Instructor’s Manual Materials to Accompany

EXPLORING MICROSOFT® OFFICE 2013, VOLUME 1

## EXCEL CHAPTER 1: Introduction to Excel: What Is a Spreadsheet?

### Available Instructor Resources

|  |  |  |
| --- | --- | --- |
| **Resource** | **File Name** | **Found** |
| **Student Data Files** | various | Online Instructor Resource Center |
| **Solution Files** | various | Online Instructor Resource Center  |
| **Answer Keys**  |   | Online Instructor Resource Center  |
|  Matching | e01\_answerkey\_match |
|  Multiple Choice | e01\_answerkey\_mc |   |
|  Concepts Checks | e01\_answerkey\_concepts |   |
| **Scorecards** | e01b1Tips\_scorecard | Online Instructor Resource Center  |
| **Scoring Rubrics** | e01b1Tips\_rubric | Online Instructor Resource Center  |
| **Annotated Solution File** | e01b1Tips\_annsolution | Online Instructor Resource Center  |
| Scripted Lecture (Script) | e01\_script | Online Instructor Resource Center  |
|  Scripted Lecture Solution | e01\_script\_solution |
|  Scripted Lecture Data | e01\_script\_data |   |
| **PowerPoint Presentation** | e01\_powerpoints | Online Instructor Resource Center  |
| **Testbank** | e01\_testbank | Online Instructor Resource Center  |
| **Instructor's Manual (lesson plans incl.)** | e01\_instructormanual | Online Instructor Resource Center  |
| **Assignment Sheet** | e01\_assignsheet | Online Instructor Resource Center  |
| **Prepared Exam (Chapter & App)** |   | Online Instructor Resource Center  |
|  Prepared Exam-Chap instruction | e01\_exam\_chap\_instruction |
|  Prepared Exam-Chap solution | e01\_exam\_chap\_solution |
|  Prepared Exam-Chap Data | e01\_exam\_chap\_data |
|  Prepared Exam-Chap Annotated Sol. | e01\_exam\_chap\_annsolution |
|  Prepared Exam-Chap Scorecard | e01\_exam\_chap\_scorecard |
|  Prepared Exam-App instruction | e01\_cumexam\_instruction |   |
|  Prepared Exam-App solution | e01\_cumexam\_solution |   |
|  Prepared Exam-App Data | e01\_cumexam\_data |   |
|  Prepared Exam-App Annotated Sol. | e01\_cumexam\_annsolution |   |
|  Prepared Exam-App scorecard | e01\_cumexam\_scorecard |   |
| **File Guide** | e01\_file\_guide | Online Instructor Resource Center  |
| **Instructor Resource Card** | e01\_ircard | Online Instructor Resource Center  |
| **Objective Map** | e01\_objectivesmap | Online Instructor Resource Center  |
| **Online Chapter Review** | e01\_chapt\_checklist | Companion Website for Students |
| **Grader Project** |   |   |
|  Grader-instruction | e01\_grader\_instruction | Online Instructor Resource Center  |
|  Grader-solution | e01\_grader\_solution |
|  Grader-data | e01\_grader\_data |
|  Grader-annoted. Solution | e01\_grader\_annsolution |   |
|  Grader-scorecard | e01\_grader\_scorecard |   |
| **Additional Projects (Practice & Mid Level)** |   | Online Instructor Resource Center  |
|  Additional Proj-Practice instruction | e01\_p\_addproject\_instruction |
|  Additional Proj- Practice solutions | e01\_p\_addproject\_solution |
|  Additional Proj-Practice Data | e01\_p\_addproject\_data |
|  Additional Proj-Practice Ann Sol. | e01\_p\_addproject\_annsolution |
|  Additional Proj-Practice Scorecard | e01\_p\_addproject\_scorecard |
|  Additional Proj-Mid Level instruction | e01\_ml\_addproject\_instruction |   |
|  Additional Proj-Mid Level solutions | e01\_ml\_addproject\_solution |
|  Additional Proj-Mid Level Data | e01\_ml\_addproject\_data |
|  Additional Proj-Mid Level Ann Sol. | e01\_ml\_addproject\_annsolution |   |
|  Additional Proj-Mid Level Scorecard | e01\_ml\_addproject\_scorecard |   |

### CHAPTER OBJECTIVES

#### When students have finished reading this chapter, they will be able to:

* Explore the Excel window
* Enter and edit cell data
* Create formulas
* Use Auto Fill
* Display cell formulas
* Manage worksheets
* Manage columns and rows
* Select, move, copy, and paste data
* Apply alignment and font options
* Apply number formats
* Select page setup options
* Preview and print a worksheet

