Software Project & Risk Management Courses Offered by The Westfall Team

Software Project & Risk Management is a 5-day course designed to provide a knowledge base and practical skills for anyone interested in implementing or improving Software Project and Risk Management techniques and practices in their organization.

The Project Management portion of this course starts with an overview of software project management basics, including a discussion of what a project is, why project management is important and an introduction to the project management process. The overview also includes a discussion of the characteristics of a successful software project and the role of the software project manager.

Course attendees will learn what is involved in initiating a project, including defining the project's boundaries, documenting the project's charter, identifying project stakeholders and defining the project's scope. The software project planning activities are discussed. Attendees will be taught how to document a project plan, including defining the project organization, creating a work breakdown structure, estimating project parameters, building an activity network and establishing project schedules and budgets.

This course discusses the use of strategies and tactics involved in software project execution, the need for people leadership and management, and provides a checklist for evaluating the effectiveness of project team and stakeholder communications. This course surveys various types of reviews and metrics that can be utilized to monitor the project's progress. This course also includes a discussion of project control techniques.

Attendees will learn how to close their projects, including reviewing project closure tasks, holding post project reviews and implementing post project metrics.

The Software Risk Management portion of this course starts with an overview of software risk management basics, including definitions of risk management terminology, a discussion of the importance of software risk management and different types of software risks and the introduction of the software risk management process.

Attendees will learn how to utilize various techniques for identifying and communicating software risk. Attendees will learn to analyze their identified risks through exploring the risk's context, estimating risk probabilities and losses, calculating risk exposure, and considering the risk timeframe

Attendees will explore various risk handling techniques and learn how to define risk containment and contingency plans. The implementation of risk handling actions will be discussed. This course will explore the use of various types of reviews and metrics to track software risks.

This course ends with an overview of critical success factors and barriers to implementing a software risk management program and a discussion of risk management principles.

Method of Instruction: This course is taught through lecture and interactive discussion. Actual examples from the software industry are utilized to make the information relevant. Throughout this course, learned skills are practiced using exercises. The emphasis of this course is on techniques that allow the attendees to transition the skills learned in this course to their own work environments.

Target Audience: Software project and program managers, functional managers, developers, testers, quality engineers and other software project stakeholders who will be involved in:

- Initiating, planning, executing, monitoring and controlling and closing software projects
- Identifying, analyzing and handling, tracking and controlling risks.

Course Objectives: Upon successful completion of this course attendees will be able to:

- Discuss the basic concepts and issues of software project and risk management
- Plan your software projects
- Identify, analyze and plan risk handling actions
- Implement your project and risk management plans
- Select and employ mechanisms for tracking your software projects and risks
- Control your software projects and risk
- Conduct activities necessary to successfully complete and close your software projects

For more information about these and other course offered by The Westfall Team:
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Detailed Outline:

I: Project Management – The Basics

1. What is a Project?
   - Project Defined
   - Characteristics of a Project
   - Software Project - Examples
   - The Cost/Schedule/Scope Trilogy
   - Plus Risk
   - Software Project Context
   - Enterprise Environmental Factors
   - Organizational Process Assets
   - Projects vs. Operations
   - Project, Program & Portfolio Management
   - Portfolio Management
   - Program Management
   - Project Management Office
2. Project Management Process
   - Project Management Process
   - Project Life Cycle
   - Project Management Interactions
   - Project Management Knowledge Areas & Processes
   - Initiating Process Group
   - Planning Process Group
   - Executing Process Group
   - Monitoring & Controlling Process Group
   - Closing Process Group
3. Why is Project Management Important?
   - Purpose of Project Management
   - Why is Software Project Management Important?
4. Software Project Success
   - Software Project Success
   - Critical Project Success Factors
   - Improve Software Project Success
5. Software Project Manager
   - Project Manager
   - Project Management Expertise

II: Software Project Initiation

1. Project Initiation
   - Project Management Process
   - Why Are Projects Initiated?
   - Project Initiation Issues
   - Pro ect Boundaries
   - Project Sponsor
2. Project Charter
   - Project Charter
   - Develop Project Charter Process
   - Contents of the Project Charter
   - Project Vision
   - Project Vision Statement – Example
   - Project Vision Statement – Exercise
   - Defining Project Objectives
   - Project Objectives - Example
   - Characteristics of “Good” Objectives
   - Scope & Limitations
   - Project Justification
3. Project Stakeholders
   - Identify Stakeholders Process
   - Project Stakeholders
   - Product Stakeholders
   - Benefits of Identifying Stakeholders
   - Identifying Stakeholders
   - Prune the Stakeholder List
   - Identify Stakeholders - Exercise
   - Stakeholders & Their Motives

