South Central College

OTEC 1822 Microsoft Excel

Common Course Outline

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

Prerequisite 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