### CHAPTER OVERVIEW

#### The students will be introduced to the basic concepts that provide the foundation for understanding spreadsheets.

#### The major sections in this chapter are

1. **Introduction to Spreadsheets.** Organizing, calculating, and evaluating quantitative data are important skills needed today for personal and managerial decision making. Spreadsheets can be used as the tool for this.
2. **Workbook and Worksheet Management.** Managing workbooks is accomplished by renaming, inserting, and deleting worksheets. Managing the worksheet also involves making changes to worksheet columns and rows, such as inserting, deleting, and adjusting sizes.
3. **Clipboard Tasks.** Although worksheets are generally planned before entering data, at times there is a need to move data to a different location in the same worksheet or even in a different worksheet.
4. **Formatting.** Aprofessionally formatted worksheet—through adding appropriate symbols, aligning decimals, and using fonts and colors to make data stand out—makes finding and analyzing data easier.
5. **Page Set-up and Printing.** In the workplace, it is important toprepare worksheets in case you need to print them or in case others who receive an electronic copy of your workbook need to print the worksheets.

### CLASS RUN-DOWN

1. Have students turn in Homework assignments.
2. Talk about chapter using discussion questions listed below.
3. Use PowerPoint Presentation to help students understand chapter content.
4. Demonstrate Excel 2013.
5. Run through Scripted Lectures for chapter. Give special attention to areas where students might be challenged.
6. Have students complete Capstone Exercise for Excel Chapter 1.
7. Use myitlab for in-class work or to go over homework.
8. Give students Homework Handout for next class period.

### LEARNING OBJECTIVES

#### At the end of this lesson students should be able to:

* Identify Excel window elements
* Plan worksheet design and enter and format data
* Create formulas using cell references and applying order of precedence
* Copy formulas using Auto Fill
* Display cell formulas and verify the contents of the formula
* Manage worksheets (rename, change tab color, insert and delete worksheet, move or copy worksheet)
* Insert and delete columns and rows as well as adjust column width and row height
* Select and move ranges
* Copy and paste ranges
* Apply formatting to cells containing text or numbers
* Use the Page Layout tab options
* Ensure that data will print correctly prior to printing

### KEY TERMS

**Active cell-**The current cell, which is identified with a dark green border.

**Alignment-**The position of data between the cell margins.

**AutoComplete-**Thefeature that searches for and automatically displays any other label in that column that matches the letters typed.

**Auto Fill-**Enables you to copy the contents of a cell or cell range or to continue a sequence by dragging the fill handle over an adjacent cell or range of cells.

**Border-**A line that surrounds a cell or a range of cells.

**Cell-**The intersection of a column and row.

**Cell address --**Identified by first its column letter and then its row number.

**Column width-**The horizontal measurement of a column.

**Fill color-**The background color appearing behind data in a cell.

**Fill handle-**A small green square at the bottom-right corner of a cell.

**Formula-**A combination of cell references, operators, values, and/or functions used to perform a calculation.

**Formula Bar-**This area displays the content (text, value, date, or formula) in the active cell.

**Input area-**A range of cells containing values for variables used in formulas.

**Name Box -** The area that identifies the address of the current cell.

**Nonadjacent range-**A range of cells that contains multiple ranges, such as C5:C10 and E5:E10.

**Order of precedence**-The rules that control the sequence in which Excel performs arithmetic operations (also called order of operations).

**Output area-**A range of cells containing results based on manipulating the variables.

**Range-**A rectangular group of cells.

**Row height-**The vertical measurement of a row.

**Semi-selection-**A process of selecting a cell or range of cells for entering cell references as you create formulas. Semi-selection is often called pointing.

**Sheet tab-**The area at the bottom of the Excel window that displays the name of a worksheet within a workbook.

**Spreadsheet-**An electronic file that contains a grid of columns and rows used to organize related data and to display results of calculations, enabling interpretation of quantitative data for decision making.

**Text-**Worksheet data that includes letters, numbers, symbols, and spaces.

**Value-**A number that represents a quantity or an amount.

**Workbook-**A file containing related worksheets.

**Worksheet-**A spreadsheet that contains formulas, functions, values, text, and visual aids.

**Wrap Text-**The formatting that enables data to appear on multiple lines within the current cell.

### DISCUSSION QUESTIONS

* What is an Excel workbook? What is an Excel worksheet? What is a spreadsheet?
* Explain the difference between a formula and a function.
* Give an example of a spreadsheet application where it would be necessary to have more than one worksheet.
* When you move your mouse pointer across a cell, it changes to various shapes. What shapes does it change to? What tasks do the various shapes represent?
* There are several types of formatting that can be done in a spreadsheet. Give some reasons why you might want to change formatting in some cells in the spreadsheet.

