MISY 4325
Business Decision Support Systems and Expert Systems
Fall 2011

Section 001 – 7:00pm - 9:30pm – T –OCNR 240

INSTRUCTOR: Robert Cutshall, Ph.D. OFFICE HOURS: TBA
OFFICE: 347 OCNR
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e-mail: robert.cutshall@tamucc.edu
course website: http://www.cob.tamucc.edu/rcutshall/

COURSE DESCRIPTION:
This course is a survey of decision support systems and expert systems used in business. Topics include artificial intelligence, knowledge engineering, knowledge acquisition, and expert system shells.

COURSE PREREQUISITES:
Prerequisite: MISY 3310, MISY 3330, and Junior standing or above

OPTIONAL TEXT:

COURSE OBJECTIVES:
1. You will be able to distinguish among various decision contexts and assess decision support needs.
2. You will be able to describe the generic characteristics of Decision Support Systems (DSSs) and recognize various special classes of DSS.
3. You will be able to describe the generic characteristics of Expert Systems (ESs).
4. You will have developed your own ES.

EXPECTATIONS OF STUDENTS:
1. You are responsible for all material presented in lecture and assigned readings.
2. You are responsible for completing ALL reading assignments BEFORE the material is covered in class.
3. You are responsible for turning in all assignments on time.
4. You are responsible for staying informed of assignments, meeting locations, and any changes to the syllabus announced during class time.
5. You are responsible for doing the tutorials for the ES shell that will be used this semester.
6. You are responsible for knowing and abiding by the rules and policies outlined in this syllabus.

INTERESTING EXPERT SYSTEM RELATED WEB SITE
RELATIONSHIP TO OTHER COURSEWORK:

Where MISY 2305 (Computer Applications in Business) provides for the development of hands-on computer package skills and MISY 3310 (Management Information Systems Concepts) provides the overview of all types of information systems, this course provides a comprehensive understanding of decision support systems and techniques used to build them. Knowledge about building systems in general acquired in MISY 3340 (Systems Analysis & Design) and databases in MISY 3330 (Database Management) are directly related to this course. The computer skills learned in MISY 2305 or equivalent are required to complete the assignments in this course.

INSTRUCTIONAL METHODOLOGY:

Scheduled class time will be used for lectures, student presentations, discussions and student activities. You are encouraged to ask questions and to participate in class discussions (participation, or lack thereof, WILL be noted and it WILL impact your grade) on information systems and their applications. In addition, you are encouraged to pay attention to local, national and international media coverage (print, audio-visual, etc.) on information systems topics.

EXAMS:

Your performance will be evaluated on two regular examinations. The exam formats will generally be short answer essay and/or multiple choice. Lectures, readings, class activities, and any in-class activities will be the basis of these exams. You should KEEP all of your graded exam forms until the final grades have been posted.

MAKEUP EXAMS:

Exams are not to be missed for the convenience of the student. You are expected to schedule other activities around the class exam dates. If a major exam is missed due to an excused absence, a make-up exam will be administered at a time and place agreed upon by the student and instructor. In general, make-up exams will be administered within one week of the date of the original exam. Any exam or class activity missed without a pre-approved excuse will be assigned a grade of ZERO.

TERM PAPER:

Your group will be responsible for gathering information on the topic detailed below, writing a research paper, and presenting the results of the research to the class. All papers should be typed in Microsoft Word, double-spaced throughout (except the reference section), with 1-inch margins all around, in 11 or 12 point font, and written in the APA writing style. Footnotes are not to be used in the paper and an abstract or executive summary is highly encouraged. The abstract should be a short (no more than 120 words), succinct statement of what the paper is about and what results were presented in the paper. Tables should be given consecutive numerals and meaningful captions, as should figures; both should be limited to material necessary for understanding the text. All data, direct quotations, or paraphrases should be referenced. Mathematical development and notation should be eliminated or kept to a minimum and are preferably put into an appendix. All data, direct quotations, or paraphrases should be referenced. Mathematical development and notation should be eliminated or kept to a minimum and are preferably put into an appendix. Refer to the following website for more information on the APA writing style: http://owl.english.purdue.edu/owl/resource/560/01/

The length of the paper should be between eighteen (18) to twenty-two (22) double-spaced pages. A minimum of twenty (20) journal articles should be used. Internet references are also acceptable however they will not count as part of the minimum of 20 journal articles. References should be complete to enable others to find the material that you used to complete your paper.

