

# Microsoft® Excel: Intermediate

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*A Workshop for San Diego State University Faculty*



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## Where to Find Help When You Need It

### Help from your Division/College's Computer Consultant

Some divisions and colleges have computer consultants assigned to them. You can contact these consultants when you need help. To determine if you have a consultant assigned to your division or college, look to: <http://rohan.sdsu.edu/~facstaff>

### Help from the BATS Web Page

BATS (Baseline Access, Training and Support) is a California State University initiative to provide all students, faculty, and staff with "baseline" access to information resources via networks, training in the uses of baseline hardware and software systems, and ongoing professional and technical support for utilization of computer resources at San Diego State University. You can access the BATS Web Page by pointing your browser to:

<http://rohan.sdsu.edu/~bats/>

### Help in the San Diego State University, Faculty Room

The Faculty Room is staffed Monday through Friday with computing consultants who will try to answer your questions.

**Location:** Adams Humanities, 1109  
**Phone Number:** x45727  
**Semester Hours:** 7:30am – 6:00pm Monday -Thursday  
7:30am – 4:30pm Friday  
**Semester Intersession:** 7:30am – 4:30pm Monday – Friday

### Help from the Faculty Computing Help Line

**Phone Number:** x41348 **E-mail:** [helpline@mail.sdsu.edu](mailto:helpline@mail.sdsu.edu)  
**Semester Hours:** 7:30am – 6:00pm Monday – Thursday  
7:30am – 4:30pm Friday  
**Semester Intersession:** 7:30am – 4:30pm Monday – Friday

### Help from the Staff Computing Help Line

**Phone Number:** x40824 **E-mail:** [staffhelp@sdsu.edu](mailto:staffhelp@sdsu.edu)  
**Semester Hours:** 7:30am – 6:00pm Monday – Thursday  
7:30am – 4:30pm Friday  
**Semester Intersession:** 7:30am – 4:30pm Monday – Friday

## Microsoft Excel Intermediate

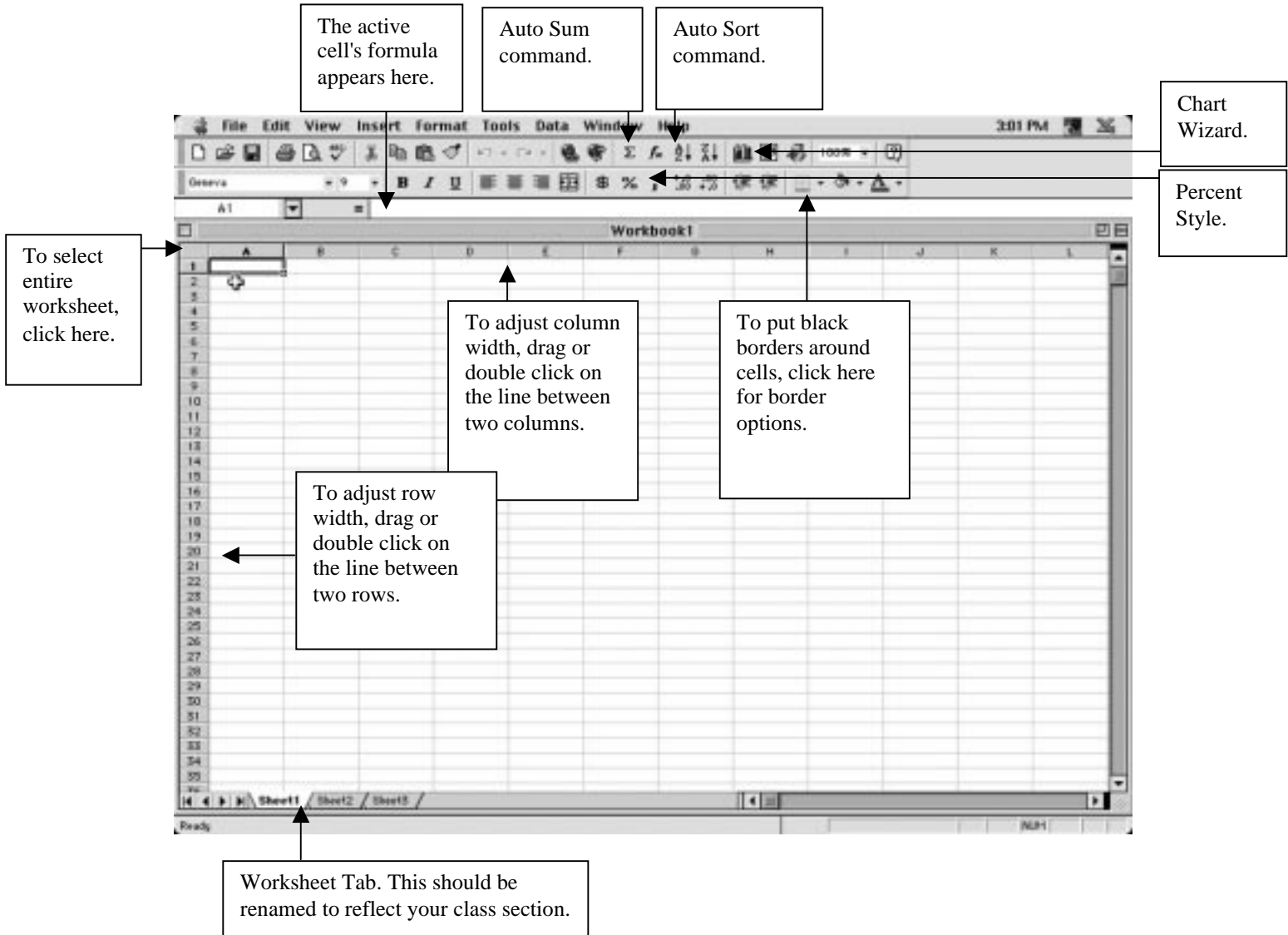
Using formulas helps you analyze data on a worksheet. Creating charts provides another means of analyzing or representing data on a worksheet. You will learn how to utilize these two features in this workshop.

