



Stanford Advanced Project Management Certificate

Project Risk Management (XAPM215)

Sample Syllabus

Primary Instructors

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Introduction

The course begins with a brief presentation that helps illustrate the opportunities for enhancing how you think about risk and risk management. Then, the Communications R Us exercise is introduced, and you'll begin to work with the provided spreadsheets and software.

Building Blocks 1: Visualizing Risk and Uncertainty; and 2: Combining Uncertainties

In this session, concepts of risk and uncertainty is introduced as a critical building block for understanding and managing uncertain probability distributions. Through intuitive examples, you'll explore how combining uncertainties can have a profound effect on risk. Monte Carlo simulation is also introduced.

Building Block 3: The Flaw of Averages

You will learn how conventional planning with uncertain assumptions leads to consistent errors. One basic concept, The Flaw of Averages, explains why most projects are behind schedule and over budget.

Building Block 4: Coupled Uncertainties

The final building block—the concept of coupled uncertainties—which can combine to dramatically increase the risk of failure.

Enterprise Risk Management

Risk management starts with the big picture. Understanding the complex issue of risk at the organizational level is a prerequisite to managing risk effectively at the portfolio, program, and project levels. This session will cover the latest thought in enterprise risk management: what it is, who needs to be involved, and how to implement it.

Stories from the Front Lines

Reflecting on historical risk events, whether within or outside our company or industry, can prove to be an invaluable tool in anticipating future occurrences. While we cannot predict when the next risk event will occur, our ability to apply lessons learned from past events can prove to be a powerful tool in helping us mitigate risks in the future.

This session will examine several case studies where missed opportunities to plan and/or effectively manage risk led to monumental consequences. Through this exploration, you'll identify key lessons learned that can be leveraged in your own organization as you create your risk plans in the future.



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Simulating Organizational Risk

Rapidly changing market conditions require project managers to execute complex projects much faster than they have been successfully completed in the past. This places a huge strain on members of the project organization to get their direct work done, while also processing all of the coordination, changes, and rework that inevitably accompany radical acceleration of project schedules. The evidence is that managers almost always underestimate the exponentially increasing workload involved in accelerating projects. The result is severe backlogs, especially for mid-level project staff; delays in task and project completion; and quality meltdowns as pressure mounts to maintain aggressive delivery schedules.

The risk of organizational failure in projects can now be predicted and mitigated using ideas and tools developed at Stanford over the past 16 years. In this session, Professor Levitt will introduce the “Virtual Design Team” approach to model a fast-track project’s information processing requirements and assess your project organization’s information processing capacity, so you can proactively anticipate these organizational risks and intervene to mitigate them.

Decision Trees and the Value of Information

Decision trees are a useful approach for modeling go/no go decisions. This technique will be used to model the risks in revamping a critical business process. The theory of the value of information will be applied to determining whether or not to perform a test to reduce these risks.

Organizational Failure in Complex Systems Projects

You will learn about “the problem of redundancy problem” in complex organizations. Managers often try to improve system reliability by adding redundancy in various forms, such as additional workers, back-up systems, or multiple personnel with overlapping responsibilities. This use of redundancy, however, often backfires, reducing organizational reliability, for three reasons: redundancy can create common-mode errors, encourage social shirking among individuals, and lead to over-compensation by organizational leaders.

A Process for Assessing and Planning for Risk

This session explores one proven approach to assessing and planning for risk. You’ll examine a process that allows you to identify risk management considerations, assess the severity and consequences of a given risk and its overall threat to your project or program, and explore options and trade-offs for managing the risk.

Putting It All Together

An understanding of risk and uncertainty on an individual basis is of no use if this knowledge cannot be effectively communicated throughout an organization to achieve a coordinated risk management effort. New information infrastructure and management protocols that can improve an organization’s ability to manage risky projects will be discussed.