### WHEN USING SCRIPTED LECTURE IN CLASS, DEMONSTRATE HOW TO:

* Enter and edit cell data (text, values, date)
* Use symbols and the order of precedence
* Use Auto Fill
* Display cell formulas
* Rename a worksheet and change color of tab
* Insert and delete rows and columns
* Change width of a column
* Hide/Unhide columns and rows
* Select a range and copy and paste it to a new location
* Print a worksheet

### CONNECTIONS PRACTICAL PROJECTS AND APPLICATIONS

* Develop a worksheet to keep track of expenses by category.
* Develop a worksheet to record sales and identify trends.
* Develop a personal gradebook to keep track of points earned in a class.
* Develop a worksheet to note statistics for an athletic team.

### TEACHING NOTES

#### Introduction to Spreadsheets

*The ability to organize, calculate, and evaluate quantitative data is one of the most important skills needed today.*

1. Effective Workbook and Worksheet Design
	* Review the steps necessary in designing a workbook and a worksheet.
	* **Teaching Tips**: Use examples to show the difference between the input area and the output area of a worksheet.
	* **Teaching Tips**: Always document the worksheet as much as possible so meaning and content is clear.
2. Exploring the Excel Window
* Identify the screen elements of Excel.
	+ **Teaching Tips:** Use the mouse pointer to identify the screen elements of the Excel Window.
1. Entering and Editing Cell Data
* Make sure to state the purpose of the worksheet and decide which inputs and outputs are needed to achieve the purpose of the worksheet.
* Enter the labels, values, and formulas, followed by formatting the numeric values. It is advised to format the descriptive titles and data labels so that they stand out.
* Document the workbook as thoroughly as possible.
* **Teaching Tips:** To improve productivity, use the number keypad (if available).
	+ **Teaching Tips:** Editing can be done at the time that content is entered in the worksheet or can be done later.
	+ **Teaching Tips:** If a long text label does not fit well in a cell, you can insert a line break to display the text label on multiple lines within the cell. To insert a line break while you are typing a label, press Alt+Enter where you want to start the next line of text within the cell**.**

#### Mathematics and Formulas

*Formulas transform static numbers into meaningful results that can update as values change. You can use formulas to help analyze how results will change as the input data changes. With spreadsheets you can change the value of your assumptions or inputs and explore the results quickly and accurately.*

1. Creating Formulas
	* Start a formula by typing the equal sign (=) followed by the arithmetic expression.
* **Teaching Tips:** Excel performs mathematical calculations left to right in this order (based on order of precedence): Parentheses, Exponentiation, Multiplication or Division, and finally Addition or Subtraction. You can change the order of operations by using parentheses.
* **Teaching Tips:** Use cell references instead of values in formulas where possible.
* **Teaching Tips:** Use semi-selection to create a formula. This is often called pointing because you use the mouse pointer to select cells as you build the formula.
1. Using Auto Fill
	* Auto Fill enables you to copy the contents of a cell or range of cells by dragging the fill handle (small green square appearing in the bottom right corner of the active cell).
	* Auto Fill can be used with formulas and it can be used to complete sequences.
	* **Teaching Tips:** Sequences that can be completed include months, quarters, weekdays, and numbers when you specify two values.
	* **Teaching Tips:** You can double-click the fill handle to quickly copy a formula down a column. Excel will copy the formula in the active cell for each row of data to calculate in the worksheet.

C. Displaying Cell Formulas

* + Excel shows the result of the formula in the cell but there are times when it is necessary to display the formulas instead.
	+ **Teaching Tips:** Press Ctrl and the grave accent (`) key, also referred to the tilde key, in the top-left corner of the keyboard to display formulas. To hide the formulas and display the results again, repeat the preceding process.

#### Workbook and Worksheet Management

#### When you start a new blank workbook, the workbook contains one worksheet named Sheet1 but you can add more worksheets. Worksheets are effective in organizing your data by some category or timeframe. Rows and columns can also be added or deleted in a worksheet.