### The following topics will be covered...

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## The Excel Screen

\*Note that this is a picture of the MS-Excel98 for Mac screen. The MS-Excel 97 for Windows screen is slightly different.



## The Formula Bar

When the formula bar is active, you can create a formula by typing, inserting functions, or selecting cells. Simply click in the data entry area and begin typing. Formulas always start with the = sign.



## Types of Operators

You use operators to specify the kind of mathematical operation to perform on the elements of a formula. The common types of operators used in formulas are **arithmetic operators** and **comparison operators**.

### Arithmetic Operators

These operators perform basic mathematical operations, combine numeric values, and produce results.

+	Addition	%	Percent
-	Subtraction	^	Exponentiation
/	Division		
*	Multiplication		

### Comparison Operators

These operators compare two values and produce logical values of TRUE or FALSE with these operators.

=	Equal	>=	Greater than or equal to
>	Greater than	<=	Less than or equal to
<	Less than	<>	Not equal to

## Order of Precedence

Most formula errors occur when the mathematical operators are not entered in the proper order of **precedence**. The following is the order of precedence for mathematical operations in a formula:

*, /	Multiplication, division
+, -	Addition, subtraction

You can change the order of precedence by enclosing segments of the formula in **parentheses**. Excel first performs all operations within the parentheses and then performs the rest of the operation in the appropriate order.

Note that each open parenthesis must be matched by a closed parenthesis, or Excel will not accept the formula.

## What Error Values Mean

Microsoft Excel displays an error value in a cell when it cannot calculate the formula properly. Error values always begin with a number sign (#).

Error value	Meaning
-------------	---------

#DIV/0!	Is trying to divide by zero.
#N/A	Refers to a value that is not available.
#NAME?	Uses a name that Excel doesn't recognize.
#NULL!	Specifies an invalid intersection of two areas.
#NUM!	Uses a number incorrectly.
#REF!	Refers to a cell that is not valid.
#VALUE!	Uses an incorrect argument or operand.
#####	Produces a result that is too long to fit in the cell. This is not actually an error value, but an indicator that the column needs to be wider.

## Copying Formulas

You may want to copy the same formula across a number of columns or down a number of rows.

### To Copy a Formula to Other Columns:

1. Select the **cell** of the formula you want to copy.
2. Drag the **fill handle** (bottom right corner of the cell) across the cells in which you want to copy the formula.

Excel copies the formula to the other cells and, in each column, **adjusts** the formula's references so that the formula refers to the numbers in that column.

### To Copy a Formula to Other Rows:

1. Select the **cell** of the formula you want to copy.
2. Drag the **fill handle** (bottom right corner of the cell) down through the cells in which you want to copy the formula.

## Using the AutoSum feature



When you want to quickly add the values across a row or down a column, use the **AutoSum** button.

## Using the Function Wizard

Whenever you want to use a built-in Microsoft Excel function or a custom function, you can use the **Function Wizard** to help you select a function, assemble the arguments correctly, and insert the function into your formula. The formula bar shows the changes you make as you build your formula.

