IFSM 603 - Fall 2003
Decision Making Support Systems

Instructor: Dr. Dongsong Zhang, Department of Information Systems
Class time: Wednesday..........4:30pm- 7:00pm
Class location: PHYS 201
Office: ITE Building Room 445
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Class Website URL: **http://blackboard.umbc.edu**
Office Hours: Wednesday 10:00am – 12:30pm (Other time by appointment)

Course Description

The course aims to provide a broad review of decision-making concepts, as well as technologies and systems that are developed to support the process. It covers the fundamental concepts for decision making process, computer support for management, decision models, a variety of decision support technologies and systems (including artificial intelligence, data warehouse and data mining, group decision support), and issues in system design and integration in support of decision making.

Prerequisites: graduate standing or permission from the instructor.

Course Objectives

The primary objective of the course is to overview decision technology systems and their role in business and professional organizations. Specific goals will be to study:
  (1) Fundamental concepts of decision making process
  (2) Basic components of a decision support system
  (3) Technologies that have been used to support decision making
  (4) Types of information systems designed to support decision making
  (5) System design and implementation issues

Learning Objectives

  (1) Understand the nature of decision making in support of management
  (2) Identify the computer support available for management
  (3) Understand the components of a decision support system
  (4) Identify a variety of decision technology systems
  (5) Design and develop decision technology systems
  (6) Manage the design and implementation process

Required Textbook

George M. Marakas. Decision Support Systems in the 21st Century. Second Edition, Prentice-Hall, Inc., 2003.

Reference Textbook

Holsapple/Winston. Decision Support Systems. The Thomson Learning Custom Publishing, 2001. ISBN: 0-324-03578-0.

Class Format

This course will use in-class lectures as the primary learning format. Lectures are on every Wednesday from 4:30pm to 7:00pm and will typically take the form of presentation of theoretical materials and class discussion. We will also use this time to get periodic updates from teams on the progress of their projects so all class members can share successes and challenges of each team.

It is very important to read the assigned material before attending class. I strongly encourage students to come to the class and participate actively in class discussions. Such participation brings additional perspective to classroom discussion and ideally makes the lecture and lab time more interesting for all participants.

I expect that we all show mutual respect for each other in the learning process during lecture and labs. In this context, mutual respect includes beginning and concluding the class on time, turning off cell phone ringers, pagers, and beepers, and allowing all members of the class to participate in dialogue without interruption or distraction. Adopting these practices is intended to minimize disruption to class discussion and dialogue and maximize the value of the class for all participants. PLEASE: no food and drinks are allowed in the class. Thanks.

Course Grading

Mid-term exam	25%
Final exam	30%
Project (Including project presentation)	40%
Class participation	5%

Grading reflects the instructor's objective judgment based on your course performance. If you have questions about a grade on an exam, please see me within one week after the grade is released.

Students may meet with me to get feedback regarding their performance throughout the

semester. It is important to understand that the grade reflects academic achievement. While I will always correct mistakes in the arithmetic computation of grades, final letter grades are not negotiable and I will not entertain challenges to final letter grades.

Exams

Exams will normally be taken in the regular classroom during the class time. <u>Make-up exams are NOT given except under extreme circumstances</u>, and only when the instructor gives permission <u>IN ADVANCE</u>.

Projects

You are required to complete a team project during the semester. Each team has no more than three students. There will be two types of projects:
- (1) DSS overview paper.

    You are expected to conduct a relatively thorough research on a particular type of decision technology system. At the end of the semester, each team should submit a research paper on a selected topic, with about 25 pages (References not included), with double line spacing and 12 font size. The paper should clearly describe the problems, the evolution of technologies in decision support systems, applications (e.g., case studies), and the challenges and possible solutions, etc.
- (2) Using information technology to support decision making

    You are required to design and implement a prototype decision support system. For example, a system that uses machine learning techniques to automatically predict the trend of stocks for investment decisions, or identify the potential online customers for e-commerce marketing, or a system in support of dynamic production plan. At the end of the semester, you are expected to demonstrate a workable prototype system and write a technical report about the system.

