SYST 573/OR 681
Decision and Risk Analysis
Spring 2008

Instructor: Dr. Andrew Loerch

Office: Science and Tech II, Room 119

Phone: (703) 993-1657 (O)

E-mail: aloerch@gmu.edu

Office Hours: Before or after class, or by appointment

Text: Making Hard Decisions with DecisionTools, by Clemen and Reilly
Software: Logical Decisions for Windows, plus the software that comes with the text

Description: The intent of this course is to provide a modern perspective on analytical methodologies to support decision making. Decision analysis offers a set of structured procedures that assist decision-makers in structuring decision problems and developing creative decision options, quantifying their uncertainty (this includes combining available statistics with expert judgments, and their own beliefs to arrive at estimates of the probabilities of various outcomes), quantifying their preferences (this includes structuring their value tradeoffs and examining their attitude towards risk), combining their uncertainty and preferences to arrive at "good" decisions. This course provides an introductory treatment of decision analysis. The intended participants are students who want to learn more about decision making under uncertainty and tools that can be used to support it. Other information.

Topic	**Reading Assignment***
Introduction	Read Chapt.1
Review of Probability	Read Chapt. 7
Value Focused Thinking	Read Handout and Chapt. 6
Value Functions and Weight Elicitation Weights)	AHP Read Chapt. 4 pg 142-143, 614-621 (Assessing
Decisions Under Uncertainty	Read Chapt. 3
Influence Diagrams	Read Chapt. 3
Utility Functions	Read Chapt. 15, 16
Sensitivity Analysis	Read Chapt. 5

* Homework sets will be assigned on a weekly basis from appropriate problems in the textbook and on handouts.

Grading:

Midterm	30%
Final Exam	30%
Project	30%
Class & Homework	10%
	100%