## Entering Functions

Functions are predefined formulas. Excel provides more than 200 built-in functions that enable you to create formulas easily for a wide range of needs. Each function consists of the equal sign, and the function name. To enter a function in the active cell, type = (**equal sign**), followed by the **function name** (for example, SUM), followed by an **open parenthesis**. Then specify the **cell or range of cells** you want the function use,

followed by a **closed parenthesis**. When you press Enter to enter the function in the cell, Excel displays the result of the formula in the cell.

If you are not sure how a particular function works, the Function Wizard can guide you through the process of entering a function. Activate the Function Wizard by clicking the Function Wizard button and follow the instructions given.

## Creating a Chart Using the ChartWizard



A chart is a graphic representation of your worksheet data. Values from cells (data points) are displayed as bars, lines, column, pie slices, or other shapes in the chart. Data points are grouped into data series, which are distinguished by different colors or patterns on the chart.

The ChartWizard is a series of dialog boxes that simplifies creating a chart. The ChartWizard guides you through the process step by step: you verify your data selection, select a chart type, and decide whether to add items such as titles and a legend. A sample of the chart you are creating is displayed so you can make changes before you finish working with the ChartWizard.

### The Difference Between Embedded Charts and Chart Sheets

You can create an embedded chart as an object on a worksheet when you want to display a chart along with its associated data.

You can create a chart sheet as a separate sheet in a workbook when you want to display a chart by itself on a page. The corresponding data is stored on a difference sheet in a workbook. Whether you create an embedded chart or a chart sheet, your chart data is automatically linked to the worksheet you created it from. When you change the data on your worksheet, the chart is updated to reflect these changes.

## Plotting a Data Series in Rows or Columns

When you create a chart, you specify the orientation of the data – whether the data series are in rows or columns that are adjacent to each other.

## Plotting Nonadjacent Selections

Sometimes the data you are plotting is in rows or columns separated by other data, or by blank rows or columns. You can make nonadjacent selections and use them to create a chart by:

1. Selecting the **cells** in the first row or column.
2. Hold the **CTRL** (Windows) or **COMMAND** (Macintosh) key down while you make **additional selections**.

## Changing the Chart Type

Sometimes you may want to change the chart type to better illustrate your data.

To change the chart type:

1. Activate the chart by clicking on the chart image.
2. From the **Format** menu, select the **Chart Type** command.
3. Select the type of chart you want from the palette.

## **Adding Items to a Chart**

A simple chart cannot always convey information as clearly or completely as you would like. You can add information, increase visual interest, and enhance readability by adding elements such as data labels, titles, a legend, and gridlines.

### **Adding Data Labels**

To add data labels to a data point or a data series:

1. Select the point of the series.
2. From the **Insert** menu, select the **Data Labels** command.
3. In the dialog box, specify the kind of data labels you want displayed.

### **Adding a Chart Title and Axis Titles**

If you have not selected a data point or data series before choosing the command, data labels are added to all points in the chart.

### **Adding a Legend**

To add a chart title or axis titles:

1. From the **Insert** menu, select the **Titles** command.
2. Specify which titles you want to add.

You can then select each title and type the text you want to appear.

### **Adding Gridlines**

To add a legend that identifies the data series or categories in your chart: From the **Insert** menu, select the **Legend** command.

To add gridlines, which extend from the tick marks on an axis across the plot area:

1. From the **Insert** menu, select the **Gridlines** command.
2. Specify which gridlines you want: major, minor, horizontal, vertical, or a combination.

## Step-by-Step Instructions for In-Workshop Exercise

1. Rename three sheets: Department Enrollment Figures; J Danforth Enrollment; J Danforth Budget
2. Type in Headings on Department Enrollment Figures Sheet
3. Type in Classes offered by the department
4. Type in Undergrad and Grad Enrollment Figures
5. Add the number of Undergrads & Grads =B6+C6
6. Weight Grad Students by a factor of 3 =B6+(C6\*3)
7. Autosum the total number of students =SUM(D6:D12)
8. Go to J Danforth's Enrollment Sheet
- ▶ 9. Import and format (using Data, Sort) Danforth's student data from the registrar's office