You are expected to form a project team by your own **before Sept. 12**. Each student should actively participate in the project. Once a project team is created, the team members should decide which type of project you would like to work on. Although the instructor will provide a list of potential topics for each type of project, it is your decision on which topic/system your want to focus/develop, as long as it fits in the context of the course. A discussion with the instructor in advance may help you determine an appropriate scope and objective of your proposed topic.

There are several deliverables for the project:
- (1) 5:00pm, Sept. 12: Each project team should send an email to the instructor, informing the names and emails of each team member in your group. In order to help better understand of subject matters discussed in the class and share the knowledge, each team, in addition to the course project and presentation, should choose one lecture topic from Sept. 24 – Nov. 19, find two recent relevant papers (applications or case studies), and present in the class. Therefore, in this email,

you also need to specify your top two preferences. Each topic will have at most two groups. As a result, the determination of the class presentation topics will be on a first-come, first-serve basis.)

(2) Oct. 8, collected in the class: Each team should submit a two-page project proposal (preferably two) (1.5 line-spacing, 12 Font size), providing a brief description of the topic that you are trying to address. You need to explain why this topic is worthwhile to be investigated. Your proposal, along with instructor's feedback, will be returned in the following week. The proposals will be collected at the beginning of the class.

(3) 5:00pm, Dec. 11: Final project paper is due. Every paper MUST be submitted in a folder, **along with the previous proposal(s)**, and it should look professional (i.e., neatly typed, well written, free of typos, and organized into logical sections). For the type-II project teams, a floppy disk or CD should be enclosed with your technical report.

Fall 2002 Important Dates of University

September 24: the last day to drop without a "W" and the last day to change grading to "audit".

Nov.5: last day to drop or change from regular to p/f or to change from audit or p/f to regular grading with permission.

Dec. 9 (Tuesday): the last day of classes and the last day to withdraw.

December 18: Commencement

Statement on Academic Integrity

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty and integrity. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty and they are wrong. The instructor takes academic integrity very seriously. Academic misconduct will result in disciplinary consequences including getting zero in an exam, failure of the course, suspension or dismissal. Acts of Academic Misconduct are defined as the following:

- **Cheating:** Knowingly using or attempting to use unauthorized material, information, or study aids in any academic exercise.
- **Fabrication:** Intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- **Facilitating Academic Dishonesty:** Intentionally or knowingly helping or attempting to help another commit an act of academic dishonesty.
- **Plagiarism:** Knowingly representing the words or ideas of another as one's own in any academic exercise, including works of art and computer-generated information/ images.

To read the full policy on academic integrity, consult the UMBC Student Handbook, Faculty Handbook, or the UMBC Policies section of the UMBC Directory.

Tentative Class Schedule

Date	Topic	Due Dates
Aug. 27	Syllabus and Introduction	
Sept. 3	Management and Decision Making	
Sept. 10	Basic Concepts of DSS	
Sept. 17	Modeling and Analysis in DSS	
Sept. 24	Technology in Decision Making Design, Development, and Evaluation of DSS	
Oct. 1	Executive Information Systems and Supply Chain Management	
Oct. 8	AI History and Fundamentals of Intelligent Systems	**Project proposal**
Oct. 15	**Mid-term Exam**	
Oct. 22	Expert Systems and Logics (1)	
Oct. 29	Expert Systems and Logics (2)	
Nov. 5	Group Decision Support Systems	
Nov. 12	Data Mining	
Nov. 19	Neural Networks for Decision Support	
Nov. 26	Information Retrieval / **Course Project Presentation (1)**	
Dec. 3	**Course Project Presentation (2)**	
Dec. 11	**Final Exam**	

Examples of project topics:

Type I: Overview papers:

1. Data mining in support of enterprise decision making
2. Web-based decision support systems
3. Effectively managing knowledge within decision support systems
4. Cross-cultural effect in group decision support systems
5. Decision support systems for healthcare

Type II: Using information technology to support decision-making:

1. A neural network approach to predicting stock trend/auction price
2. Information collection from the Web using intelligent agent technology
3. A meta-search engine for information seeking and aggregation
4. A DSS for loan Approval
5. Production Scheduling

Two Invited Talks:

1. Joan Worthington, Director of System Source Internet Services, Sept. 10, at 4:30 PM

2. Daryl Sirota, System Source Senior Consulting and Systems Engineer, Sept. 17, at 4:30 PM