

GEORGE MASON UNIVERSITY
Systems Engineering & Operations Research

SYST 573 / OR 681

Decision and Risk Analysis
Fall 2011

Course Instructor: Dr. Daliborka Stanojević
Email: dstanoje@gmu.edu
Office Hours: By appointment
Engineering Building 2248
Online Chat: Tuesdays 5:30 PM - 6:30 PM and by appointment
Course Meeting Times: Wednesdays 4:30 PM - 7:10 PM
Nguyen Engineering Building 1110

Course Text: Making Hard Decisions with DecisionTools, Second Edition, Robert L. Clemen & Terence Reilly, South-Western, 2001. ISBN-13: 9780495015086

Course Software: Logical Decisions for Windows, Analytica & software on the CD that comes with the text.

Course Web Page: <http://mymason.gmu.edu> - The Blackboard web site will be used for course related communications, so please make sure that your GMU email address is up to date.

Course Description: The intent of this course is to provide an introduction to analytical methodologies and corresponding software tools that can be used to support and improve the decision making process. The course combines all key elements of decision analysis: from structured development of decision alternatives and consideration of the underlying uncertainties and user preferences to specific analytical techniques and software tools that can be used to enhance and expedite the decision making process. Prerequisites for this class are knowledge of the fundamental elements of probability and a general graduate-level maturity in applied mathematics.

Class Policies: Each student is expected to read the assigned material before class for a given day and be prepared for a meaningful class discussion. There will be four graded homework assignments that will account for 10% of the course grade. Additional homework assignments will be provided throughout the semester, but not collected. It is strongly recommended that all assignments are completed, as the assignments are designed to enforce the knowledge gained in the course and provide proper preparation for the midterm and final exams. Graded homework assignments will be posted on the Blackboard and due two weeks after the posting of the assignment. No late work will be accepted. Each student (individually or in a team of up to three students) is expected to prepare and present a class project related to one of the class topics. This class project will account for 30% of the course grade.

Exam Policies: There will be two closed book exams: one midterm exam and the final exam. No make-up exams will be given without a valid excuse that is in accordance with university policy.

Grading: The course grade will be determined based on the total score received on exams, assignments and class discussions. The score weights are as follows:

Class Project	30%
Homework assignments	10%
Midterm Exam	30%
Final Exam	30%
Total	100%

Final grades will be determined based on the final total score using the following policy.

Total Score	Grade
89.5% - 100 %	A
79.5% - 89.4 %	B
69.5% - 79.4 %	C

Grade pluses and minuses will be determined at the end of the semester.

Academic Integrity: GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification.

Special Needs: If you are a student with a disability and you need academic accommodations, please see the instructor and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS. <http://ods.gmu.edu>

Tentative Course Schedule (Subject to Change)

Class	Date	Topic	Text Reading
1	Aug-31	Introduction & Review of Probability Theory	Chapter 1 Chapter 7
2	Sep-7	Value Focused Thinking & Elements of Decision Problems	Handout & Chapter 6 Chapter 2
3	Sep-14	Structuring Decisions	Chapter 3
4	Sep-21	Structuring Decisions	Chapter 3
5	Sep-28	Making Choices	Chapter 4
6	Oct-5	Making Choices	Chapter 4
7	Oct-12	Project Progress Report & Review for the Midterm Exam	
8	Oct-19	MIDTERM EXAM (covering classes 1-7)	
9	Oct-26	Utility Functions	Chapter 15
10	Nov-2	Utility Functions	Chapter 15
11	Nov-9	Multiattribute Models	Chapter 16
12	Nov-16	Multiattribute Models	Chapter 16
13	Nov-23	Thanksgiving Recess	University Closed
14	Nov-30	Sensitivity Analysis	Chapter 5
15	Dec-7	Project Presentations & Review for the Final Exam	
16	Dec-14	FINAL EXAM (covering classes 1-15)	