III: Software Project Planning

1. Software Project Planning
   - Project Management Process
   - Project Planning Goals
   - Software Project Planning Overview
   - Develop project Management Plan Process
   - Software Project Plan Template
   - Evolution of the Plan
2. Collect Requirements & Define Scope
   a. Collect Requirements
      - Why Are Requirements Important
      - Issue: Project Failure
      - Collect Requirements Process
      - Level & Types of Requirements
      - Quality Attributes
      - Requirements Engineering Process
      - Requirements Elicitation Techniques
      - Requirements Analysis

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- Requirements Specification
- Requirements Validation
- Requirements Management Plan

b. Define Scope
- Define Scope Process
- Scope & Limitations

3. Work Breakdown Structure
- Create a Work Breakdown Structure Process
- Work Breakdown Structure Defined
- Types of Work Breakdown Structures
- Product Type WBS
- Process Type WBS
- Hybrid Type WBS
- Breaking the Project into Activities
- Include Everything
- Define Activities Process
- Activity Specification - Example
- Activity Specification - Exercise

4. Estimation, Schedule & Budges

a. Estimation
- Project Estimates & Forecasts
- Estimation Methods – Expert Judgment
- PERT Method
- Estimation Methods – Model Based
- COCOMO II
- Other COCOMO Models
- SLIM
- Function Point Models
- Estimate Activity Recourse Process
- Staff & Resource Allocation
- Estimate Activity Duration Process

b. Schedules
- Sequence Activities Process
- Activity Networks
- Activity Network Relationships
- Activity Network Exercise
- Develop Schedule Process
- Critical Path
- Shortening Schedule Duration
- Dual Critical Paths
- Staffing & Resource Allocation - Exercise

c. Budgets
- Estimate Costs Process
- Project Budgets
- Determine Budget Process

5. Staffing & Resource Plans
- Develop Human Resource Plan Process
- Staffing Acquisition & Management Plans
- Project Boundaries & External Interfaces
- Project Organization – Functional Structure
- Project Organization – Project Structure
- Project Organization – Matrix Structure
- Roles & Responsibilities
- Other Resource Requirements

6. Other Project Plans

a. Plan Quality
- Plan Quality Process
- Quality Management System Hierarchy
- Quality Plans
- Software Quality Assurance Plans
- Verification & Validation Plans
- Configuration Management Plans

b. Plan Communications
- Plan Communications Process
- Communication Management Plan

c. Plan Procurement
- Plan Procurement Process
- Types of Software Acquisition
- Advantages of Outsourcing
- Outsourcing is Risky
- Acquisition & Supplier Management Planning
- Plan the Acquisition
- Acquisition Project Plan
- Develop In-House – Checklist
- Outsourced – Checklist
- Information Gathering

IV: Software Project Execution

1. Software Project Execution
- Project Management Process
- Direct & Management Project Execution Process

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- Project Execution Activities
- Strategies & Tactics
- Strategy/Tactics Effectiveness Matrix

2. Project Team
   - People Are a Project's #1 Asset
   - People Management Functions
   - Acquire Project Team Process
   - Job Specification – Example
   - Job Specification – Exercise
   - Steps in Acquiring Project Team Members
   - Orientation Checklist – Example
   - Develop Project Team Process
   - Improvement Trilogy
   - SEI People CMM®
   - Mentoring in Performance Expectations
   - Mentoring in Job Skills
   - Stages of Team Development
   - Manage Project Team Process
   - Leadership
   - Project Leadership Functions
   - Leadership Skills
   - Situational Leadership
   - Views of Conflict
   - Benefits of Conflict
   - Not Enough Good Conflict
   - Reducing Conformity
   - Negative Conflict
   - Motivation
   - Recognition
   - Environment
3. Perform Quality Assurance
   - Perform Quality Assurance Process
   - Audits, Assessments & Retrospectives
4. Communications
   - Distribute Information Process
   - Communication Models
   - Types of Verbal Communications
   - Types of Written Communications
   - Manage Stakeholder Expectations Process
   - Project Team Communications
   - External Stakeholder Communications
5. Conduct Procurement
   - Conduct Procurement Process
   - Identify, Evaluate & Select Suppliers
   - Identify Potential Suppliers
   - Supplier Identification Methods
   - Must Have Checklist – First Pass at Selection
   - Evaluate Potential Suppliers
   - Evaluation Methods
   - What Should Be In a Contract?
   - Supplier Evaluation Checklists
   - Supplier Scoring Matrix – Example
   - Negotiation Skills
   - Negotiation Process
   - Award Contract

