Agenda

- Introduction & Review
- Risk Management Plan Outline
- Risk Identification
- Risk Analysis
- Risk Control & Monitoring
- Summary
Introduction & Review

- Software development is prone to
  - Missing deadlines
  - Exceeding budgets
  - Delivering less than satisfactory products

- Risk management deals with these before they occur
Introduction & Review cont’d

- Risk Management:

  An organized means of identifying risk factors, developing and selecting risk handling options and mitigating risks when they become problems.
Main Goal of Risk Management:

To identify and respond to potential problems with sufficient lead time to avoid a crisis.
Risk Management Plan Outline

- Purpose
- Roles and Responsibilities
- Risk Documentation
- Activities
- Schedule
- Budget
- Top Risk List

Refer to handout: “Risk Management Plan Template”
Risk Management Plan cont’d

Steps:

1. Risk Identification
2. Risk Analysis
3. Risk Control & Management
Risk Identification

“While it is futile to try to eliminate risk, and questionable to try to minimize it, it is essential that the risks taken be the right risks.”

Peter Drucker

- Before we can identify the 'right' risks, we must identify all risks

- Risk Identification:
  - how to come up with issues that may be risks
Risk Identification cont’d

- Lists specific project risks within 5 broad categories (areas of risk) including:
  - ✓ Schedule
  - ✓ Cost
  - ✓ Requirements
  - ✓ Quality
  - ✓ Operational
Risk Identification - Schedule

- Schedule Risks
  - personnel
  - resources
  - customer
  - dependent task delay
  - critical path task delay
Risk Identification - Cost

Cost Risks

✓ creeping requirements
✓ schedule compression
✓ unreasonable budgets
Risk Identification - Requirements

- Requirements Risks
  - incorrect requirements
  - incomplete requirements
  - unclear or inconsistent requirements
  - volatile requirements
Risk Identification - Quality

- Quality Risks
  - unreliable
  - unusable
  - not maintainable
  - non-portable
  - non-expandable
Risk Identification - Operational

- Operational Risks
  - system does not posses functional, performance or quality attributes customer and users want or need
Risk Identification – Other Risks

- Some risks don’t fit into one of five categories
- Business risks –
  - building an excellent product that no one really wants (market risk)
  - building a product that no longer fits into the overall product strategy for the company
  - building a product that the sales force doesn't understand how to sell
  - losing the support of senior management due to a change in focus or change in the people (management risk)
  - losing budgetary or personnel commitment (budget risk)
Risk Identification Exercise

Project: Your team has been contracted to design a 5-page website for a Spring Alumni event that the Faculty is hosting. The site will be hosted on a UW server and must be launched by the end of March. The Dean is your single point of contact.

Task: List at least 5 risks (schedule, cost, requirements, quality or operational risks) that could cause the project to be late, over budget or a failure.
Risk Analysis

risk analysis = risk projection = risk estimation

- Risks are weighted by perceived impact (on the project) and then prioritized.
- 3 factors affect impact: its nature, its scope and its timing.
- Requires a scale that reflects the perceived likelihood of the risk.
Risk Analysis cont’d

Scales:

- Yes/No - highly unrealistic you can answer each question with Yes or No - rarely possible to assess risk in such absolute terms

- Qualitative probability scale
  
  ![Qualitative Probability Scale Diagram]

  Highly
  Improbably
  Improbably
  Moderate
  Likely
  Highly
  Likely

- Estimate mathematical probability that risk will be realized (i.e. .90 implies highly likely risk)
Risk Analysis cont’d

- Numerical probabilities can be estimated using statistical analysis of metrics collected from past projects, intuition, or other information.

- For example if of 50 projects, 41 experience twice the number of customer changes as predicted, the probability that a new project will experience excessive number of changes is $41/50 = .82$, very likely.
Risk Analysis Exercise

Risk: Hosting server is unreliable and not available to upload and test on.

Your task is to:
1. Estimate the probability of this occurring
2. Assign a priority level
3. Determine impact on project
4. Identify mitigation approaches
5. Document contingency plan
6. Establish trigger for contingency plan

(Note: provide justification for your decisions)
Risk Control & Monitoring

- Risk control & monitoring = Risk management

- Commences once Risk Management Plan has been developed and project starts.

- Project tracking activity with 3 primary objectives:
  1. assess whether a predicted risk does, in fact, occur
  2. to ensure that risk aversion steps defined for the risk are being properly applied
  3. to collect info that can be used for future risk analysis.
Risk Control & Monitoring Exercise

Risk: High staff turnover.

- Based on past history and management intuition, risk is estimated to be .7 (rather high) and the impact is projected to increase project duration by 15 % and overall cost by 12 %.

- What risk management steps would you propose to mitigate this risk
  - Before project initiation
  - Following project initiation
Summary

Define each risk, its likelihood of occurrence, and its projected impact. Once this information is known, risk management and monitoring activities can be conducted to help control the risks that do actually occur.
Questions?

Thank you.