1. Managing Worksheets
	* Tab names of the worksheets should reflect the content of the worksheet.
	* **Teaching Tips:** The color of a worksheet tab can be changed to make the tab stand out.
	* **Teaching Tips:** Insert and delete worksheets when necessary to keep the worksheet well managed. Worksheets can also be moved or copied.
2. Managing Columns and Rows
	* When you insert or delete cells, rows, and columns, cell addresses in formulas adjust automatically.
	* **Teaching Tips:** Keep in mind that Excel inserts new columns to the left of the current column and new rows above the active row so the active cell is very important well issuing the Insert command.
	* **Teaching Tips:** Numbers appear as a series of pound signs (######) when the cell is too narrow to display the complete value. Text appears to be truncated when the cell is too narrow. Columns need to be widened when this is the case.
	* **Teaching Tips:** You can set the size for more than one column or row at a time to make selected columns or rows the same size. Drag across the columns or row headings for the area you want to format and then set the size using any method you wish.
	* **Teaching Tips:** If your worksheet contains confidential information, you might need to hide some columns and/or rows before you print a copy for public distribution. However, the column or row is not deleted.

#### Clipboard Tasks

#### Data can be moved to new locations in a worksheet or workbook by using the clipboard to copy and paste content.

A. Selecting, Moving, Copying, and Pasting Data

* While students may know the basics of selecting, cutting, copying, and pasting data in other programs such as Microsoft Word, those tasks are somewhat different when working in Excel.
	+ **Teaching Tips:** Nonadjacent ranges contain multiple ranges that are not connected in the worksheet.
	+ **Teaching Tips:** Both Paste and Paste Special can be used in worksheets to insert data. The Paste Special dialog box offers more options than the Paste menu.
	+ **Teaching Tips:** You can copy Excel data and use it in other applications, such as in Word or in a PowerPoint slideshow. It might be necessary to use the Paste Special command in these cases so you don't lose formatting.

#### Formatting

*It is important to format the worksheet after entering the data and formulas. A professionally formatted worksheet makes finding and analyzing data easy.*

1. Applying Alignment and Font Options
	* Alignment refers to how data is positioned in cells. Text aligns at the left cell margin and dates and values align at the right cell margin. You can change these formats.
	* **Teaching Tips:** The Format Cells dialog box contains additional alignment options.
	* **Teaching Tips:** You may want to place a title at the top of a worksheet and center it over the columns of data in the worksheet. The Merge and Center option is used for this. You can also unmerge cells that were previously merged.
	* **Teaching Tips:** When you need to maintain a specific column width but the data does not fit, you can use the Wrap Text option to make data appear on multiple lines by adjusting the row height.
2. Applying Number Formats
* Values have no special formatting when the data is entered. It is recommended that you apply number formats based on the type of values in a cell.
* **Teaching Tips:** It is important to learn the options available for formatting and apply the formatting before the cells containing formulas are copied using Auto Fill.

#### Page Setup and Printing

A. Selecting Page Setup Options

B. Previewing and Printing a Worksheet

* **Teaching Tips**: Before printing a worksheet you should display a preview to ensure the data will print correctly. After you make necessary adjustments, print the worksheet.

### ONLINE CHAPTER REVIEW

To find an online chapter review to help your students practice for tests, visit the Companion Web site at <http://www.pearsonhighered.com/exploring/>.

### ADDITIONAL WEB RESOURCES

1. Microsoft Excel Blog: http://blogs.office.com/b/microsoft-excel/
2. What's New in Excel 2013: http://office.microsoft.com/en-us/excel-help/what-s-new-in-excel-2013-HA102809308.aspx
3. Make the Switch to Excel 2013: http://office.microsoft.com/en-us/excel-help/make-the-switch-to-excel-2013-RZ102924304.aspx
4. Microsoft Excel Community: http://answers.microsoft.com/en-us/office/forum/excel?auth=1
5. Free Excel Tutorials: http://www.gcflearnfree.org/excel2013
6. How to Use Excel - Excel Tutorials for Beginners: http://spreadsheets.about.com/od/excel101/a/Excel\_beg\_guide.htm

