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.
Other learning resources: (Describe any other student learning resources that are specific to this course, including any special tutoring or study group support, learning system software, etc.) As needed.
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).

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:

<table>
<thead>
<tr>
<th>The final grade is based on the following values:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance and class participation</td>
<td>5%</td>
</tr>
<tr>
<td>2 Tests/Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Laboratory &amp; Project Assignments</td>
<td>50%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>15%</td>
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<tr>
<td>Final Exam</td>
<td>15%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

**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]