South Central College

OTEC 1822 Microsoft Excel

Course Outcome Summary

Course Information

Description
This course prepares students to work with Microsoft Excel in a career setting or for personal use. It begins with the introduction of concepts such as creating, editing, and formatting worksheets in a uniform, attractive style. It includes inserting formulas, creating charts, and enhancing the display of worksheets of varying complexity. The course will move on to the advanced concepts and features of formatting, using functions, analyzing numerical data, and projecting outcomes to make informed decisions. Features of protecting workbooks, using macros, using pivot tables, and customizing the Excel environment are also included. Current communication needs will be met by including hyperlinks to external information, as well as importing, exporting, and sharing data. (Prerequisite: none)

Total Credits 4
Total Hours 64

Types of Instruction

Instruction Type Credits/Hours
Lecture 4/64

Pre/Corequisites

None

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Prepare an Excel Workbook

Learning Objectives
Create, save, and print a workbook
Enter data in a workbook
Use the SUM button
Enter simple functions
Use the fill handle to copy cell contents
Apply cell styles
Format cells in worksheets
Create charts
Preview and print worksheets
Use the AutoCalculate feature
Correct errors in worksheet

2. **Apply Formulas, Functions, and Formatting in a Worksheet**

   **Learning Objectives**
   
   Use flash fill
   Enter formulas using the keyboard and point mode
   Apply the MAX, MIN, and AVERAGE functions
   Verify formulas using the Range Finder
   Apply themes to workbooks
   Apply date formats to cells or ranges
   Add conditional formatting
   Format columns and rows
   Use spellcheck on worksheets
   Change margins and headers in page layout view

3. **Work with Large Worksheets, Create Charts, and Use What-If Analysis**

   **Learning Objectives**
   
   Rotate text in cells
   Copy, paste, insert, and delete cells
   Enter and format numbers and system dates
   Use absolute and mixed cell references in formulas
   Use the IF function to perform logical tests
   Create and format sparkline charts
   Change sparkline chart types and styles
   Create charts on separate chart sheets
   Use chart filters to display subsets of data in charts
   Change chart types and styles
   Freeze and unfreeze rows and columns
   Answer what-if questions
   Goal seek to answer what-if questions
   Use the Smart Lookup Insight
   Understand accessibility feature

4. **Use and Create Financial Functions and Data Tables**

   **Learning Objectives**
   
   Assign names to cells
   Determine monthly payments of loans using the financial function PMT
   Use the financial functions PV (present value) and FV (future value)
   Create data tables to analyze data in worksheets
   Create amortization schedules
   Create and format outlines and borders
   Add pointers to data tables
   Analyze worksheet data
   Protect and unprotect cells in worksheets
   Hide and unhide worksheets and workbooks
   Use the formula checking features of Excel

5. **Work with Multiple Worksheets and Workbooks**

   **Learning Objectives**
   
   Format consolidated worksheets
   Fill using a linear series
Use date, time, and rounding functions
Apply custom format codes
Create new cell styles
Copy worksheets
Copy and paste data between workbooks
Drill to add data to multiple worksheets at the same time
Select and deselect sheet combinations
Enter formulas that use 3-D cell references
Format 3-D pie charts
Save individual worksheets as separate workbook files
View and hide multiple workbooks
Consolidate data by linking separate workbooks

6. **Create, Sort, and Query a Table**

   **Learning Objectives**
   - Create and manipulate a table
   - Delete duplicate records
   - Add calculated columns to a table with structured references
   - Use the VLOOKUP function to look up a value in a table
   - Use icon sets with conditional formatting
   - Insert a total row
   - Sort a table based on one field or multiple fields
   - Sort, query, and search a table using AutoFilter
   - Remove filters
   - Create criteria and extract ranges
   - Apply database and statistical functions
   - Use the MATCH and INDEX functions to look up a value in a table
   - Display automatic subtotals
   - Use outline features to group, hide, and unhide data
   - Create a treemap chart

7. **Create Templates, Import Data, Work with SmartArt, Images, and Screenshots**

   **Learning Objectives**
   - Create and use a template
   - Import data from a text file, an Access database, a webpage, and a Word document
   - Transpose data while pasting it
   - Convert text to columns
   - Replicate formulas
   - Use the Quick Analysis tool
   - Find and replace data
   - Insert and modify SmartArt graphics
   - Apply text effects
   - Insert hyperlinked screenshots

8. **Create and PivotTables, PivotCharts, Slicers, and Trendlines**

   **Learning Objectives**
   - Analyze worksheet data using trendlines
   - Create PivotTable reports
   - Apply filters to PivotTable reports
   - Create PivotChart reports
   - Apply filters to PivotChart reports
   - Analyze worksheet data using PivotTable and PivotChart reports
   - Create calculated fields
   - Create slicers to filter PivotTable and PivotChart reports
   - Analyze PivotTable and PivotChart reports using slicers

9. **Edit PivotTables, PivotCharts, Slicers, and Trendlines**

   **Learning Objectives**
   - Edit PivotTable reports
Edit PivotChart reports
Edit slicers

10. **Use Formula Auditing, Data Validation, and Complex Problem Solving Processes**

Learning Objectives
Use formula auditing techniques to analyze worksheets
Trace precedents and dependents
Use error checking to identify and correct errors
Add data validation rules to cells
Enable the Solver add-in
Use goal seeking to solve problems
Circle invalid data on worksheets
Use Solver to solve complex problems
Use the Scenario Manager to record and save sets of what-if assumptions
Create Scenario Summary reports
Create Scenario PivotTable reports

11. **Perform Data Analysis with Power Tools**

Learning Objectives
Activate Excel's power tools
Customize the ribbon and enable data analysis
Use the Get & Transform data commands
Create queries using Query Editor
Build PivotTables using Power Pivot
Explain data modeling
Create measures
View cube functions
Use Power View
Create tiles in a Power View report
Use 3D Maps
Explain Power BI
Create hyperlinks

12. **Create and Execute Macros**

Learning Objectives
Use the macro recorder to create macros
Edit macros
Execute macros

13. **Use Visual Basic Applications (VBA), User Interfaces, and Collaboration Features in Excel**

Learning Objectives
Add and configure worksheet form controls such as command buttons, option buttons, and check boxes
Record user input to another location on worksheets
Input Visual Basic for Applications (VBA) code and explain event-driven programs
Explain sharing and collaboration techniques
Use passwords to assign protected and unprotected status to a worksheet
Compare and merge workbooks
Use digital signatures on a workbooks
Insert, edit, delete, and review comments in workbooks
Manage tracked changes in shared workbooks
Format worksheet backgrounds
Enhance charts and sparklines
Save custom views of a worksheet

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