



EVERYONE'S SMART UNIVERSITY

Course Syllabus

Fall 2022

PROJECT MANAGEMENT DEPARTMENT 2022	
Risk And Decision Analytics – PMG621	
Code Number	PMG 621
Credit Hours	3 credit hours
Pre-Requisites	-----
Instructor's Name	Dr. Sami Alzahrani
Schedule	Recorded lecture (90 Min) uploaded each Saturday and Tuesday.
Office Hour / Zoom Meeting	Monday (7 – 8 pm)
Email Address	salzahrani@esu.ac.ea

COURSE DESCRIPTION

This course introduces the basic concepts, principles, and techniques of decision making under risk. Participants will. It provides learning how to model complex business problems that involve risk and uncertainty with the help of spreadsheet models. The course covers analytical tools such as monte carlo simulation, decision analysis, machine learning and optimization under uncertainty. The emphasis will be on model formulation and the interpretation of results rather than mathematical theory. It will focus on models that are widely used in diverse industries such as financial services, real estate, pharma, and energy. It will analyze risks in financial securities, construction projects, R&D projects, supply chain, etc. Applications include: Risk quantification and prediction of investment opportunities; Risk diversification and portfolio management; and Risk mitigation and value of strategic flexibility.

GENERAL OBJECTIVES

The focus of this course is Students will be able to:

- Evaluate critical success factors for projects and programs, use these factors to create project portfolios that align with strategic goals of the organization and describe best practices for managing such a portfolio.



- Construct a program management plan that describes best practices for the creation and management of programs and how to coordinate activities such as finance, procurement, and risk across programs.
- Given a case consisting of a specific set of project contexts and plans within a project portfolio, recommend approaches for managing and balancing resource demands, allocations, and stakeholder expectations across the projects, programs, and the portfolio
- Critique the concepts of responsibility-center accounting and budgeting.
- Given a specific project context, which includes a plan, cost, schedule, and deliverable metrics, analyze the project data, classify various project expenditures as capital or operational, and recommend approaches for funding the project.

LEARNING OUTCOME

Week	Topics	Specific Topics & Objectives	Students Work
1	Introductory Lecture	- Introduction for the course	Trail Quiz Class Discussion during ZOOM session
2	Introduction to Risk and Decision Analysis	- Decision Problems - Applying the DA approach requires Risk & Uncertainty - Frequency and Probability Distributions - Popular Central Measures - Cumulative Probability Density Curve - Expected Value EV -	Quiz 1 Class Discussion during ZOOM session
3	Decision Analysis Process	- Ten Steps toward Better Decisions Risk and Decision Tools	Quiz 2 Class Discussion during ZOOM session
4	Decision Policy $\frac{1}{2}$	- Decision Maker's Preferences -	Quiz 3 Class Discussion during ZOOM session
5	Decision Policy $\frac{2}{2}$	- Attitude toward (Time Value, objectives and Risks)	Quiz 4 Assignment 1 Class Discussion during ZOOM session
6	Utility and multi-criteria decisions	- Conservative Risk Attitude - Utility Function for Risk Policy - Multi Criteria Decisions - Monetary Value Objective Approach	Quiz 5 Class Discussion during ZOOM session
7	Decision Tree	- Decision tree anatomy - Example of decision tree	Quiz 6 Due



			Class Discussion during ZOOM session
8	Value of Information	- Creating good decision alternatives - Revising Information	Quiz 7 Class Discussion during ZOOM session
9	Project Risk Management	- Asset life cycle - Risk management steps - Modeling risk analysis	Quiz 8 Class Discussion during ZOOM session
10	Judgments & Biased	- The three roles of decision process - Judgments - Probabilities assessments - Objective and Subjective Probability - Confidence level - Bias - Belief and Perception Errors	Quiz 9 Class Discussion during ZOOM session
11	Probability Distribution Types	- Standard Deviation - Discrete and continues distribution - Normal distribution and other types of distributions	Quiz 10 Class Discussion during ZOOM session
12	No Class		Class Discussion during ZOOM session
13	Final Exam		

Instructor's Teaching Strategies/Methods

- The lectures of this course are given to the students as a recorded lecture, the instructor explain the contents of each chapter with explaining a real cases and different studies related to the topic of the lecture, then the instructor discuss and analyze with the students during the virtual meeting (ZOOM Session) in order to help them comprehend the learning objectives and relate them to real life situations.
- During the course, the students are required to complete several quizzes and exams that are going to measure their comprehension. And the instructor will give continuous feedback on students' course work.

Course Material

1) **RISK and DECISION ANALYSIS in Projects, Second Edition, By John Schuyler**

Course Assessment



	Assessment Tools	Weights	
1	Quizzes (10)	8 each	80%
2	Final Examination	20	20%
Total			100%

Class Policies	
1. A. Attendance	- Students are required to attend all the recorded lectures. - Scheduled virtual meetings (ZOOM meeting) is optional. - Failure to attend any quiz, the student considers absent. - Failure to attend more than 4 quizzes the student considers 'DN' (Denial). Only extraordinary/Major force situations may be considered along with some supportive legal documentation to request any deviation from this policy.
2. Quizzes, Assignment, and Exams	- Quiz is added on a weekly base for 10 weeks (10 quizzes) and it should be submitted within 7 days. - Final Exam will be on the final exam period which will be announced on the MOODEL
3. Class Etiquettes AND Academic Honesty	- Adherence to class etiquettes and the rules set by the Instructor and the University is a must. - The student is not allowed to voice/video record ZOOM session/instructor without permission. - Students must take responsibility in attending all recorded lectures, submitting all the quizzes and assignment on time, being present for mid-term and final examinations. - Students must refrain from plagiarism and other dishonest actions and behaviors. Plagiarized cases will be filed to the disciplined committee.
4. Examination Rules	ESU Examination rules apply.