SYST 542, Section 001 and 623 – Decision Support Systems Engineering, Fall 2011

SYLLABUS

Instructor:	Dr. Harold Camp
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Office Hours:	7:30 PM to 8:30 PM Monday & Thursday Jazzman Café, Fairfax 1230 PM to 130 PM Tuesday Rick's Café – Woodbridge Others by appointment
Course Description:	This course studies the design of computerized systems to support individual or organizational decisions. The course teaches a systems engineering approach to the decision support systems (DSS). This course studies factors leading to effective computerized support for decision making, characteristics of tasks amenable to computerized support, basic functional elements of a decision support system, the decision support lifecycle, and factors leading to successful integration of a DSS into an organization. Additional topics include support for multi-person decisions, support for distributed decision processes, support for time-critical decisions, and how to refine and improve an organization's DSS development capability. A DSS is built on a theory (usually implicit) of what makes for successful decision support in the given context. Empirical evaluation of the specific DSS and underlying theory should be carried on throughout the development process. The course examines some prevailing theories of decision support, considers the issues involved in obtaining empirical validation for a theory, and discusses what if any empirical support exists for the theories considered. Students design a DSS for a semester project.
Text:	*"Intelligent Decision Support Systems; Foundations, Applications and Challenges"*, Jatinder N.D. Gupta, Guisseppi A. Forgionne, Manuel Mora T., Springer-Verlag, LTD, London, 2010. ISBN-13: 978-I-84996-562-0, e-ISBN: 978-I-84628-231-7 *"How to Solve It – A New Aspect of Mathematical Method"*, George Polya, Princeton University Press, 2nd Edition, 1973, # ISBN-13: 978-8120318885
Further Reading	*Decison Support Systems*, George Marakas, Prentice-Hall, 2003 *Decision Support Systems and Intelligent Systems*, Ephraim Turban and Jay Aronson, Prentice-Hall, 2005. *Making Hard Decisions Second Edition*, Robert Clemen, Duxbury, 1996 *Decision Support Systems Hyperbook*, Power, D.J., accessed August, 2006 at http://dssresources.com
Grading:	25% - Group Project 20% - Mid-Term Exam 30% - Final Exam 25% - Group Assignments

Examinations:

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MidTerm and Final Exams are intended to evaluate the student's knowledge of and ability to apply the information and techniques discussed in the readings and lectures. Be prepared to solve problems by applying the information and techniques discussed in class in concise, intelligible English. You will be expected to apply the material of the course, not to repeat it via rote memory. The examinations are intended to enhance the student's classroom experience and challenge the student to correctly apply the course material.

Project:

The majority of effort toward the Group Project and Group Assignments will be expended outside of class. However, one should not minimize the importance of the in-class. Each Group will be asked to implement a DSS and to make decisions for a system and its project. In addition, Groups will be asked to prepare a synopese of examples from section II of the textbook

Assigned Work for Credit within Groups:

Students are assigned to Groups. Please turn in only one Homework Report with all the names of the individuals who contributed to the report. Caution: one who relies on a Group and does not learn for him/herself probably does not perform well on the examinations.

Policies & the Honor Code

Assignments in this course represent Group work, as does most engineering efforts in the real world. Students are required to participate actively in Group work and to be able to reproduce similar results on the Mid-Term and Final Exams. As always the GMU Honor Code holds. Stated in English, do your work yourself, and contribute to the Group your maximum effort. If you need help, see the instructor.

See: http://www.gmu.edu/catalog/apolicies/#Anchor12

Attendance Policy

Students are expected to attend each class, complete any required preparatory work, and participate actively in lectures, discussions, and group exercises. Students with special needs/disabilities should inform the instructor the first week of classes.

Departmental policy requires students to take exams at the scheduled time and place, unless there are truly compelling circumstances supported by appropriate documentation. Except in such circumstances, failure to attend a scheduled exam will result in a score of zero.

Please note, the classroom is a dynamic environment in which System Engineering is not only taught, but practiced. Every attempt will be made to adhere to the schedule. Lectures are intended to supplement and expand on the textual material, not repeat the reading assignment. Therefore, the wise student will read and attend lectures, seeking opportunities to apply the knowledge from both sources.

CLASS SCHEDULE

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Week	Topics	Reading (Before Class)
1	Introduction, Four Systems, and Group Assignments	
2	The Nature of Decision Making, Taxonomies, Definitions, etc.	
3	Decision Management Strategies, Design of Decision Support Systems	
4	Foundations: Multicriteria Model for Decision Support Systems	**Chapter 1, 2**
5	Artificial Intelligence and Decision Support Systems	**Chapter 3**
6	Knowledge Discovery, Computational Intelligence, Perspective on Design	**Chapter 4, 5**
7	Development Process for IDSS, Group Project Review	**Chapter 6, 7**
8	Mid-Term	
9	Applications: Assignment of Group Responsibilities, Collaborative Decisions	**Chapter 16**
10	Comparison Shopping, B2B Electroinc Commerce, Just-in-Time	**Chapter 8, 9, 10**
11	Regional Aquaculture Planning, Rental Bus Scheduling, Mobile Business	**Chapters 11, 12, 13**
12	Public Decision-making, e-Negotiation, Railway Decision Support	**Chapters 14, 15, 17**
	THANKSGIVING, NO CLASS	
13	Trends	**Chapters 18 -- 24**
14	Review and Project Final Reports	
15	**Final Exam**	