Project Risk and Uncertainty Analysis Tools Training Course

20 – 24 September 2027
Kuala Lumpur

AGILE LEADERS
Training Center

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Ref: 1256_192782 **Date:** 20 – 24 September 2027 **Location:** Kuala Lumpur **Fees:** 5200 Euro

Overview

Project Risk and Uncertainty Analysis Tools Training Course is a one-week advanced course for project, controls, risk, cost, planning, sponsorship, and assurance professionals who need a Project Risk and Uncertainty Decision File. The course connects project risk analysis, uncertainty analysis, sensitivity analysis, scenario analysis, Monte Carlo simulation, decision trees, expected monetary value, and contingency determination. Participants replace single-point forecasts with probability-based evidence and decision thresholds. Agile Leaders Training Center presents project uncertainty through traceable models, challenge, and recommendations.

Who Should Attend

- Teams responsible for project risk identification, analysis, and reporting
- Functions responsible for cost and schedule forecasts and controls
- Analysts responsible for quantitative uncertainty and simulation models
- Planners responsible for schedule risk and milestone confidence
- Sponsors responsible for contingency and decision thresholds
- Assurance teams responsible for challenging assumptions and risk evidence

The course assumes participants review project estimates, schedules, risk registers, or forecasts at work and leaves out software-specific instruction and jurisdiction-specific advice.

Departments and Industries

The course supports departments and industries that analyze project uncertainty, forecast exposure, and govern risk decisions.

- Project management, project controls, planning, and cost engineering functions
- Risk, assurance, portfolio, and capital-governance teams
- Energy, construction, utilities, transport, and manufacturing organizations
- Technology, telecommunications, healthcare, and professional-services organizations
- Infrastructure owners, contractors, engineering firms, and investment sponsors

Learning Objectives

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

- Build an uncertainty and assumptions analysis structure
- Apply probability and impact criteria to project risks
- Analyze sensitivity, scenarios, and decision alternatives
- Use Monte Carlo simulation for risk-adjusted forecasts
- Evaluate contingency and confidence-level choices
- Build evidence-based project risk recommendations

Course Agenda

Day 1: Project Uncertainty Architecture

- ISO 31000:2018 Project Risk Process Map
- Ground Rules and Assumptions Register
- Risk, Variability, and Uncertainty Classification Matrix
- Probability, Impact, and Urgency Criteria
- Project Objectives and Decision-Threshold Map

Day 2: Sensitivity and Scenario Analysis

- Driver-Based Project Forecast Model
- One-Way Sensitivity and Tornado Diagram Method
- Multi-Variable Scenario Analysis Matrix
- Correlation and Dependency Mapping Technique
- Critical Assumption Challenge Log

Day 3: Decisions Under Uncertainty

- Decision Tree Structure and Branch Logic
- Expected Monetary Value Calculation Model
- Payoff Table and Alternative Comparison Grid
- Risk Response Cost-Benefit Assessment
- Sequential Decision and Management Trigger Map

Day 4: Simulation and Contingency

- Monte Carlo Input Distribution Register
- Cost and Schedule Simulation Model
- Correlation-Controlled Probability Forecast
- Confidence-Level and Contingency Selection Curve
- Risk-Adjusted Forecast and Management Report

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Day 5: Project Risk Analysis Practice

- Exercise: Assumption and Sensitivity Diagnosis
- Exercise: Scenario and Decision Tree Comparison
- Exercise: Simulation Output and Confidence Review
- Exercise: Contingency and Response Recommendation
- Capstone Exercise: Project Risk and Uncertainty Decision File

Practical Exercises

The course uses suggested activities that connect uncertainty analysis to project decisions.

- Suggested activity: test cost and schedule assumptions for an infrastructure project.
- Suggested activity: compare technology-project scenarios with sensitivity and decision-tree methods.
- Suggested activity: interpret simulation outputs and contingency options for an energy project.
- Suggested activity: prepare a risk-adjusted forecast and sponsor recommendation supported by confidence evidence.

FAQs

Who should attend the Project Risk and Uncertainty Analysis Tools Training Course?

The course suits professionals responsible for project risk, controls, cost, schedule, planning, sponsorship, or assurance. It assumes experience reviewing project estimates, schedules, risk registers, or management forecasts.

How does project risk and uncertainty analysis differ from a general risk management course?

Project risk and uncertainty analysis models how assumptions and risks affect project cost, schedule, and decision outcomes, while general risk management addresses a broader range of organizational exposures and governance processes.

When should sensitivity analysis be used in project risk analysis?

Sensitivity analysis should be used to identify which assumptions and inputs most influence project outcomes, focus challenge and data improvement, and explain why forecasts change.

What does Monte Carlo simulation add to project uncertainty analysis?

Monte Carlo simulation combines multiple uncertain inputs and their relationships to produce a range of possible outcomes with associated probabilities rather than one point forecast.

How should project contingency be selected?

Project contingency should be selected from quantified uncertainty, project-specific risks, response assumptions, confidence evidence, organizational tolerance, and documented management judgment rather than a fixed percentage alone.

Conclusion

The course integrates assumptions, sensitivity, scenarios, decision trees, simulation, contingency, and risk-adjusted forecasts. Participants take back a Project Risk and Uncertainty Decision File containing registers, models, probability outputs, decision thresholds, and recommendations. The file makes project exposure easier to test, explain, compare, and govern.