

Return to Mars: Leading a Complex Project Program Details

Content: Case-based asynchronous learning that brings relevance to the user experience. Build competency. Practice skills in a virtual environment.

Learn from the experts. These groundbreaking, interactive, media-rich learning experiences recreate many of NASA's innovative projects, including the Pathfinder Mission to Mars (PMI's Project of Year) and two case studies based on the NEAR and IMAGE missions.

Learning Design: Return to Mars blends over 40 movies, 350 screens, state-of-the-art sound, animation, interface facility - and even Leonard Nimoy - into 14 powerful, 45-minute modules. NEAR and IMAGE are modeled on the Harvard Business Case Study Method.

Overview: The course uses an advanced project to create a dramatic context for a learner to build skills and practice project management techniques within a subsystem of the Pathfinder mission/project and puts you in the hot-seat of a bold attempt to land a spacecraft on Mars. The budget is tight: \$150 million, though the last mission to Mars cost over \$1 billion. The schedule is rigid: do it in 3.5 years, or you'll miss the launch window. Since participants get to simulate a real project, they come away with skills and information they can immediately apply to their own projects.

Performance Focus The courseware gives participants a clear understanding of the dynamics and challenges of project management, and provides the tools and techniques to manage the entire life cycle of a project. The course develops essential soft skills by immersing the participant in a simulation of Pathfinder's unique project environment, stressing performance and creativity, as well as innovation under tight budget and schedule restraints. Alongside its critical insights into the value of such skills as leadership, teamwork, and communication, Return to Mars provides practical tools such as work breakdown structures, lessons learned, and a 60-day scheduling software.

Each episode of Return to Mars is comprised of access quizzes, exercises based around a business case study, job aids and tools, lessons learned movies from the simulated team, and problem-solving scenarios and activities. There is a final test for PDU credits. Seat time for each episode is approximately 45 minutes.

Return to Mars: Leading a Complex Project

Episode 1: Understanding the Project

- Identify and define the stages of a project
- Understand the role your subsystem plays in meeting mission objectives, by familiarizing yourself with the project context
- Identify and describe the start-up/planning stage
- Set the stage for effective, collaborative teamwork

Episode 2: Managing Communications

- Lay the groundwork for quality communication between team members and stakeholders so that risks, problems, and needs can be identified, addressed and resolved before they get unwieldy
- Establish communication standards and formats
- Develop a detailed Communication Plan

Episode 3: Working with Stakeholders

- Determine the needs and expectations of all of your project stakeholders so that you can build a productive working relationship and meet their criteria for success
- Gain the customer's commitment to the project's success

Episode 4: Building the Team

- Know the principles and criteria of teamwork so that you can assemble a skilled, committed, and dynamic team
- Use appropriate and comprehensive criteria in selecting team members
- Prepare a Start-Up Meeting
- Identify Barriers to Teamwork

Episode 5: Defining the Project

- Create a document that defines the project/task so that your team will understand work scope and purpose, become willing to take responsibility for achieving objectives and remain committed to mission success

Episode 6: Scheduling

- Produce a Work Breakdown Structure (WBS) and a preliminary schedule indicating the time frame in which the tasks from the WBS will be performed
- Sequence tasks for scheduling
- Estimate Resource Effort
- Estimate Task Duration

Episode 7: Resources

- Understand how resources will be used and what will be needed to meet your project's schedule, cost and quality objectives
- Develop a Resource Management Plan
- Develop a Procurement Plan
- Develop a Staffing Plan
- Create a Team Member Development Plan

Episode 8: Budget

- Develop accurate estimates and effective controls for costs so that you can create a sound and reasonable project budget
- Determine an approach to managing project costs, developing a preliminary budget, and integrating budget and schedule requirements. Variables such as design changes, testing, refinements, and technical resources (mass and power, for example) must be watched closely to ensure success later

Episode 9: Risk

- Develop risk management skills so that you can identify, analyze, and control risk factors throughout the life-cycle of your project
- Identify internal and external risks
- Quantify risks
- Develop a risk response plan

Episode 10: Quality

- Know how to use formal and informal monitoring methods in order to ensure that your project is meeting quality objectives in its product, production, and management processes
- Define Quality Objectives
- Develop Quality Strategies
- Develop Quality Standards and Procedures

Episode 11: Monitoring Project Progress

- Determine the impact of change activity
- Analyze and manage changes
- Monitor the project schedule
- Monitor resources
- Monitor project costs
- Perform a staff level and work effort analysis

Episode 12: Monitoring Customer and Team

- Know how to use formal and informal monitoring methods to ensure that your project is meeting quality objectives in its product, production, quality and management processes
- Manage Customer Expectations
- Maintain Team Focus and Commitment
- Maintain a Positive Working Climate
- Develop a Team Improvement Plan

Episode 13: Project Control

- Learn how to work with the customer to maintain a successful and productive partnership as the project develops
- Learn how to focus, work with and assess your team's progress and performance so that commitments are met and overall project success is assured
- Manage trade-offs
- Identify the sources of baseline changes
- Implement baseline revisions
- Communicate project progress
- Conduct project status reviews

Episode 14: Project Close-out

- Know all of the procedures involved in formally closing out your project so that you can bring the project to completion in a way that is meaningful, instructive and beneficial to you, your team members, and your customer
 - Close project-related contracts
 - Discontinue project-related financial procedures
 - Monitor resources
 - Conduct a post-project review, emphasizing "lessons learned"
- Execute the final project communication plan