MGT 878 – Decision Analysis
Course Syllabus

CONTACT INFO

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COURSE INFO

Time: Monday, Wednesday 1:00-2:20pm
Location: School of Management, 135 Prospect Street, Room A48

COURSE DESCRIPTION

When faced with a complex, uncertain problem, how does one make a good decision? As a normative science, decision analysis provides a logical framework for structuring and evaluating a decision scenario, with the goal of obtaining clarity of action. This framework involves formulating creative alternatives, characterizing uncertain events, and incorporating the decision-makers values and preferences. This course introduces a set of coherent tools used for framing problems and performing logical analyses, and provides a foundation for decision-analytic modeling in Excel. Topics covered include decision trees, influence diagrams, value of information, sensitivity analysis, risk preferences, and Monte Carlo simulation.

COURSE OBJECTIVES

This course aims to improve your understanding of quantitative decision-making for management. Specifically, the course objectives are to:

- Develop an understanding of how quantitative tools and analysis may lead to improved decision-making.
- Improve your quantitative reasoning ability.
- Increase your facility with spreadsheets.

GRADING POLICY

Homework + Final exam (take-home) – 50%
Case study (group project) – 30%
Class participation – 20%

REQUIRED MATERIAL

- Students should purchase a course packet, which includes chapters 3, 11, 12 of "Making Hard Decisions" (2004 edition) by Robert Clemen and Terence Reilly.
- Students will receive a free copy of DecisionTools Suite, including PrecisionTree and @Risk, which are Excel add-ins for constructing decision trees and performing Monte Carlo simulations. http://www.palisade.com/decisiontools_suite/default.asp
- Additional readings are given below and will be posted on Classes v2.

Date	Topic	Reading	Homework
Mon, Oct. 26	What is a good decision?		
Wed, Oct. 28	Framing decisions: alternatives, information, and preferences	"Judgment under Uncertainty: Heuristics and Biases" by Tversky and Kahneman	
Mon, Nov. 2	Decision trees	"Decision Trees" by Greenwood and White	
Wed, Nov. 4	Solving decision trees	MHD Chapter 3	**Homework 1 due**
Mon, Nov. 9	Influence diagrams		
Wed, Nov. 11	Probability encoding, risk preferences		**Homework 2 due**
Mon, Nov. 16	Value of information	MHD Chapter 12	
Wed, Nov. 18	Deterministic sensitivity analysis, tornado diagrams		**Homework 3 due**
Mon, Nov. 23	In-class exercise: Freemark Abbey Winery	"Freemark Abbey Winery"	
Thanksgiving Break!			
Mon, Nov. 30	Monte Carlo simulation – defining distributions	MHD Chapter 11	**Homework 4 due**
Wed, Dec. 2	Monte Carlo simulation – conducting analysis		
Mon, Dec. 7	Group presentations	Case study (TBD)	**Group assignment due**
Wed, Dec. 9	Decision quality, class summary		
Take-home final due Mon, Dec. 14 at 5:00pm			