MERCURY

Risk-Based Operational Decision-Making

27 – 31 December 2026
Kuala Lumpur (Malaysia)



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Introduction

The Risk-Based Operational Decision-Making course enhances organizations' responses to uncertainty in complex operational environments. It focuses on integrating risk awareness directly into daily operational choices to improve safety, efficiency, and resilience. It introduces modern approaches that align the principles of the operational risk decision-making framework with the demands of real-world execution. Participants will understand how uncertainty, variability, and operational constraints influence critical decisions.

The Risk-Based Operational Decision-Making program emphasizes risk-informed decision-making process methods that support both strategic and tactical levels of operations. It highlights how data, analytics, and structured judgment improve decision quality across industries. Learners will explore how decision-making under operational risk shapes organizational performance and sustainability. They will build a strong foundation in risk-based decision-making in operations management for high-impact environments.

Targeted Groups

This Risk-Based Operational Decision-Making training course targets professionals seeking specialized knowledge and skills:

- Risk managers enhance the operational risk decision-making framework.
- Operational leaders in process safety and reliability.
- Engineers in high-risk industrial environments.
- HSE officers managing operational risk evaluation techniques.
- Project managers in risk-based operational strategy environments.
- Decision analysts apply data-driven risk decision-making.
- Policy makers in the enterprise risk decision-making process.
- Maintenance managers handling complex systems risks.
- Consultants supporting strategic operational risk management.
- Emergency response professionals in operational risk contexts.
- Industry consultants advising risk-based governance decision-making.

Course Objectives

Participants will achieve the following objectives by completing the Risk-Based Operational Decision-Making course:

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- Define principles of risk-based decision-making in operations management.
- Apply the operational risk decision-making framework in real scenarios.
- Evaluate operational risk assessment and decision-making using structured tools.
- Analyze risk-based decision-making in operations management under uncertainty.
- Implement a risk-informed decision-making process for operational environments.
- Use data-driven risk decision-making techniques to achieve more accurate outcomes.
- Develop a risk-based operational strategy aligned with organizational goals.
- Construct enterprise risk decision-making process models for governance.
- Apply operational risk evaluation techniques in critical systems.
- Prioritize tasks using risk prioritization in business operations.
- Design risk-based management decision models for complex operations.
- Enhance strategic operational risk management and resilience planning.
- Improve decision accuracy through advanced operational risk frameworks.
- Strengthen alignment between operations and risk-based performance management.

Targeted Competencies

Participants will gain the following competencies during the Risk-Based Operational Decision-Making program:

- Apply operational risk evaluation techniques in structured environments.
- Use risk-based management decision models for operational challenges.
- Demonstrate data-driven risk decision-making in dynamic situations.
- Strengthen decision-making under operational risk with analytical tools.
- Integrate a risk-based approach into operations to improve outcomes.
- Apply risk-based performance management operations in monitoring systems.
- Utilize advanced operational risk frameworks in decision contexts.

Studying Scenarios

In this Risk-Based Operational Decision-Making training, participants develop skills through the following scenarios:

- Evaluating operational disruptions using structured risk prioritization in business operations.
- Responding to equipment failure using risk-informed decision-making process models.
- Managing supply chain uncertainty through data-driven risk decision-making methods.
- Assessing safety incidents using operational risk evaluation techniques.
- Balancing cost and safety in risk-based operational strategy decisions.
- Resolving cross-functional conflicts in decision-making under operational risk conditions.

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Course Content

Unit 1: Foundations of Risk-Based Operational Decision Systems

- Understand core principles of risk-based decision-making in operations management.
- Explore the evolution of enterprise risk decision-making processes across industries.
- Identify operational uncertainty factors affecting decision quality and outcomes.
- Analyze risk perception and human behavior in operational environments.
- Compare deterministic and probabilistic approaches in operational decision-making.
- Examine strategic operational risk management in organizational contexts.
- Study the link between organizational objectives and risk tolerance levels.
- Define key terminology used in the operational risk decision-making framework.
- Evaluate the role of data in supporting structured operational decisions.
- Understand governance foundations in risk-based governance decision-making.

Unit 2: Operational Risk Identification and Evaluation Techniques

- Apply operational risk evaluation techniques to detect system vulnerabilities.
- Use structured tools for operational risk assessment and decision-making.
- Identify hazards using structured risk mapping methodologies.
- Develop risk registers for tracking operational exposures.
- Analyze cascading failures in interconnected operational systems.
- Apply risk prioritization in business operations for effective control.
- Conduct scenario-based operational risk evaluation and modeling.
- Establish thresholds for acceptable risk in operational environments.
- Integrate qualitative and quantitative assessment methods.
- Map dependencies affecting operational stability and performance.

Unit 3: Decision Modeling and Analytical Risk Tools

- Apply risk-based management decision models in operational planning.
- Use data-driven risk decision-making techniques for predictive insights.
- Implement simulation tools for uncertainty-based operational decisions.
- Conduct a sensitivity analysis to evaluate the robustness of the decision.
- Use decision trees for structured operational risk analysis.
- Apply Bayesian reasoning for probabilistic operational forecasting.
- Integrate risk scoring into operational workflows and systems.
- Develop structured optimization models for resource allocation.
- Evaluate multiple alternatives using risk-based decision criteria.
- Support decisions with advanced operational risk frameworks.

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Unit 4: Operational Application and Real-World Integration

- Apply a risk-based approach to operations in industrial scenarios.
- Evaluate sector-specific risks in energy, healthcare, and manufacturing.
- Implement decision-making under operational risk in live environments.
- Conduct simulations for operational disruption and recovery planning.
- Integrate risk-based operational strategy into continuity planning.
- Develop response plans for high-impact operational disruptions.
- Analyze lessons learned from past operational failures.
- Apply collaborative decision-making in multi-team environments.
- Assess the effectiveness of operational actions using performance metrics.
- Align operational execution with risk-based performance management operations.

Unit 5: Governance, Communication, and Continuous Improvement

- Establish governance structures for enterprise risk decision-making processes.
- Implement transparent communication in risk-based governance decision-making.
- Document operational decisions for compliance and accountability.
- Strengthen organizational culture around risk awareness and control.
- Monitor operational performance using structured risk indicators.
- Improve decision systems by integrating continuous feedback.
- Align strategic operational risk management with organizational goals.
- Train teams in scenario-based operational decision rehearsals.
- Enhance resilience through adaptive operational decision systems.
- Ensure long-term sustainability through structured risk governance.

Final Insights & Key Takeaways

Risk-Based Operational Decision-Making strengthens the ability to manage uncertainty through structured, analytical thinking. It enables organizations to improve performance through data-driven risk decision-making and operational discipline. Applying operational risk decision-making framework principles ensures consistent and reliable outcomes across complex environments. Ultimately, it builds resilience by aligning operational actions with strategic risk governance and long-term objectives.