The group paper should be the original work of the group with citations of the work of others where necessary. ALL papers are subject to review by the plagiarism detection service Turn-it-in. ANY instance of plagiarism will result in a grade of ZERO (0) being assigned to the paper.

Plagiarism: "Plagiarism is the passing off of another person's work as one's own. The key is that a person is claiming credit for writing done by someone else. Accidental plagiarism is usually the result of poor citation or referencing or of poor preparation or a misunderstanding of plagiarism." http://en.wikipedia.org/wiki/Plagiarism. Therefore, be sure to cite any material you use.

Writing: As a professional, your written communications should be free from grammatical and spelling errors. In addition, when writing your research paper, assume that you will be submitting this material to your boss at work or even to top management. Use this as a means of practicing and improving your writing skills since this will be extremely important in your
business careers.

**Topic:** The topic will be about decision support systems (DSS) and should be broken down into the following sections.

- **Abstract/Executive Summary**
- **Introduction**

- **DSS Foundations.** e.g. DSS principles, concepts, and theories; frameworks, formal languages, and methods for DSS research; the nature of DSS; assessments of the DSS field.

- **DSS Development-Functionality.** e.g. methods, tools, and techniques for developing the underlying functional aspects of a DSS; solver/model management; data management in DSSs; rule management and AI in DSSs; coordinating a DSS’s functionality within its user interface.

- **DSS Development-Interfaces.** e.g. methods, tools, and techniques for developing the overt user interface of a DSS; managing linguistic, presentation, and user knowledge in a DSS; DSS help facilities; coordinating a DSS’s interface events with its functionality events.

- **DSS Impacts and Evaluation.** e.g. DSS economics; DSS measurement; DSS impacts on individual users, multiparticipant users, organizations, and societies; evaluating/justifying DSSs.

- **DSS Reference Studies.** e.g. emerging technologies relevant to DSS characteristics or DSS development; related studies on such topics as communication support systems, computer supported cooperative work, negotiation support systems, research support systems, task support systems.

- **DSS Experiences, Management, and Education.** e.g. experiences in developing or operating DSSs; systems solutions to specific decision support needs; approaches to managing DSSs; DSS instruction/training approaches.

- **Conclusion**
- **References**

**GRADING:**

Your grade in this course will be based on your performance on a research paper and presentation, and two exams. PERCENTAGES ARE NOT USED IN GRADING IN THIS COURSE. IF YOU WANT A PARTICULAR LETTER GRADE YOU MUST EARN THE MINIMUM NUMBER OF POINTS FOR THAT LETTER GRADE. For example, for a letter grade of “A” you must earn at least 360 points (in other words 359 points IS NOT an “A”. 359 points IS a letter grade of “B”). The distribution of points per assignment and the tentative grading scale are as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Research Paper</td>
<td>100 points</td>
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<tr>
<td>Exam 1</td>
<td>100</td>
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<tr>
<td>Exam 2</td>
<td>100</td>
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<tr>
<td>Presentation of Research Paper</td>
<td>100</td>
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<tr>
<td><strong>Total points</strong></td>
<td><strong>400 points</strong></td>
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The tentative grading scale is as follows:

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<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>360-400</td>
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<tr>
<td>B</td>
<td>320-359</td>
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<tr>
<td>C</td>
<td>280-319</td>
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<td>D</td>
<td>240-279</td>
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<td>F</td>
<td>below 240</td>
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ATTENDANCE POLICY:

Regular and punctual attendance for the full period of each class is expected. Excessive absences WILL adversely affect your grade. Attendance of all classes is expected and attendance will be checked from time to time. Should you miss a class, you are responsible for all material covered, including announcements and handouts. Any suggestions you have on how to provide the class a better learning experience are always welcome.

