

# Minnesota State University Moorhead

## CSIS 446: Decision Support Systems

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires all three of these prerequisites

CSIS 304 - Databases

CSIS 153 - Introduction to Computers and Programming I-b

MATH 210 - Concepts from Discrete Mathematics

Corequisites: None

MnTC Goals: None

Introduction to the concepts and tools used in the development of decision support systems, executive information systems and expert systems including the systems development process and strategy for developing such systems. Junior standing in a CSIS major is required.

**B. COURSE EFFECTIVE DATES:** 01/14/2013 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Characteristics, purpose, and modeling of DSS.
2. Optimization (analytic hierarchy process, decision tree/table, linear programming).
3. Simulation (Monte Carlo, discrete event, continuous change) .
4. Knowledge based systems (knowledge representation, expert systems, fuzzy logic) .
5. Data based systems (data warehouse, data mining, geographic information system).

### D. LEARNING OUTCOMES (General)

1. Describe the generic characteristics of a Decision Support System (DSS).
2. Understand basic DSS terminology and components of DSSs.
3. Appreciate the differences between DSSs, management information systems, and transaction processing systems.
4. Utilize various spreadsheet tools for decision support.
5. Construct and analyze an analytic hierarchy process model.
6. Construct and analyze optimization models for decision support.
7. Construct and analyze Monte Carlo, discrete event, and continuous simulations.
8. Understand knowledge management techniques that can be used in DSSs .
9. Recognize how artificial intelligence, expert systems, and neural networks integrate with DSSs .
10. Develop a prototype expert system.
11. Understand the characteristics of a data warehouse and how it differs from an operational database.
12. Perform data mining on a data warehouse.
13. Perform spatial analysis using a geographic information system.

### E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted