

Saint Leo University

MGT 315

Project Risk Management, Cost Analysis, and Decision Making

Course Description:

This course is an in-depth analysis of the steps involved in identifying, analyzing, evaluating, and controlling project costs and risks, and making decisions to effect project completion. State-of-the-art tools and techniques for identifying, measuring, and monitoring costs and risks in the project management environment are examined. Cost estimating, cost budgeting, activity-based costing, and cost control techniques are emphasized. Decision analysis and decision tree techniques are studied to include expected value, minimax, and maximin criteria. Also covered will be areas of flawed decision-making, including such topics as groupthink, the domain of losses, the domain of gains, the Abilene paradox, the Milgram experiments, and the Asch effect. The course covers how a comprehensive risk management approach can enable a project team to make the correct decisions to manage issues proactively and costs that could adversely impact the success control and completion of a project.

Prerequisite:

MGT 312

Textbooks:

Raydugin, Y. (2013). *Project risk management: Essential methods for project teams and decision makers*. Hoboken, New Jersey: John Wiley & Sons. ISBN: 978-1-118-48243-8

Project Management Institute. (2013). *A guide to the Project Management Body of Knowledge (PMBOK® Guide) (5th ed.)*. Newtown Square, PA: Project Management Institute. ISBN: 978-1-935589-67-9

Learning Outcomes:

1. Determine project risks and uncertainties.
2. Formulate a comprehensive risk management plan.
3. Identify, assess, prioritize, decide, and respond to cost/schedule risks using qualitative and quantitative approaches.
4. Analyze and draw correlations between cost and schedule risks.
5. Demonstrate the core value of excellence.

Core Value:

Excellence: Saint Leo University is an educational enterprise. All of us, individually and collectively, work hard to ensure that our students develop the character, learn the skills, and assimilate the knowledge essential to become morally responsible leaders. The success of our University depends upon a conscientious commitment to our mission, vision, and goals.

Evaluation:	
Assignment	Weight
Discussion (8)	10%
Assignments (4)	25%
Case Study Project	15%
Quiz	10%
Midterm Exam	20%
Final Exam	20%
Total	100%

Discussions:

Class participation in discussions is expected to be thoughtful and well-informed. Within each module, respond to a discussion question posted by the instructor **no later than Thursday 11:59 PM EST/EDT** of the respective module. Finally, post responses to at least two classmates **no later than Sunday 11:59 PM EST/EDT**. Provide support for arguments, observations, and conclusions, including properly formatted text citations and references.

Assignments:

There are a total of four assignments in this course, occurring in **Modules 2, 3, 5, and 6**. Assignments will vary dependent upon module expectations. Details for each assignment are located within the module pages in which the assignment is due. All assignments are due **no later than Sunday 11:59 PM EST/EDT** within their respective module.

Case Study Project:

Throughout this course, you will develop an understanding of the deterministic and probabilistic methods used in uncertainty management that will enable you to review a simplified “straw man” case study of a hypothetical project. Details on this assignment are located within the module pages. The Case Study Project is due **no later than Sunday 11:59 PM EST/EDT of Module 7**.

Quiz:

You will complete a multiple-choice/short response quiz. The quiz is **due no later than Sunday 11:59 PM EST/EDT of Module 6**.

Exams:

There are a total of two exams in this course, a Midterm and Final, occurring in **Modules 4 and 8**. Complete each exam **no later than Sunday 11:59 PM EST/EDT**.

Practice Tests:

There are two **ungraded** Practice Tests in **Modules 4 and 7**. It is highly recommended you complete these as they are intended for review and preparation for the PMP exam.

Grading Scale:

Grade Score (%)

A	94-100
A-	90-93
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D+	67-69
D	60-66
F	0-59

Assessment of the Learning Outcomes:

Course Learning Outcome	Assessment Method
1	Discussion Questions 1, 4 and 6; Assignment 1; Midterm Exam
2	Discussion Questions 2, 5 and 8; Assignment 3; Case Study Project
3	Discussion Questions 3, 4 and 8; Assignments 2 and 4; Final Exam
4	Discussion Question 7; Case Study Project; Final Exam
5	Discussion Question 2

Course Schedule:

Module 1 Exploring Project Uncertainties

Objectives At the conclusion of this module, you will be able to:

- Explain the terms front-end loading (FEL) and final investment decision (FID) and their timing within the project development phases.
- Identify the four uncertainty types and their related key uncertainty objects.
- Describe the transformations that lead to issues and uncertain discrete events.
- Explain internal and external uncertainty exposure changers.

Assignments

Items to be Completed:	Due No Later Than:
Post an introduction to the class	Thursday 11:59 PM EST/EDT
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT

Module 2 The Risk Management System

Objectives At the conclusion of this module, you will be able to:

- Define the main components of a risk management system.
- Summarize the organizational framework of risk management.
- List and discuss the steps of the risk management process.
- Identify risk management tools.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Assignment 1	Sunday 11:59 PM EST/EDT

Module 3 **Methods of Assessment (Overview)**

Objectives At the conclusion of this module, you will be able to:

- Explain deterministic qualitative and quantitative methods.
- Describe probabilistic qualitative and quantitative methods.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Assignment 2	Sunday 11:59 PM EST/EDT

Module 4 **Risk Identification and Midpoint Review**

Objectives At the conclusion of this module, you will be able to:

- Identify sources of uncertainty.
- Analyze sources of uncertainty and risk breakdown structures.
- Explain the use of a bowtie diagram and benefits of three-part uncertainty naming.
- Examine the role of bias in uncertainty identification.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete the Midterm Exam	Sunday 11:59 PM EST/EDT

Module 5 **Deterministic Methods**

Objectives At the conclusion of this module, you will be able to:

- Apply deterministic assessment tools.
- Identify strategies for addressing risk.
- Summarize risk response implementation and monitoring.
- Explain the requirements and use of decision gates.
- Explain the role of risk review and reporting in making timely decisions and strategies for handling bias.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Assignment 3	Sunday 11:59 PM EST/EDT

Module 6 **Deterministic Methods, Continued**

Objectives At the conclusion of this module, you will be able to:

- Design risk registers and develop decision trees for engineering design option selection.
- Identify sources of procurement risks.
- Summarize bid evaluation methods.
- Apply cost escalation models.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit Assignment 4	Sunday 11:59 PM EST/EDT
Complete the Quiz	Sunday 11:59 PM EST/EDT

Module 7 Probabilistic Methods

Objectives At the conclusion of this module, you will be able to:

- Outline the integrated deterministic and probabilistic workflow.
- Explain the impact of a schedule general uncertainty.
- Describe the schedule impact of an uncertain event.
- Discuss the role of correlations in probabilistic analysis.
- Calculate schedule driven costs.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Submit the Case Study Project	Sunday 11:59 PM EST/EDT

Module 8 Using Probabilistic Analysis in Decision Making

Objectives At the conclusion of this module, you will be able to:

- Use outputs of Monte Carlo analyses in decision making.
- Apply methods for calculating project cost and schedule reserve.
- Explain cost reserve drawdown.
- Summarize sensitivity and what-if analyses.

Assignments

Items to be Completed:	Due No Later Than:
Read the assigned materials	
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete the Final Exam	Sunday 11:59 PM EST/EDT