V: Software Project Monitoring & Control

1. Monitoring& Control Project Work
   - Project Management Process
   - Monitoring & Control Project Work Process
   - Monitoring & Control - Goals

   a. Software Project Monitoring
      - Software Project Monitoring
      - Report Performance Process
      - Project Reviews
      - Phase Gate Reviews
      - Project Team Status Reviews
      - Senior Management Reviews
      - Program Reviews
      - Performance Reports & Metrics

   b. Software Project Control
      - Actuals vs. Estimates
      - Corrective Action
      - Corrective Action Steps

   c. Control Scope
      - Control Scope Process
      - Tracking Internal Deliverables
      - Requirements Management
      - Traceability
      - Traceability Matrix

   d. Control Cost & Schedule
      - Control Schedule Process
      - Gantt Charts
      - Integrated Master Schedule
      - Control Cost Process
      - Earned Value

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- Earned Value Metrics
- Earned Value Tracking
- Staff & Resource Monitoring
- Productivity Monitoring

e. Perform Integrated Change Control
- Perform Integrated Change Control Process
- Configuration Control
- Identifying Configuration Items
- Acquisition
- Configuration Control Procedures
- Types of Configuration Control
- Change Control Process
- Document Control Process
- Configuration Control Board (CCB)
- CCB Process for Change Control
- CCB Process for Document Control
- Impact Analysis
- Version Control
- Status Accounting
- Configuration Item Dependencies
- Change Requests

f. Perform Quality Control
- Perform Quality Control Process
- Quality Control Tools & Techniques

g. Verify Scope
- Verify Scope Process
- Verify Entry & Exit Criteria
- Quality Gate
- Verify Scope Techniques
- Completeness of Test Coverage
- Incident Report Backlogs

h. Administer Procurement
- Administer Procurement Process
- The Acquisition Process
- Supplier Management
- Mechanisms for Supplier Monitoring
- Joint Supplier/Acquirer Meetings
- Integrated Product Teams
- Integrated Product Teams – Examples

VI: Software Project Closure

1. Project Closure Tasks

a. Project Management Process
b. Why Project Closure is Important?
c. Close Project or Phase Process
d. Project Closure Tasks
e. Close Procurement Process
f. The Acquisition Process
g. Product Acceptance
h. Testing Acquired Software
i. Functional Configuration Audit
j. Physical Configuration Audit

2. Post Project Review

a. Post Project Review Forms
b. Post Project Review Meeting
c. Post Project Review Follow-up

3. Post Release Metrics

a. Post Release Software Quality
b. Software Availability
c. Responsiveness to Customer Problems
2. Customer Satisfaction

VII: Software Risk Management

1. Risk Management – The Basics

a. What is Risk Management?
- Future Awareness
- Risk Defined
- Risk Exists
- Risk / Opportunity Balance
- Risk Tolerance
- Risk Probability & Loss

b. Why is Risk Management Important?
- The Software Challenge
- Software Project Success Defined
- The Plan Will Never Work
- Why is Risk Management Important?
- Risk Management Objectives

c. Types of Software Risks

d. Risk Management vs. Project Management
- Planning Process Group
- Control Process Group

e. The Risk Management Process
- Risk Management Process
- Baseline Activity & Continuous Process
- Standards & Guidelines

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2. Software Risk Identification

a. Risk Identification Goals
- Distribution of Outcomes
- Risk Identification Goals – Identify Risks
- Risk Identification Goals – Prevent Surprises
- Risk Identification Goals – Involve People at All Levels
- Risk Identification Goals – Still Time to Act
- Risk Identification Goals – Communicate

b. Risk Identification Techniques
- Inputs & Outputs
- Identify Risk Process
- Cultural Barriers to Risk Identification
- Risk Identification Techniques
- Brainstorming
- Brainstorming – Team Exercise
- Interviewing
- Interviewing – Team Exercise
- Voluntary / Required Reporting
- Project Decomposition
- Product Decomposition
- Assumption Analysis
- Risk Taxonomies
- Risk Taxonomy – Team Exercise

c. Communicating Risks
- Communicating Risks
- Writing Risk Statements
- Risk Statement – Team Exercise
- Risk Form – Identification Section

