IDENTIFYING CRITICAL EQUIPMENT FOCUS



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Introduction

Every plant, facility, and fleet holds a small set of assets whose failure stops production, breaks a service commitment, or creates a safety hazard. Those are the critical items, and most organisations cannot name them with evidence. Maintenance effort then spreads evenly across equipment that does not deserve equal attention, while the assets that matter run without spare parts, without monitoring, and without a plan. This Identifying Critical Equipment Focus Training Course gives maintenance, reliability, and operations professionals a structured method to separate critical assets from the rest. Participants learn criticality analysis, failure modes and effects, risk-based prioritisation, spare parts strategy, condition monitoring, and the maintenance plans that follow.

Identifying Critical Equipment Focus Course Objectives

- Apply equipment criticality analysis using consequence and likelihood criteria.
- Run FMECA and failure mode studies to expose real failure paths.
- Use RCM logic to decide which maintenance tasks add value.
- Score criticality by safety, environment, production, and cost impact.
- Rank assets by risk and allocate maintenance resources accordingly.
- Define condition monitoring and inspection regimes for critical assets.
- Set spare parts strategy: criticality-based stock, min-max, and lead time.
- Build preventive and predictive maintenance plans from criticality output.
- Set asset health indicators, KPIs, and failure reporting routines.
- Document and justify criticality decisions for audit and management review.

Course Methodology

- Facilitated sessions built on real asset registers, failure histories, and work orders.
- Workshops applying FMECA and criticality scoring to plant equipment.

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- RCM decision logic exercises on selected systems.
- Condition monitoring and spare parts strategy labs.
- Group exercise on a criticality ranking and maintenance plan for a facility.

Who Should Take This Course

- Maintenance and reliability engineers.
- Plant, facility, and asset managers.
- Maintenance planners and supervisors.
- Operations engineers responsible for equipment availability.
- Stores and spare parts controllers.
- HSE and risk officers covering asset integrity.

Identifying Critical Equipment Focus Course Outlines

Day 1: Criticality Concepts and Asset Registers

- Definitions: critical equipment, functional failure, and consequence.
- Why equal treatment of assets wastes maintenance budget.
- Building and cleaning an asset register and hierarchy.
- Functional descriptions and performance standards.
- Data sources: work orders, downtime logs, and breakdown records.
- Risk matrix design for criticality scoring.
- Governance: who owns criticality and how often to review it.

Day 2: Failure Modes, FMECA and RCM

- Failure modes, effects, and criticality analysis step by step.

- Severity, occurrence, and detection rating practice.
- Failure patterns and the bathtub curve in real equipment.
- RCM principles: functions, failures, and consequence categories.
- RCM decision logic: run-to-failure, scheduled, and condition-based.
- Identifying hidden failures and protective device testing.
- Documenting FMECA and RCM outputs for action.

Day 3: Criticality Scoring and Prioritisation

- Consequence dimensions: safety, environment, production, and cost.
- Likelihood assessment using failure history and expert judgement.
- Weighting schemes and score normalisation.
- Ranking assets and defining criticality tiers.
- Linking criticality to maintenance strategy and intervals.
- Spare parts and resource prioritisation by tier.
- Reviewing and defending criticality decisions.

Day 4: Monitoring, Spares, and Maintenance Planning

- Condition monitoring techniques: vibration, thermography, oil, and ultrasound.
- Inspection routes and operator basic care routines.
- Setting alarm and action limits for monitored parameters.
- Spare parts strategy: critical spares, min-max, and insurance stock.
- Obsolescence, lead time, and supplier risk for critical items.
- Building preventive and predictive maintenance plans.
- Shutdown and major overhaul planning for critical assets.

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Day 5: Performance, Reliability, and Improvement

- Asset health indicators and equipment KPIs.
- OEE, MTBF, MTTR, and availability measurement.
- Failure reporting, analysis, and corrective action systems.
- Root cause analysis methods for repeat failures.
- Cost of poor maintenance and budget justification.
- Auditing the criticality and maintenance system.
- Building a critical equipment improvement roadmap.

Conclusion

By successfully completing the Identifying Critical Equipment Focus Training Course, participants will have acquired a working command of equipment criticality analysis, FMECA and RCM application, risk-based prioritisation, condition monitoring design, critical spare parts strategy, and the maintenance planning and performance measurement that follows from them. They will leave able to name their critical assets with evidence, direct maintenance resources to where failure actually hurts, and justify the decisions to management and auditors. Gentex Training Center delivers this programme with maintenance and reliability practitioners working on live plant.

FAQs for the Identifying Critical Equipment Focus course

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Q1 What is the "Identifying Critical Equipment Focus" course about?

It is a five-day programme on finding the equipment whose failure matters most and building maintenance around it. It covers criticality analysis, FMECA and RCM, risk-based prioritisation, condition monitoring, critical spare parts strategy, and maintenance planning.

Q2 What are the key benefits of the "Identifying Critical Equipment Focus" course?

Participants stop spending equal maintenance effort on unequal assets, reduce unplanned downtime on the equipment that matters, and hold the right spares before failure rather than chasing them after. They also produce documented criticality decisions that justify budget and satisfy audit.

Q3 What skills will I gain from the "Identifying Critical Equipment Focus" course?

You will gain equipment criticality analysis, FMECA and RCM application, risk-based prioritisation and maintenance strategy selection, and condition monitoring, critical spares, and reliability performance management.

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Q4 What tools, methods, or standards are covered in the "Identifying Critical Equipment Focus" course?

The course works with asset registers and equipment hierarchies, functional failure and performance standard definition, risk matrix design for criticality scoring, FMECA with severity, occurrence and detection rating, failure pattern analysis including the bathtub curve, RCM decision logic and consequence categories, hidden failure and protective device testing, weighting and score normalisation for criticality tiers, condition monitoring techniques covering vibration analysis, thermography, oil analysis and ultrasound, inspection routes and operator basic care, alarm and action limit setting, critical spares and min-max stock policy, obsolescence and lead time assessment, preventive and predictive maintenance planning, shutdown and overhaul planning, OEE, MTBF, MTTR and availability measurement, failure reporting and corrective action systems, and root cause analysis methods.

Q5 How is the "Identifying Critical Equipment Focus" course applied in real-world practice?

Teams apply it when ranking a plant's asset list, deciding which machines receive condition monitoring, setting critical spare holdings before a long lead time item, rebuilding a preventive maintenance plan after repeated failures, and justifying maintenance budget at a management review.