### PROJECTS AND EXERCISES

|  |  |  |
| --- | --- | --- |
|  | **Data file** | **Save As** |
| Hands-On Exercise 1 | Blank workbook | e01h1Markup\_LastFirst |
| Hands-On Exercise 2 | e01h1Markup\_LastFirst | e01h2Markup\_LastFirst |
| Hands-On Exercise 3 | e01h2Markup\_LastFirst | e01h3Markup\_LastFirst |
| Hands-On Exercise 4 | e01h3Markup\_LastFirst | e01h4Markup\_LastFirst |
| Hands-On Exercise 5 | e01h4Markup\_LastFirst | e01h5 Markup\_LastFirst |
| Hands-On Exercise 6 | e01h5Markup\_LastFirst | e01h6Markup\_LastFirst |
| Practice Exercise 1 | e01p1Math | e01p1Math\_LastFirst |
| Practice Exercise 2 |  Blank workbook | e01p2May2016\_LastFirst |
| Practice Exercise 3 | e01p3TicketSales | e01p3TicketSales\_LastFirst |
| Mid-Level Exercise 1 |  Blank workbook | e01m1Receipt\_LastFirst |
| Mid-Level Exercise 2 | e01m2Rentals | e01m2Rentals\_LastFirst |
| Mid-Level Exercise 3 | e01m3Sales | e01m3Sales\_LastFirst |
| Mid-Level Exercise 4 (collaboration) |  e01h6Markup\_LastFirst | e01m4Markup\_LastFirst\_LastFirst |
| BYC Research Case |  Blank workbook | e01b2Rebate\_LastFirst |
| BYC Disaster Recovery | e01b3Proceeds | e01b3Proceeds\_LastFirst |
| BYC Soft Skills Case |  Blank workbook | e01b4Goals\_LastFirst |
| Capstone | e01c1Royalty | e01c1Royalty\_LastFirst |

### CHAPTER REVIEW/ANSWERS TO END OF CHAPTER MATERIAL

**Key Terms Matching Answer Key**

1. A **worksheet (S)** is a spreadsheet that contains formulas, functions, values, text, and visual aids. p. 374

2. A **workbook (R)** is a file containing related worksheets. p. 374

3. An **input area (I)** is a range of cells containing values for variables used in formulas. p. 377

4. An **output area (L**) is a range of cells containing results based on manipulating the variables. p. 377

5. The **Name Box (J)** identifies the address of the current cell. p. 375

6. The **Formula Bar (H)** displays the content (text, value, date, or formula) in the active cell. p. 375

7. The **Sheet tab (O)** displays the name of a worksheet within a workbook. p. 375

8. The **cell (C)** is the intersection of a column and row. p. 376

9. **Text (P**) includes letters, numbers, symbols, and spaces. p. 378

10. A **value (Q)** is a number that represents a quantity or an amount. p. 379

11. **Order of precedence (K)** is the rules that control the sequence in which Excel performs arithmetic operations. p. 385

12. **Auto Fill (B)** enables you to copy the contents of a cell or cell range or to continue a sequence by dragging the fill handle over an adjacent cell or range of cells. p. 386

13. The **Fill handle (F)** is a small green square at the bottom-right corner of a cell. p. 386

14. The **Column width (D)** is the horizontal measurement of a column. p. 398

15. The **Row height (N)** is the vertical measurement of a row. p. 399

16. A **Range (M)** is a rectangular group of cells. p. 406

17. The **Alignment (A)** is the position of data between the cell margins. p. 414

18. **Wrap Text (T)** is the formatting that enables a label to appear on multiple lines within the current cell. p. 415

19. **Fill color (E)** is the background color appearing behind data in a cell. p. 416

20. A **Formula (G)** is a combination of cell references, operators, values, and/or functions used to perform a calculation. p. 379

**Multiple Choice Answer Key**

1. What is the first step in planning an effective worksheet?

**(b) State the purpose of the worksheet**

1. What Excel interface item is not displayed until you start typing or editing data in a cell?

**(d) Name Box**

1. Given the formula =B1\*B2+B3/B4^2 where B1 contains 3, B2 contains 4, B3 contains 32, and B4 contains 4, what is the result?

**(a) 14**

1. Why would you press Ctrl+’ in Excel?

(**c) To display cell formulas**

1. Which of the following is a nonadjacent range?
**(d) A1:A10, D1:D10**
2. If you want to balance a title over several columns, what do you do?

**(b) Merge and center the data over all columns**

1. Which of the following characteristics is not applicable to the Accounting Number Format?

**(a) Dollar sign immediately on the left side of the value**

1. You selected and copied formatted worksheet data containing formulas. However, you want the pasted copy to contain the current formula results rather than formulas. What do you do?

**(c) Click the Paste arrow in the Clipboard group and select Values & Source Formatting**

1. Assume that the data on a worksheet consume a whole printed page and a couple of columns on a second page. You can do all of the following except what to force the data to print all on one page?

**(b) Increase the left and right margins**

1. What should you do if you see a column of pound signs (###) instead of values or results of formulas?

**(d) Increase the column width**