ETHICAL PERSPECTIVES:

The ethical perspective of decision support systems will be discussed.

GLOBAL PERSPECTIVE:

Aspects of group decision making where individuals may be dispersed around the globe will be discussed with respect to computerized support available to such scenarios.

DEMOGRAPHIC DIVERSITY PERSPECTIVES:

Issues about various decision-making styles and the available computerized support will be discussed.

POLITICAL, SOCIAL, LEGAL, REGULATORY AND ENVIRONMENTAL PERSPECTIVES:

The social impact of decision support systems will be discussed.

COB CODE OF ETHICS:

This course, and all other courses offered by the College of Business (COB), requires all of its students to abide by the COB Student Code of Ethics (available online at www.cob.tamu.edu). Provisions and stipulations in the code are applicable to all students taking College of Business courses regardless of whether or not they are pursuing a degree awarded by the COB.

STUDENTS WITH DISABILITIES:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services Office at 361.825.5816 or visit the office in Driftwood 101.

The College of Business complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. If you are registered with the Disability Services Office and would like to request accommodation, please see the instructor as soon as possible (within the first week of class).

INSTRUCTOR STATEMENT:

It is my intention to devote the time, effort, and resources to properly instruct each student, and the class as a whole, in the course subject matter and industrial applications in general. I encourage you to devote the time and effort necessary to succeed in this course.

I encourage you to attend class and participate in all aspects of the learning process.

Best wishes for your success in the class.
**CLASS SCHEDULE:**

The following class schedule has been prepared to serve as a guide for the semester. Adjustments may be made to this schedule as necessary. Examinations will cover all material indicated on the assignments below (regardless of whether or not it was discussed in class) in addition to any material covered in class lectures.

**TENTATIVE CLASS SCHEDULE***

<table>
<thead>
<tr>
<th>Date</th>
<th>Week</th>
<th>Topic</th>
<th>Assignments</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>1 (Aug 30, T)</td>
<td>1</td>
<td>Introduction to Decision Support Systems</td>
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<tr>
<td>2 (Sept 06, T)</td>
<td>2</td>
<td>Human Decision-Making Processes</td>
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<td>3 (Sept 13)</td>
<td>3</td>
<td>Systems, Information Quality and Models</td>
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<td>4 (Sept 20)</td>
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<td>Types of Decision Support Systems</td>
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<td>5 (Sept 27)</td>
<td>5</td>
<td>Decision Support Systems Concepts, Methodologies and Technologies</td>
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<td>6 (Oct 04)</td>
<td>6</td>
<td>Building and Implementing Decision Support Systems</td>
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<td>7 (Oct 11)</td>
<td>7</td>
<td><em><strong>Exam 1</strong></em>**</td>
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<td>8 (Oct 18)</td>
<td>8</td>
<td>Models in Decision Support Systems</td>
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<td>9 (Oct 25)</td>
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<td>Business Intelligence</td>
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<td>More Modeling and Analysis</td>
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<td>10 (Nov 01)</td>
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<td>Group Decision Support Systems</td>
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<td>11 (Nov 08)</td>
<td>11</td>
<td>Data Warehousing</td>
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<td>13 (Nov 22)</td>
<td>13</td>
<td>Expert Systems</td>
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<td>14 (Nov 29)</td>
<td>14</td>
<td><em><strong>Exam 2</strong></em>**</td>
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<tr>
<td>15 (Dec 06)</td>
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<td>Research Paper Presentations (20 min.)**</td>
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<td>(Dec 13, T)</td>
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<td>7:15 – 9:45pm</td>
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*This is our plan and is subject to change given notice by your instructor.

**ATTENDANCE IS REQUIRED FOR ALL PRESENTATIONS; each unexcused absence WILL result in a 30 point deduction from your course grade.