Course Learning Outcomes for Unit IV

Upon completion of this unit, students should be able to:

4. Perform fundamental data-manipulation techniques.
   4.1 Create an Excel workbook.
   4.2 Perform fundamental procedures within a spreadsheet, including selection, cut, copy, and paste.
   4.3 Apply various ways to format cells and rows.
   4.4 Demonstrate numeric and data manipulation.

Reading Assignment

Part IV, Lesson 1:
Getting Started with Excel 2013

Part IV, Lesson 2:
Creating a Worksheet in Excel 2013

Part IV, Lesson 3:
Formatting a Worksheet

Unit Lesson

Unit IV provides a practical introduction to spreadsheets and covers Microsoft Excel in particular. A spreadsheet program allows you to store large amounts of data in a tabular fashion and often includes constants, formulas, conditions, and totals or summary information. The main purpose of a spreadsheet is to aid in the decision-making process.

A spreadsheet is stored within a workbook, along with other spreadsheets or worksheets. A spreadsheet has rows and columns where information is stored. The intersection of a row and column is a cell. The columns are identified by using letters, and rows are identified with numbers. So, cell A1 would be the first cell in column A and the first cell in row 1. When you select a cell, it becomes active. When you are typing information into the spreadsheet, it is being placed in the active cell.

Spreadsheets often contain a lot of data and are difficult to view on a single screen. The split window feature allows you to divide the spreadsheet into quadrants so that it is easier to view. The new window command provides another way to more easily view large spreadsheets. Various ways of navigating spreadsheets are presented in your textbook.

It is important for you to practice using Excel as you read the assigned lessons in order to learn how to use Excel and prepare for your assessment. The new feature, Backstage view, which was introduced in 2010, has been carried over to 2013. Backstage view allows users to easily navigate the more common features of Excel, such as saving, printing, and accessing templates. Each of these features is discussed and demonstrated in the assigned reading.

Data can be added to cells by typing it in directly, by copying and pasting it into the spreadsheet, or by importing it from another application or a file. The benefit of having your data in a spreadsheet is the ability to quickly change it. This benefit is most obvious when formulas or functions are used. If your spreadsheet uses formulas or functions to calculate totals, then changes to one cell can propagate throughout your entire workbook, saving enormous amounts of time. For instance, suppose you have a workbook that contains 13 worksheets, with one for each month and one with year-end totals. Suppose a mistake was made in the bank
account balance in month 3. This type of information would most likely be passed forward to each consecutive month, so that a small change to the value in month 3 would affect totals on all of the remaining spreadsheets from months 4-12 and the grand totals. Imagine if you had to manually make all of those changes. How difficult would that be, and what are the chances that you would make a mistake? If you use formulas and set them up correctly, you would make the change in month 3 to the bank balance, and all other changes would be made automatically with no mistakes. Be sure to pay close attention to formulas in the next unit.

When you edit the contents of a cell, you are typing in the formula bar, which is between the ribbon and the spreadsheet. There are three types of data that can be entered into a cell: text, numbers, and formulas. Text entered into a cell is considered a label, and numbers are considered values. We will cover formulas in the next unit. Since the strength of Excel is its formulas, and accuracy is critical, it is very important to double check the numbers that you enter into an Excel spreadsheet. If the information going in is inaccurate, then the information coming out will be worthless. Labels help identify the numeric values. They can be used for filtering, sorting, or grouping the data. You will gain practice with these handy features in the next unit as well. In the remainder of this unit, you will gain experience with entering various types of data and formatting cells and worksheets. Dates can be entered into the cells of a spreadsheet and can even be used in mathematical calculations and formulas. Excel provides several date formats for displaying the dates in your spreadsheet. Because they are used in calculations, the formula bar will always display the date in the following format: mm/dd/yyyy, even if a different format is chosen as a display for that cell.