3. Software Risk Analysis

a. Risk Analysis Goals
- Risk Analysis Goals
- Inputs & Outputs

a. Risk Context
- Analyzing Risk Context
- Risk Context – Team Exercise
- Process Decision Program Charts
- Root Cause Analysis – 5 “Why?” Method
- Root Cause Analysis – Cause & Effect (Fishbone) Diagram
- Cause & Effect – Team Exercise
- Process Cause & Effect Diagram
- Failure Mode & Effects Analysis

b. Risk Probability & Loss
- Levels of Formal Risk assessment
- Perform Qualitative Risk Analysis Process
- Perform Quantitative Risk Analysis Process
- Risk Probability
- Probability Lesson
- Loss Analysis
- Compound Risks
- Risk Classification

c. Risk Exposure & Timeframe
- Another Probability Lesson
- Risk Exposure
- Risk Exposure – Team Exercise
- Risk Timeframes
- Multiple Timeframes

d. Analyzing Safety & Security Risks
- Software Safety Risk
- Software Safety Activities
- Hazard Analysis & Safety Mitigation Process
- FMEA
- Safety Risk Mitigation
- Software Security Attackers, Attacks & Paths
- Software Security Threats
- Security Risk Analysis
- Software Security Risk Management

e. Prioritize Risk List
- The Cost/Schedule/Product Trilogy
- Prioritizing Risks
- Ranking by Exposure & Timeframe
- Prioritization – Team Exercise
- Comparison Risk Ranking
- CCR – Team Exercise
- Prioritization Matrix
- Other Prioritization Techniques
- Risk Form – Analysis Section

4. Software Risk Management Planning

e. Risk Management Planning Goals
- Planning Goals
- Inputs & Outputs

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- Plan Risk Response Process

f. Risk Handling Techniques
- Techniques for Handling Risks
- Obtain Additional Information
- Obtain Additional Information - Examples
- Avoid the Risk
- Avoid the Risk - Examples
- Transfer the Risk
- Transfer the Risk - Examples
- Control the Risk: Containment Plans
- Containment Plan - Examples
- Assume the Risk: Contingency Plans
- Contingency Plan - Examples

g. Develop Risk Plans
- Two Kinds of Actions
- Cost of Risk
- Risk Reduction Leverage
- Risk Form – Plan Section
- Adjust Project Plans
- Risk Planning Exercise

5. Taking Action & Tracking Risks

e. Taking Action
- Taking Action Goals
- Taking Action – Inputs & Outputs
- Just Do It

f. Risk Tracking
- Risk Tracking Goals
- Risk Tracking – Inputs & Outputs
- Monitor & Control Risks Process
- Tracking Mechanisms
- Reviews – Project Team
- Reviews – Senior Management
- Reviews – Major Milestone & Phase Gate
- Reviews – Entry & Exit Criteria
- Metrics – Ratio Variance
- Metrics – Absolute Delta Variance
- Metrics – Thresholds
- Risk Tracking – Team Exercise

6. Implementing a Risk Management Program

e. Five Stages of Risk Management

f. Critical Success Factors & Barriers
- Critical Success Factors
- People
- Process
- Infrastructure
- Risk Management Policy Example
- Barrier – “Don’t Even Talk About Risks”
- Barrier – Fear
- Barrier – “I’m Already Too Busy”

g. Nine Principles of Team Risk Management

Other Software Project & Risk Management Courses:

Software Project Management is a 3-day course designed to provide a knowledge base and practical skills for anyone interested in implementing or improving Software Project Management techniques and practices in their organization.

Software Risk Management: This 2-day course is designed to provide a knowledge base and practical skills for anyone interested in implementing or improving Software Risk Management techniques and practices in their organization.

Customized Software Project & Risk Management Courses: Our software project and risk management courses are modularized so that they can be easily customized for in-house course offerings that focus on the specific content and topics needed to meet your organization’s exact training requirements.

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