

# **CIS 4510 – Expert Systems and Decision Support**

(3 Semester Credits)

Cross listed as CAP 5605 – Introduction to Artificial Intelligence (CRN 51350) and CAP 4630 – Introduction to Artificial Intelligence (CRN 51349)

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## **Catalog Description:**

Expert systems construction and application. Use of computers in managerial decision making. Examination of problem solving and decision models in relation to the business environment. Practical application emphasizing evaluation of available systems and hands-on experience.

## **Prerequisite:**

COP 3540 - Data Structures Using OOP

## **Course Objectives/Learning Outcomes:**

Students will be able to:

- Understand the design of systems using human knowledge and/ or behavior as a basis.
- Implement these systems
- Explore traditional as well as new technologies for knowledge acquisition and representation
- Understand the ethical implications of incorporating artificial intelligence, expert, and decision systems into society
- Improve verbal and written communication via term paper and team presentation

## **Method of Teaching:**

Lecture, in-class presentations, in-class activities, and other assignments.

## **Text & materials:**

Decision Support and Business Intelligence Systems, 8<sup>th</sup> edition

Authors: Efraim Turban, Jay E. Aronson, Ting-Peng Liang, and Ramesh Sharda

Publisher: Prentice Hall

ISBN-10: 0131986600 / ISBN-13: 9780131986602

(Please read CIS Satisfactory Progress Policy at

<http://www.unf.edu/cocse/cis/CIShtml/CIScourseRepeat.html> before withdrawal)

## **Method of Evaluation:**

Exam I (30%)

Exam II (30%)

Software Demo Report (20%)

Software Demo Presentation (10%)

Class participation (10%)

Letter grades will be based on:

94 – 100 = A  
90 – 93.99 = A-  
87 – 89.99 = B+  
84 – 86.99 = B  
80 – 83.99 = B-  
77 – 79.99 = C+  
70 – 76.99 = C  
60 – 69.99 = D  
less than 60=F

**Exams:** The purpose of exams is to test your knowledge of the material discussed in the class and in the textbook. There will be 2 in class exams and no comprehensive final. Each exam will primarily test the most current material. Since the new material builds on the older material, some basic earlier material may be on the exam in comparison questions. Exams are True/False and Multiple Choice.

**Missed Exams and Makeup Exam Policies:** In fairness to the majority of students who will be doing all their work on time, there are no special makeup exam for each exam. However, valid complications due to illness, family issues, or other valid situations may cause missed class and consequently a missed exam. Only one missed exam will be accommodated through a makeup exam. If you have valid reasons to miss an exam, let your Instructor know beforehand.

### **Software Demo**

Business Intelligence (BI)/ Decision Support Systems (DSS) is a fast moving field. Ideally, everyone in the class will learn at least the rudimentary use of a set of relevant BI/DSS software through this assignment. Each group is responsible for learning and conducting a training session on a BI/DSS software package. The software will be assigned to the group early in the semester. More information is provided through separate document; look for DSS software demonstration document in BlackBoard.

### **Academic dishonesty:**

No type of academic dishonesty will be tolerated. If you are caught cheating (on the assignments) the punishment will be the most severe penalty allowed by the university policy. The policy on academic integrity and misuse of computer equipment and computer accounts found at the departmental web site at <http://www.unf.edu/cocse/cis/> applies to this course.

### **Attendance**

It is important to regularly attend the class and to participate and contribute in the class discussions. Class participation includes attendance, participation in class discussions, and overall knowledge and interest in the course materials. Class participation grade would be linked to your attendance and participation. While attendance may not necessarily be taken every day, both excessive absences and attendance would be duly noted. In case of excessive absence (<50%), will result in zero grade for class participation. In the case of extreme absence (<25%), you may be given failing grade for the entire course, as extreme absence equals to not taking the

course. If you miss a class, it is your responsibility for obtaining the material that is covered and other information provided in class. Please note that it is not possible to make up a missed class.

### Course Topics

It is expected that the student will read the chapter assigned prior to the class meetings and will have questions for the instructor on any topics the student is not sure of, or does not understand. The student is responsible for all topics presented in the text regardless of their coverage. In addition, the students will be responsible for all lecture material that is not included in the text.

| Week | Topics  |
|------|---|
| 1    | Decision Support Systems and Business Intelligence (Chapter 1)  |
|      | Decision Making, Systems, Modeling, and Support (Chapter 2)   |
| 2    | Decision Support Systems Concepts, Methodologies and Technologies (Chapter 3)   |
|      | Modeling and Analysis (Chapter 4)   |
| 3    | The Essentials of Business Intelligence (Chapter 5) and some topics from Data Warehousing (Chapter 5) and Business Analytics and Data Visualization (Chapter 6) |
|      | Software Demo 1 and 2   |
|      | Data, Text, and Web Mining (Chapter 7) and Neural Networks for Data Mining (Chapter 8)  |
| 4    | Software Demo 3, 4, 5, and 6  |
|      | Exam 1  |
| 5    | Collaborative Computer-Supported Technologies and Group Support Systems (Chapter 10)  |
|      | Software Demo 7 and 8   |
|      | Knowledge Management (Chapter 11)   |
| 6    | Knowledge Acquisition, Representation, and Reasoning (Chapter 18)   |
|      | Software Demo 9 and 10  |
|      | Artificial Intelligence and Expert Systems (Chapter 12)   |
| 7    | Advanced Intelligent Systems (Chapter 13)   |
|      | Software Demo 11 and 12   |
|      | Intelligent Systems over Internet (Chapter 14)  |
| 8    | Software Demo 13, 14, 15, and 16  |
|      | Exam 2  |

\*\*\*Please Note\*\*\*

Instructor reserves the right to modify course to meet the student's needs.

### Students with Disabilities

Students with disabilities who seek reasonable accommodations in the classroom or other aspects of performing their coursework must first register with the UNF Disability Resource Center (DRC) located in Building 10, Room 1201. DRC staff members work with students to obtain required documentation of disability and to identify appropriate accommodations as required by applicable disability laws including the Americans with Disabilities Act (ADA). After receiving all necessary documentation, the DRC staff determines whether a student qualifies for services with the DRC and if so, the accommodations the student will be provided. DRC staff then prepares a letter for the student to provide faculty advising them of approved accommodations.

For further information, contact the DRC by phone (904) 620-2769, email (kwebb@unf.edu), or visit the DRC website (<http://www.unf.edu/dept/disabled-services>).

### **Satisfactory Progress Policy**

The School of Computing enforces the "one repeat" rule for all prerequisite and core courses offered by the School for its major programs. Students who do not successfully complete a prerequisite or core requirement for a School of Computing course on the first attempt (i.e., earn a grade of D, F, W, WP or WF) will be granted one chance to repeat the course. Students who do not successfully complete a prerequisite or core requirement within two attempts will not be permitted to register for courses offered by the School in future semesters. This stipulation applies whether or not the student has declared a major in a School of Computing program.

<http://www.unf.edu/ccec/cis/CIShtml/CIScourseRepeat.html>

### **Community-Based Transformational Learning**

Community-Based Transformational Learning is about providing students with first-hand experiences that take them outside the walls of the classroom and into the community. By engaging in these activities, UNF students learn how to translate theory into practice, strengthen their sense of civic and ethical responsibility, and gain from professional and career development opportunities. In many cases, these experiences transform the lives of students.

<http://www.unf.edu/ccec/soc/cbtl.pdf>