

Syllabus For IST 250: Decision Support Using MS Excel



COURSE OUTLINE

Course Number <u>IST 250</u>	Course Title <u>Decision Support Using MS Excel</u>	Credits 4
Hours: lecture/Lab/Other 3/2	Co- or Pre-requisite IST 102, 109, 123	Implementation sem/year <u>Fall 2019</u>

Catalog description (as it appears in 2014-2015 edition):

[Note: All revisions to the course description in the catalog require the submission of a memo to the Curriculum Committee.]

IST 250 teaches students techniques needed to build complete Excel-based decision support systems in a highly accessible manner through numerous hands-on examples. It covers referencing and names, functions and formulas, charts, and pivot tables. The extended functionality topics include statistical analysis, the Solver and modeling, simulation, and working with large datasets. Topics also include macros, programming structures, building user interfaces, and using VBA for optimization and simulation.

Is course New, Revised, or Modified? [Modified courses are those which have a new prefix or course number]

OLD

Required texts/other materials:

Revision date:

September 13, 2019

Course coordinator:

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Information resources: (Describe the primary information resources that support the course, including books, videos, journals, electronic databases, websites, etc. To request new materials for your course, use the library request form at: www.mccc.edu/student_library_course_form.shtml)

Course Competencies/Goals:

2. Develop and apply critical thinking habits, becoming more independent, self-directed learners. (Critical Thinking)
3. Apply technology to effectively find, organize, and present ideas. (Technology)
4. Identify an information need then access and retrieve information effectively, efficiently and ethically. (Information Literacy)

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals

Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

MCCC Core Skills

Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.

Goal D. Information Literacy. Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Goal E. Computer Literacy. Students will use computers to access, analyze or present information, solve problems, and communicate with others.

Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations

The student will be able to:

- Apply referencing and names, functions and formulas, charts, and pivot tables (Course **Competencies 2,3;** **Gen Ed Goals 2 & 4;** **Core Skill D&E**).
- Use statistical analysis, the Solver and modeling, simulation, and work with large datasets (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill D&E**).
- Employ macros, programming structures (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill B, F, D&E**).
- Building user interfaces (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill B, D &E**).
- Use VBA for optimization and simulation. (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill B, D &E**).

Unit I Introduction to Decision Support Systems

Learning Objectives

The student will be able to...

- Define Decision Support System (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill B, D &E**).
- Define the set of Excel objects (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill B, D &E**).
- Enter Excel Data into Cells (Course **Competencies 3,4;** **Gen Ed Goals 2 & 4;** **Core Skill: D &E**).
- Understand Excel Menus and Toolbars (Course **Competencies 3,4;** **Gen Ed Goals 2;** **Core Skill D &E**).
- Reference cells, discuss names for cells, ranges and worksheets (Course **Competencies 2,3,4;** **Gen Ed Goals 2 & 4;** **Core Skill B, D &E**).

Unit II Functions and Formulas

Learning Objectives

The student will be able to...

- Discuss formulas and functions categories (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Apply logical and information functions (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Apply text and lookup & reference functions (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Explain date and time functions (Course **Competencies 3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Discuss mathematical and trigonometry functions (Course **Competencies 3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Apply statistical and financial functions (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Explain conditional formatting formulas (Course **Competencies 3,4; Gen Ed Goals 2 & 4; Core Skill D &E**).
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Unit III Charts and Pivot Tables

Learning Objectives

The student will be able to...

- Create charts with wizards and work with chart options (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D, E & F**).
- Create dynamic charts (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Explain pivot tables, modifications and pivot charts (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).

Unit IV Statistical Analysis with Excel

Learning Objectives

The student will be able to...

- Explain data, relationships in data and distribution (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Explain Excel Solve (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Use Excel Solver to solve mathematical programs (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Define, explain and apply simulation (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).

Unit V Working with Large Data

Learning Objectives

The student will be able to...

- Explain large data (Course **Competencies 3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Discuss import and export of data (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Create Pivot Tables from External data (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Use Excel as a database (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).

Unit VI VBA for Excel

Learning Objectives

The student will be able to...

- Discuss Visual Basic Environment (Course **Competencies 3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Record macros (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Customize and use menu options (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).
- Declare and use variables, Sub procedures and function procedures
- Work with programming structures (Course **Competencies 2,3,4; Gen Ed Goals 2 & 4; Core Skill B, D &E**).

Evaluation of student learning

Specific methods for evaluating student progress through the course are up to the discretion of the instructor. Below is an example of grade breakdown:

The final grade is based on the following values:	
Attendance and class participation	5%
2 Tests/Quizzes	15%
Laboratory & Project Assignments	50%
Midterm Exam	15%
Final Exam	15%
Total	100%

Academic Integrity Statement: [Include a statement affirming the college's Academic Integrity policy and any specific implications for the course. See <http://mlink.mccc.edu/omb/OMB210.pdf>]