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PROJECT MANAGEMENT | PM-015

# Advanced Project Economics, Risk & Decision Analysis

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# Course content

## Why Attend

### INTRODUCTION

The three biggest planning challenges are predicting costs, assessing profitability, and risk management. All these tasks occur in the early stages of capital planning and failure to adequately evaluate these elements can lead to heavy losses.

**This Advanced Project Economics, Risk & Decision Analysis training course will highlight:**

- Identification of the stages required in the risk analysis process, i.e., preparing, modeling, and running risk analysis
- Development of the risk model, assessing probabilities to various variables, risk analysis, and explore the impact of uncertain variables
- Enable the participants to create reports such as, tornadoes diagrams, scatter plots and cumulative probability functions, using excel
- Application of decision trees and Monte Carlo-based simulations to generate profitability indicators
- Enable the participants to develop probabilistic cashflow reports along with probabilistic profitability indicators for decision-making

## Course Methodology

This Advanced Project Economics, Risk & Decision Analysis training course will incorporate a mix of learning methods, including but not limited to, high quality power point slides, short videos and active class participation.

An in-depth knowledge of quantitative risk analysis techniques and hands-on problem solving skills will be developed during this training course . Participants will use PC's to solve a variety of problems better enabling them to utilize the taught material.

A background image showing a person's hands interacting with a smartphone and documents on a desk. The documents feature two hand-drawn pie charts, one with red and blue segments and another with green and blue segments. A blue pen and a pair of glasses are also visible on the desk.

# Course content

## Course Methodology

This Advanced Project Economics, Risk & Decision Analysis training course approach will be facilitated using Microsoft Excel add on @Risk module and will further assist in promoting discussions among the participants.

## Organisational Impact

**By sending delegates on this Advanced Project Economics, Risk & Decision Analysis training course, your organization will benefit by:**

- Learning how to apply economic valuation and risk assessment processes and techniques
- Help the participants to identify and analyze the risk involved in a project
- Assist the participants to apply the decision-making procedures to justify the projects in terms of profitability
- Participants learn the decision analysis process and foundation concepts so they can actively participate in multi-discipline evaluation teams
- Monte Carlo simulation is discussed and experienced in detail in hands-on exercises
- Adding value to company's active projects, through the use of case studies
- Help participants to recognize and identify the influencing parameters

## Personal Impact

**By attending this training course, you will:**

- Learn how to describe the elements of the decision analysis process and grasp how construct a project cashflow model incorporating sensitivity analysis
- Evaluate investment and design alternatives with decision tree analysis
- Gain the operational decision making techniques using @Risk
- Gain valuable knowledge in identifying the important uncertainties in projects

A close-up photograph of a person's hands working on a desk. The left hand is holding a black smartphone, and the right hand is pointing at a document. The document features two hand-drawn pie charts with various colored segments. A yellow pencil and a pair of glasses are also visible on the desk. The text 'Course content' is overlaid in large white letters.

# Course content

## Course Methodology

- Enhance your awareness of the influential parameters

## WHO SHOULD ATTEND?

This Advanced Project Economics, Risk & Decision Analysis training course is designed to provide technical and practical approaches to executing a project in the upstream sector.

**This Advanced Project Economics, Risk & Decision Analysis training course is suitable to a wide range of professionals but will greatly benefit:**

- Planning Managers
- Project Managers
- Analysts
- Commercial Managers
- Economists
- Government Officials
- Geologists
- Business Advisors
- Asset Managers
- E&P Managers
- Product Managers
- Project Management Professionals

## Course Objectives

- Learn how to handle uncertainty in projects
- Understand different economic terms



# Course content

## Course Objectives

- Understand the expected value concept and learn its impact on decision tree analysis
- Learn expected theory concepts and attitudes towards risk, risk aversion and risk premium
- Acquire spreadsheet skills including simulation software @RISK
- Carry out cashflow analysis for project and use common economic indicators to evaluate between competing alternatives
- Carry out a comprehensive economic study evaluating projects using risk and sensitivity analysis by means of spreadsheets

## Course outline

### Development Economics

- A brief history of energy usage
- Principles of development economics
- Understanding of economic terms
- Inflation and its impact on nominal & real cashflows
- Project financing

### Uncertainty in Investments

- Handling uncertainty in capital projects
- Understanding probability concepts
- The expected value concept: features and pitfalls
- Expected Monetary Value (EMV)
- Expected Profitability Index (EPI)
- Expected Opportunity Loss (EOL)

### Risks and Uncertainties



# Course content

## Course outline

- Risk & uncertainty
- Risk aversion and risk premium
- Exploration project threats and opportunities
- Economic decision criteria
- Decision tree analysis
- Probability distribution
- Monte Carlo simulation

## Setting-up Spreadsheet Calculations Using Excel

- Spreadsheet Calculations
- Cashflow analysis
- Sensitivity analysis calculations
- Tornado diagrams
- Introduction to Monte Carlo simulations using @Risk

## Practical Use of the @Risk add-on

- Developing an integrated economic model
- Developing and using an @Risk Model Analysis
- Project sensitivity analysis utilizing data from @Risk Model
- Training course final review and close



# Seminar dates

## Available seminar dates

Live dates and pricing for Advanced Project Economics, Risk & Decision Analysis generated from the course details page.

| Date                  | Location            | Format                                    | Fee      |
|-----------------------|---------------------|-------------------------------------------|----------|
| 15 - 19 June 2026     | Barcelona - Spain   | Classroom                                 | €3,850.- |
| 20 - 24 July 2026     | Paris - France      | Classroom                                 | €4,500.- |
| 3 - 7 August 2026     | Frankfurt - Germany | Classroom                                 | €3,250.- |
| 7 - 11 September 2026 | Barcelona - Spain   | Classroom                                 | €3,850.- |
| 12 - 16 October 2026  | Barcelona - Spain   | Classroom                                 | €3,850.- |
| 9 - 13 November 2026  | Rome - Italy        | Classroom                                 | €4,250.- |
| 14 - 18 December 2026 | Munich - Germany    | Classroom                                 | €3,450.- |
| Live online option    |                     | Online delivery is available at €1,850.-. |          |