ASIAN INSTITUTE OF TECHNOLOGY
SCHOOL OF ENGINEERING AND TECHNOLOGY
Engineering Leadership

ELP 1.7: PROJECT RISK MANAGEMENT 3(3-0) Semester: JAN 2016

Rationale: Projects, regardless of scope, contain many unforeseen circumstances. Risk is concerned with a detrimental event, the probability of the event occurring, and the significance (consequence) of that occurrence. Quantifying project risk involves understanding potential problems and opportunities that might occur during a project and how they might impede project success. Risk management are the decisions made to mitigate, transfer or accept a risk and can be viewed as either a form of insurance or as an investment. Because project failure may lead to significant financial impact or physical injury, and can impact a large number of persons, managing project risk from the beginning of a project is critical to successful project management.

Catalog Description: This course is designed for the participants so that they learn various techniques for assessing and managing risk, and learn how to "Crash" (i.e., accelerate) a project. In addition to standard techniques, matrices identifying potential risk events will also be provided as a guide, with a focus on engineering and technical projects. The participants will learn how to develop backup and recovery plans.

Pre-requisite:

1. ELP 1.1 : Developing Leadership Capability
2. ELP 1.2 : Communication Skill for Leaders
3. ELP 1.4 : Project Management Practices

Course Outline:

1. Understanding the concept of risk management.
1.1.What is Risk?
1.2.How is it managed?
1.3.Risk Management Principles
1.4.Importance of risk management for small and large projects

2. Risk Identification, Assessment and Mapping
2.1. Identification. Identifying events that could affect a project
2.2.Assessing the risk.
2.2.1. Probability (likelihood) of an event occurring
2.2.2. Consequences of the event
2.2.3. Probability of a consequence occurring
2.2.4. Uncertainty in event and consequences

3. Risk Planning and Monitoring.
3.1. When to start, and how to plan, for projects
3.2. Defining project scope, requirements and deliverables
3.3. Approaches to reduce the risk of complex projects
3.4. Defining what makes the project so complex
3.5. The five common elements of risk, complex projects

4. Documentation and MonitoringPerforming project risk management in projects.
4.1. How to quantify risk so as to provide quantitative information for decision making on labour, equipment, scheduling and financing.
4.2. Quantifying and understanding uncertainty in risk management and decision making.

5. Risk Modelling
5.1. Risk Management Tools: "Risk Severity Matrix" and "Monte Carlo Simulation"
5.2. Developing cost-at-completion models
5.3. Creating and applying performance metrics

6. Project recovery
6.1. Developing recovery plans and management metrics
6.2. Selecting internal and subcontract resources

7. Risk Management
7.1. Decision Making
7.2. Managing media coverage of high-risk projects
7.3. Negotiating subcontracts in a risk situation
7.4. Applying change control to an always changing environment
7.5. Obtaining stakeholder involvement and support
7.6. Working with the politics of complex projects
7.7. Securing project information from misuse

8. Management and leadership decisions
8.1. Project risk management
8.2. Organizational risk management
8.2.1. Reputational risk
8.2.2. Financial risk
8.2.3. Professional liability risk
8.2.4. Multi cultural issues regarding duty of care to reputation, fiscal responsibility and professional liability

Laboratory session: 15 hours of interactive session

Textbook: Lecture notes and selected papers

Reference books**:**

1. *Guide to Project Management: Getting it right and achieving lasting benefit,* by Paul Roberts, Publisher Wiley; 2 edition (February 4, 2013)
2. *Project Estimating and Cost Management*, by Parviz F. Rad, Publisher Management Concepts, 2002.
3. *A Guide to the Project Management Body of Knowledge: PMBOK(R) Guide 5th Edition*, by Project Management Institute, Publisher Project Management Institute; 5 edition (January 1, 2013).
4. *'Project Management: A Systems Approach to Planning, Scheduling and Controlling* by Harold R. Kerzner, Publisher: Wiley; 11 edition (February 18, 2013).
5. *Project Risk Management,* by Bruce Barkley, Publisher: McGraw-Hill Education; 1 edition (July 19, 2004).
6. *Project Risk Management: Processes, Techniques and Insights,* by Chris Chapman, Stephen Ward, Publisher: Wiley; 2 edition (December 1, 2003)

Journals and Magazines:

1. Project Management Journal
2. International Journal of Project Management
3. Journal of Technology Management and Innovation
4. Journal of Business Economics and Management
5. http://www.projecttimes.com/

Grading system:

1. Mid-sem exam (25%)
2. Final exam (25%),
3. Assignments/projects (30%).
4. Laboratory Sessions (20%).

Instructors:

Expected outcomes: Students, at the completion of this course, are expected to

1. Understand the difference between a risk and an issue.
2. Identify, analyse and manage both positive and negative risks.
3. Understand of the risk management plan and knowledge to create it.
4. Have the knowledge of best practices used to identify risks and their potential impacts.
5. Understand and demonstrate the methods of analysing risk (qualitative and quantitative).
6. Develop ability to look for the root cause of the risk rather than the symptoms.
7. Strategies the working of the team to mitigate negative risk.
8. Develop a risk management process to identify and monitor tasks.
9. Evolve as a leader in the organization to overcome organizational and cultural factors and implement risk management plan.