Excel also provides ways to more efficiently populate a spreadsheet. One such feature is the fill handle. By clicking and dragging the handle across the screen, you can quickly populate values in a series, such as dates or numbers. Be sure to read about and practice this feature. It is a wonderful timesaver. You can cut, copy, and paste in Excel, just as you do in any other application. You can select the contents of a cell, a single cell, multiple adjacent cells, or multiple non-adjacent cells. The latter choices require you to use the Ctrl or Shift keys. There are more options when pasting in Excel though, especially when you copy and paste formulas. In this unit, we will cover the basics of cutting, copying, and pasting text and numeric values. In the next unit, we will discuss performing these actions with formulas.

You may insert additional rows, columns, or cells as needed into your worksheet. A simple way to do this is to select a row or column and then right click, which will open up the context sensitive menu. You can then choose to Insert, and you will be given the options as to where and how the insert will occur. To delete the contents of a cell, you would select the cell and then press the Delete button. Then, to remove the cell from the spreadsheet, along with its contents, you would need to select it, right-click, and choose delete. The same concept applies to rows and columns as well.

Excel offers many of the same formatting features as Word. You can format the text by changing the font color, size, or style. Underline, italic, and bold commands are also available. Bulleted and numbered lists can be placed inside individual cells as well. Various alignments can be applied to individual or multiple cells. Another great way to highlight specific areas of the spreadsheet is to use borders and shading. Borders and shading can be applied to cells, rows, and columns.

Since there are many types of numeric data that can be stored in a spreadsheet, Excel offers many different ways to format numbers. There are several standard formats available, or you can create a custom format. The position of the decimal, how negative numbers are displayed, and whether or not to use a comma are all options available when formatting a number. Cells can also contain hyperlinks. You would place a hyperlink into a cell much like you would place it in a Word document. By right-clicking on the hyperlink, you can choose to remove it.

The word wrap feature instructs Excel to wrap the text within a cell so that it is easily legible. If a numeric value will not fit in a cell, then #### will display. By never showing only a portion of a number, Excel avoids displaying misleading data. If you see #### when you are working on a spreadsheet, simply widen that column or shrink the font size of the data. You can also adjust the height of rows, which is measured in points. The default height of a row is 15 points. Sometimes there is data in your spreadsheet that you need for calculations, but you do not want to display it when printing or while scrolling through the sheet. You could use the Hide/Unhide feature to make adjustments to which columns or rows are visible.

Similar to Word, Excel offers several built-in styles that can be used to enhance a spreadsheet and make it more professional. You can even base the formatting and style on a condition, so that it only displays a
certain way if a condition is met. In this way, exceptions can be quickly and easily identified. The first step is to identify the conditions that you want to use to evaluate the data; for instance, you can test to see if a cell is greater than or less than a certain number or another cell. While styles apply to the selected cells, themes apply to the entire spreadsheet. Recall from your study of Word, that a theme is a collection of fonts, lines, and colors that is pre-defined in the application. Themes can also be customized if necessary. You can add headers, footers, and page numbers to spreadsheets as well.

Of course, the strength of Excel lies in its ability to calculate totals and accurately display information. The formatting is important, but the content of the spreadsheet is more critical. In the next unit, we will discuss how to use more advanced features in Excel, such as formulas, functions, and scenarios. Be sure to contact your instructor if you have any questions or concerns.

**Suggested Reading**

Learn more about this unit’s topics by researching in databases of the CSU Online Library. The following are examples of what you will find in the Academic OneFile database:


In addition to articles, the CSU Online Library offers other types of supplemental materials that will provide more information concerning this unit’s topics. For example, the following e-book is available in the CSU Online Library’s ebrary in the Computers & IT section:


**Learning Activities (Non-Graded)**

Complete the Step by Step activities throughout the reading, on your computer, as you read along with the textbook. This will provide you with the practice that you need to complete the graded assignments in this unit. *Note: Download the student data files using the instructions in the front of your textbook on page XIV.*

Complete the Knowledge Assessments and Projects at the end of the following lessons:

- Part IV, Lesson 1: Projects 1-1, 1-2, 1-5, and 1-6
- Part IV, Lesson 2: Projects 2-1, 2-2, 2-5, and 2-6
- Part IV, Lesson 3: Projects 3-2 to 3-6

Non-graded Learning Activities are provided to aid students in their course of study. You do not have to submit them. If you have questions, contact your instructor for further guidance and information.