MISSOURI WESTERN STATE UNIVERSITY

COLLEGE OF LIBERAL ARTS AND SCIENCES

DEPARTMENT OF COMPUTER SCIENCE, MATHEMATICS AND PHYSICS
Undergraduate Program

COURSE NUMBER ***ACT 302***
COURSE NAME ***DECISION SUPPORT SYSTEMS***

COURSE DESCRIPTION

In this course, you'll learn how to use statistics to help solve business problems throughout an enterprise. You'll examine case examples of statistical analysis in areas such as marketing, finance and management. You'll learn descriptive and inferential techniques such as regression analysis and how to analyze data and reach decisions, using statistical computer software and Excel. Topics to be covered include Creating Charts, Working with Charts, Using List Features, Using Cascading Style Sheets and Templates, Working with Advanced Functions, Analyzing Data, Using PivotTables, and Working with Data Analysis Tools.

PREREQUISITES

A grade of C or higher in CSC 201.

TEXT

COURSE OBJECTIVES
Students who successfully complete this course should be able to:

1. Emphasizes problem-solving, critical thinking, and analysis to challenge students to find efficient and effective solutions to business situations.
2. Teaches students to deal not only with immediate problems, but the inevitable "what if" scenarios that occur in business situations.
3. Helps students to effectively use case problems (such as accounting, finance, marketing, and operations management) to arrive at real-world solutions.

COURSE OUTLINE

1. Applying Fundamental Excel Skills and Tools in Problem Solving
2. Solving Problems with Statistical Analysis
3. Determining Effective Data Display with Charts
4. Applying Logic in Decision Making
5. Retrieving Data for Computation, Analysis, and Reference
6. Evaluating the Financial Impact of Loans and Investments
7. Organizing Data for Effective Analysis
8. Using Data Tables and Excel Scenarios for What-If Analysis
9. Enhancing Decision Making with Solver
10. Troubleshooting Workbooks and Creating Excel Applications

COURSE TOPICS:

- Introduction to Business Analytics and Big Data
- Business Analytics Life Cycle
- Business Analytics Process, CRISP - DM, introduction to JMP
- Data concepts, review of basic statistics
- Data exploration & visualization
- Hypothesis testing, Type 1 & 2 errors
- T-test, ANOVA, Chi-Square, and correlation
- Linear Regression Analysis
- Logistic Regression
- Decision Tree
- Model comparison and evaluation
- Cluster Analysis
- Market Basket Analysis
- Technology & Tools
- Data Warehousing and OLAP concepts
- Tools & Technologies for Big Data
- Ethical Issues