracy through Cycle Counting Programs.
- Physical Inventory Audits and Discrepancy Resolution.
- Security and Access Control Measures for the MRO Storeroom.
- Health, Safety, and Environmental (HSE) Considerations in Warehousing.

Unit Five: Performance Measurement, Technology, and Continuous Improvement

- Defining Key Performance Indicators (KPIs) for MRO Inventory.
- Measuring Service Levels, Inventory Turns, and Stockout Rates.
- Strategies for Managing and Disposing of Obsolete Stock.
- The Role of CMMS/EAM/ERP Systems in Inventory Control.
- Supplier Performance Management and Strategic Sourcing.
- Developing a Roadmap for Continuous Improvement in MRO Inventory.
- Presenting the Business Case for Inventory Optimization Initiatives.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can an organization effectively balance the financial imperative to minimize inventory carrying costs with the operational necessity of high spare part availability to prevent catastrophic equipment failure and production loss?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by adopting a holistic, reliability-centered perspective on MRO inventory management, rather than treating it as a standalone logistical function. While other programs may focus narrowly on inventory models, this training emphasizes the deep integration between spare parts availability, maintenance planning, and overall asset reliability. It provides a strategic framework that connects storeroom decisions directly to bottom-line impacts like reduced downtime and improved operational efficiency. The curriculum is built on a foundation of practical application, moving beyond theory to equip participants with the skills to analyze their specific operational context and implement tailored solutions. We explore the nuances of managing different spare part categories, from high-volume consumables to high-cost critical spares with intermittent demand. The course fosters a strategic mindset, enabling participants to justify inventory policies to financial stakeholders and champion a culture of proactive, data-driven MRO management within their organizations, transforming the storeroom into a value-adding component of the entire asset management lifecycle.