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OIL AND GAS | OG-013

Integrated Risk & Uncertainty Analysis for Capital Projects in Oil & Gas

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Course content

Why Attend

Capital projects in oil & gas involve large investments, long execution horizons, and multiple layers of technical, commercial, and operational uncertainty. Without an integrated approach, risks are often managed in isolation, leading to incomplete visibility and suboptimal decisions.

This course provides a structured, end-to-end approach to identifying, quantifying, and integrating risk and uncertainty across the full project lifecycle. Participants will learn how to connect cost, schedule, technical, and operational risks into a unified decision-support framework.

Course Methodology

The program is highly practical and application-focused:

- Real oil & gas capital project case studies
- Interactive workshops and group exercises
- Scenario-based risk modeling discussions
- Step-by-step guided frameworks for integration
- Practical tools and templates for project use

Course Objectives

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

- Apply integrated risk management across capital project phases
- Identify and link multiple sources of project uncertainty
- Quantify and evaluate combined cost, schedule, and performance risks
- Develop risk-integrated project decision frameworks
- Improve capital allocation and investment decisions
- Strengthen governance and reporting of project risks



Course content

Target Audience

This course is suitable for:

- Project Managers and Project Engineers
- Capital Project and Construction Managers
- Risk and Planning Professionals
- Cost Engineers and Project Controls Specialists
- Investment and Portfolio Decision-Makers
- Oil & Gas Technical and Operational Leaders

Target Competencies

Participants will develop competencies in:

- Integrated risk and uncertainty analysis
- Quantitative and qualitative risk assessment
- Project cost and schedule risk integration
- Scenario and sensitivity analysis
- Risk-based decision-making for capital projects
- Strategic communication of project risk

Course outline

Day 1: Fundamentals of Risk in Capital Projects

- Overview of capital project lifecycle in oil & gas
- Types of risks: technical, financial, operational, and external
- Understanding uncertainty vs. variability in projects
- Risk management frameworks and standards



Course content

Course outline

• Building a structured risk breakdown structure (RBS)

• Qualitative risk identification and prioritization

Day 2: Quantitative Risk Assessment Techniques

• Introduction to quantitative risk analysis

• Probability concepts and uncertainty modeling

• Cost and schedule risk analysis fundamentals

• Sensitivity analysis and key risk drivers

• Introduction to simulation-based risk modeling concepts

• Interpreting quantitative risk outputs for decision support

Day 3: Integration of Cost, Schedule & Technical Risks

• Linking cost, schedule, and technical uncertainty

• Dependency and correlation between risks

• Integrated risk modeling approaches

• Scenario analysis for capital projects

• Stress testing project assumptions

• Workshop: building an integrated risk model

Day 4: Risk-Based Decision Making in Capital Projects

• Decision analysis under uncertainty

• Evaluation of project alternatives using risk-adjusted metrics

• Investment decision frameworks (CAPEX prioritization)

• Risk appetite and tolerance in capital allocation

• Value of information and decision improvement



Course content

Course outline

• Case study: capital project approval decision

Day 5: Embedding Integrated Risk into Project Governance

• Integrating risk into project controls and governance

• Risk reporting for senior management and boards

• Communicating uncertainty effectively

• Lessons learned from major oil & gas projects

• Best practices in integrated risk management

• Final group case study and presentations



Seminar dates

Available seminar dates

Live dates and pricing for Integrated Risk & Uncertainty Analysis for Capital Projects in Oil & Gas generated from the course details page.

Date	Location	Format	Fee
16 - 20 November 2026	Kuala lumpur - Malaysia	Classroom	**€2,280.-**
7 - 11 December 2026	London - U.K	Classroom	**€3,080.-**
14 - 18 December 2026	Barcelona - Spain	Classroom	**€3,400.-**
21 - 25 December 2026	Vienna - Austria	Classroom	**€3,360.-**
18 - 22 January 2027	Amsterdam - Netherlands	Classroom	**€3,400.-**
15 - 19 February 2027	Munich - Germany	Classroom	**€3,400.-**
15 - 19 March 2027	Cape Town - South Africa	Classroom	**€2,272.-**
19 - 23 April 2027	Barcelona - Spain	Classroom	**€3,080.-**
17 - 21 May 2027	Munich - Germany	Classroom	**€3,400.-**
21 - 25 June 2027	Kuala lumpur - Malaysia	Classroom	**€1,800.-**
19 - 23 July 2027	Amsterdam - Netherlands	Classroom	**€3,400.-**
16 - 20 August 2027	London - U.K	Classroom	**€3,360.-**
20 - 24 September 2027	Paris - France	Classroom	**€3,600.-**
18 - 22 October 2027	London - U.K	Classroom	**€3,360.-**
15 - 19 November 2027	Amsterdam - Netherlands	Classroom	**€3,400.-**
20 - 24 December 2027	London - U.K	Classroom	**€3,360.-**