



Enterprise Risk Quantification Course: Monte Carlo, Loss Distributions and Risk-Informed Decisions



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Introduction:

Enterprise risk quantification course on Monte Carlo, loss distributions and risk-informed decisions, held over 5 days for analysts in enterprise risk, finance and strategy, ending with a Quantified Top-Risk Profile and Mitigation Investment Case for a case organisation. Heat maps and ordinal scores cannot be added, compared with budgets or used to size capital, so leaders fund mitigations without knowing what loss they remove. Nominees already maintain risk data or financial models and build working spreadsheet simulations with case loss data. CoreConcept Training Center delivers this enterprise risk quantification course.

Course Objectives:

- Convert ordinal risk ratings into calibrated probability and impact ranges using structured expert elicitation
- Build frequency-severity loss models that combine event counts and loss sizes into an annual loss distribution
- Run Monte Carlo simulations in a spreadsheet and read loss exceedance curves, percentiles and tail measures
- Aggregate several enterprise risks with correlation and dependence settings into one portfolio loss view
- Translate simulated losses into earnings-at-risk and cash-flow-at-risk figures for planning and capital discussions
- Rank mitigation options by expected loss reduction against cost and present a mitigation investment case

Target Audience:

- Analysts responsible for enterprise risk registers, risk data and quarterly risk reporting
 - Analysts responsible for financial planning, budgeting and forecast variance explanations
 - Analysts responsible for strategy evaluation, business cases and portfolio prioritisation
 - Analysts responsible for treasury exposure, liquidity forecasts and capital headroom
 - Specialists responsible for internal audit analytics and control effectiveness testing
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Course Outline:

Day 1: Why Heat Maps Fail and the Quantitative Mindset

- Ordinal Scoring Flaws and Range Compression in Heat Maps
- Probability, Expected Loss and Variance as Decision Inputs
- Loss Event Taxonomy for Strategic, Operational and Financial Exposures
- Risk Data Inventory From Incident Logs and Finance Ledgers
- Quantification Readiness Baseline for a Current Risk Profile

Day 2: Expert Elicitation, Distributions and Loss Models

- Calibration Training With Equivalent Bet and Interval Tests
- Structured Expert Elicitation Protocol for Ninety Percent Ranges
- Poisson and Negative Binomial Choices for Event Frequency
- Lognormal, Pareto and Triangular Fits for Loss Severity
- Loss Distribution Approach Combining Frequency and Severity Draws

Day 3: Monte Carlo Simulation Build in a Spreadsheet

- Random Number Generation and Inverse Transform Sampling Formulas
- Spreadsheet Data Table Engine for Ten Thousand Trials
- Loss Exceedance Curve Construction and Percentile Read-Out
- Convergence Checks, Seeds and Simulation Error Estimates
- Sensitivity Tornado Charts for Dominant Model Drivers

Day 4: Risk Aggregation, Earnings at Risk and Model Pitfalls

- Rank Correlation Matrices for Dependent Enterprise Exposures
- Gaussian and Student t Copulas for Tail Dependence
- Earnings-at-Risk Bridge From Simulated Losses to Profit
- Cash-Flow-at-Risk Percentiles for Liquidity and Headroom Planning
- Fat Tails, Double Counting and Overprecision Model Pitfalls

Day 5: Modelling Build of the Mitigation Investment Case

- Case Organisation Elicitation Session for Top Ten Exposures
 - Case Portfolio Simulation With Correlated Loss Drivers
 - Return on Mitigation Comparison Using Expected Loss Reduction
 - Capital Buffer and Appetite Threshold Options From Simulated Tails
 - Quantified Top-Risk Profile and Mitigation Investment Case Completion
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Skills You Will Gain:

- Calibrated Estimation
- Frequency-Severity Modelling
- Spreadsheet Monte Carlo Simulation
- Loss Exceedance Curve Interpretation
- Correlated Risk Aggregation
- Earnings-at-Risk Analysis
- Mitigation Cost-Benefit Appraisal
- Model Validation and Sensitivity Testing

Why Attend This Course:

- Deliver a Quantified Top-Risk Profile and Mitigation Investment Case for a case organisation to the chief risk officer and the finance director
- Decide which mitigation proposals remove enough expected loss to justify their cost, and which exposures need a capital or liquidity buffer
- Avoid funding controls against risks that look red on a heat map but carry little loss, while larger tail exposures stay unpriced
- Coach risk owners and finance colleagues to give calibrated ranges and to reuse the spreadsheet simulation template for later cycles

Conclusion:

Back at work, the participant presents the Quantified Top-Risk Profile and Mitigation Investment Case to the chief risk officer, the finance director and the strategy lead. They use it to compare mitigation spending with expected loss reduction, to set capital and liquidity buffers against simulated tail losses and to show where appetite limits are breached in plausible years. After the first planning cycle that uses the model, the unit should compare actual loss events with simulated ranges, recalibrate the expert estimates and refresh the correlation settings.

Frequently Asked Questions FAQ:

What should participants know before the enterprise risk quantification course?

Participants should be comfortable with spreadsheet formulas and basic statistics such as averages and percentiles, and should already handle risk data, budgets or business cases. No simulation add-in or programming knowledge is needed; every model is built with standard spreadsheet functions.

How does enterprise risk quantification differ from a general enterprise risk management course?

It concentrates on numbers rather than process. General risk management courses cover frameworks, governance, registers and reporting, while this course builds loss distributions, simulations and aggregation models. Project risk courses quantify one project's cost and schedule; this course quantifies the whole organisation's exposures.

Why use Monte Carlo simulation for enterprise risk quantification instead of a heat map?

Simulation turns each risk into a range of possible losses that can be added, compared with budgets and priced. A heat map ranks risks on ordinal scales that cannot be combined, so it hides how losses accumulate across risks and in severe years.

What do participants take back from the enterprise risk quantification course?

Participants take back a Quantified Top-Risk Profile and Mitigation Investment Case, with an elicitation worksheet, a frequency-severity spreadsheet simulation, a loss exceedance curve, earnings-at-risk and cash-flow-at-risk figures, and a ranked list of mitigations they can adapt to their own organisation.