CTS 130 Spreadsheet

COURSE DESCRIPTION:

Prerequisites: None

Corequisites: None

This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts.

Course Hours per Week: Class, 2. Lab, 2. Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Create a simple spreadsheet in Microsoft Excel.
2. Create a chart in a spreadsheet in Microsoft Excel.
3. Apply functions/formulas in a spreadsheet in Microsoft Excel.

OUTLINE OF INSTRUCTION:

I. Course Tools (for reference only) – Microsoft Online, One Drive, Cengage MindTap, & SAM
   A. Intro to MindTap
   B. Intro to SAM
   C. Using/Completing SAM Projects and Textbook Projects
   D. Microsoft Online and OneDrive

II. Creating a Worksheet and a Chart
   A. Start an app
   B. Identify the components of the Microsoft Office ribbon
   C. Describe the Excel worksheet
   D. Enter text and numbers
   E. Use the Sum button to sum a range of cells
   F. Enter a simple function
   G. Copy the contents of a cell to a range of cells using the fill handle
   H. Apply cell styles
   I. Format cells in a worksheet
   J. Create a pie chart
   K. Change a worksheet name and sheet tab color
   L. Change document properties
   M. Preview and print a worksheet
   N. Use the AutoCalculate area to display statistics
   O. Correct errors on a worksheet
   P. Use Microsoft Office Help

III.   Formulas, Functions, and Formatting
    A.   Use Flash Fill
    B.   Enter formulas using the keyboard
    C.   Enter formulas using Point mode
    D.   Apply the MAX, MIN, and AVERAGE functions
    E.   Verify a formula using Range Finder
    F.   Apply a theme to a workbook
    G.   Apply a date format to a cell or range
    H.   Add conditional formatting to cells
    I.   Change column width and row height
    J.   Check the spelling on a worksheet
    K.   Change margins and headers in Page Layout view
    L.   Preview and print versions and sections of a worksheet

IV.   Working with Large Worksheets, Charting, and What-If Analysis List 3
    A.   Rotate text in a cell
    B.   Create a series of month names
    C.   Copy, paste, insert, and delete cells
    D.   Format numbers using format symbols
    E.   Enter and format the system date
    F.   Use absolute and mixed cell references in a formula
    G.   Use the IF function to perform a logical test
    H.   Create and format sparkline charts
    I.   Change sparkline chart types and styles
    J.   Use the Format Painter button to format cells
    K.   Create a clustered column chart on a separate chart sheet
    L.   Use chart filters to display a subset of data in a chart
    M.   Change the chart type and style
    N.   Reorder sheet tabs
    O.   Change the worksheet view
    P.   Freeze and unfreeze rows and columns
    Q.   Answer what-if questions
    R.   Goal seek to answer what-if questions
    S.   Use Smart Lookup
    T.   Understand accessibility features

V.   Financial Functions, Data Tables, and Amortization Schedules
A. Assign a name to a cell and refer to the cell in a formula using the assigned name
B. Determine the monthly payment of a loan using the financial function PMT
C. Understand the financial functions PV (present value) and FV (future value)
D. Create a data table to analyze data in a worksheet
E. Create an amortization schedule
F. Control the color and thickness of outlines and borders
G. Add a pointer to a data table
H. Analyze worksheet data by changing values
I. Use range names and print sections of a worksheet
J. Set print options
K. Protect and unprotect cells in a worksheet
L. Hide and unhide worksheets and workbooks
M. Use the formula checking features of Excel

VI.   Working with Multiple Worksheets and Workbooks
A. Format a consolidated worksheet
B. Fill using a linear series
C. Use date, time, and rounding functions
D. Apply a custom format code
E. Create a new cell style
F. Copy a worksheet
G. Drill to add data to multiple worksheets at the same time
H. Select and deselect sheet combinations
I. Enter formulas that use 3-D cell references
J. Use the Paste gallery
K. Format a 3-D pie chart with an exploded slice and leader lines
L. Save individual worksheets as separate workbook files
M. View and hide multiple workbooks
N. Consolidate data by linking separate workbooks

VII.   Creating, Sorting, and Querying a Table
A. Create and manipulate a table
B. Delete duplicate records
C. Add calculated columns to a table with structured references
D. Use the XLOOKUP function to look up a value in a table
E. Use icon sets with conditional formatting
F. Insert a total row
G. Sort a table on one field or multiple fields
H. Sort, query, and search a table using AutoFilter
I. Remove filters
J. Create criteria and extract ranges
K. Apply database and statistical functions

L. Use the MATCH and INDEX functions to find a value in a table

M. Display automatic subtotals

N. Use outline features to group, hide, and unhide data

O. Create a treemap chart

VIII. Creating Templates, Importing Data, + Working with SmartArt, Images, and Screenshots

A. Create and use a template

B. Import data from a text file, an Access database, a webpage, and a Word document

C. Use text functions

D. Paste values and paste text

E. Transpose data while pasting it

F. Convert text to columns

G. Replicate formulas

H. Use the Quick Analysis gallery

I. Find and replace data

J. Insert and format a bar chart

K. Insert and modify a SmartArt graphic

L. Add pictures to a SmartArt Graphic

M. Apply text effects

N. Include a hyperlinked screenshot

O. Use ALT text

P. Differentiate ways to link and embed

IX. Working with Trendlines, Pivot Table Reports, PivotChart Reports, and Slicers

A. Analyze worksheet data using a trendline

B. Create a PivotTable report

C. Format a PivotTable report

D. Apply filters to a PivotTable report

E. Create a PivotChart report

F. Format a PivotChart report

G. Apply filters to a PivotChart report

H. Analyze worksheet data using PivotTable and PivotChart reports

I. Create calculated fields

J. Create slicers to filter PivotTable and PivotChart reports

K. Format slicers

L. Examine other statistical and process charts

M. Create a Box and Whisker Chart

X. Formula Auditing, Data Validation, and Complex Problem Solving

A. Use formula auditing techniques to analyze a worksheet

B. Trace precedents and dependents

C. Use error checking to identify and correct errors

D. Add data validation rules to cells

E. Use trial and error to solve a problem on a worksheet
F. Use goal seeking to solve a problem
G. Circle invalid data on a worksheet
H. Enable the Solver add-in
I. Use Solver to solve a complex problem
J. Use the Scenario Manager to record and save sets of what-if assumptions
K. Create a Scenario Summary report
L. Create a Scenario Summary PivotTable
M. Draw with inking techniques

REQUIRED TEXTBOOK AND MATERIAL:

MindTap for The Shelly Cashman Series® Collection: Microsoft® 365® & Office® 2021

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