## Downloading Your Roster from the Registrar's Office

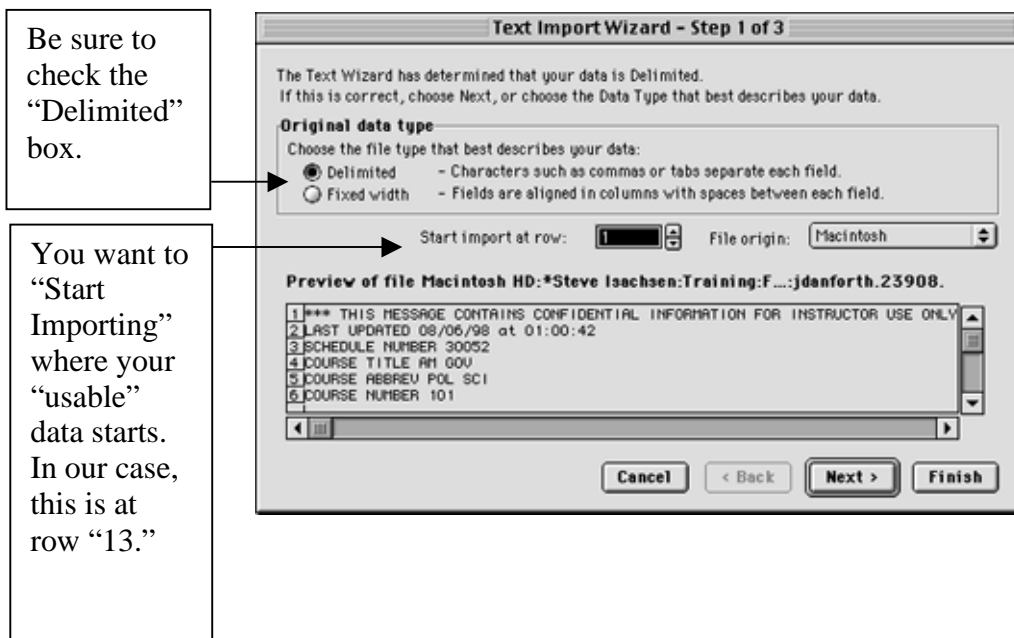
The SDSU Class Roster Program at: <http://www.anr.sdsu.edu/roster.shtml> allows Faculty and certain Staff to receive class rosters via e-mail. This service is provided by Admissions and Records for the SDSU campus. To use this service, you need an E-mail address and a WWW browser. First Time users must register to use the SDSU Class Roster service. Registered faculty can only request rosters for classes in which they are the formal instructor.

To “import” this roster into Excel, request that your roster be sent in **ASCII text**, and the file be **tab delimited**. The Registrar's Office will e-mail you a copy of your class roster. The file will come as an attachment. For the purposes of this workshop, we have created a “mock” file (jdanforth.23908) of this attachment to work with on your floppy disk.

1. Start **Microsoft Excel**.
2. Choose **File, Open**.
3. Open the file on your floppy disk, **jdanforth.23908**.

The following “Text Import Wizard” dialog box will appear.

## Text Import Wizard Box



1. Choose **Delimited**.
2. Choose **Start import at row**, Enter **13**.
3. Choose **Next**.
4. Be sure that the **Tab** box is checked under Delimiters.
5. Choose **Next**.
6. In the "Data Preview" window, use the right scroll down button until you see columns of data.
7. Select **Columns 3, 4, 5, 6, and 7**. Note that an easy way to select all 5 of these columns at the same time is to press the Shift key while Clicking on each column. This will allow you to select more than one column at a time.
8. Under general Data Format, Select **Do Not Import Column (Skip)**.
9. Choose **Finish**.

## Formatting your Imported Data

When your roster data is brought into Excel, it is unformatted. Begin by formatting the imported data.

1. Delete the rows of data, which are unnecessary to your grade sheet. These rows include data such as "letter" and "+/- letter."
2. Select these rows simultaneously on a Mac, by holding the **⌘** key when you **click**. On Windows, hold down the **Ctrl** key when you **click**.
3. Once the rows have been selected, choose **Edit** and then **Delete**. Or on a Mac, use **⌘+K**. On Windows, use **Ctrl+X**.

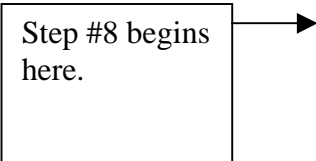
Format the width of your columns to fit the name & social security number.

1. Click the **column heading** to select the entire column. To select both columns, press the **Shift** key, while clicking **both columns** or, click on **column A**, then while holding your mouse button down, slide your **cursor to column B**.
2. Position the mouse pointer on the **right border** of the heading of the columns. The mouse pointer changes to a **double-headed horizontal arrow** when positioned properly. Drag the arrow to the **right** to increase the column width.

Note that you can tell Excel to make the column width *exactly* large enough for the largest piece of data in the column, by **double clicking** at the **double-headed arrow**.

3. Count the total number of students =COUNT(C6:C35)
4. Count the total number of Undergraduate Students =COUNTIF(C6:C35,"<5")
5. Count the total number of Grad Students =COUNTIF(C6:C35,"5")
6. Link the Undergraduate and Grad enrollments in Danforth's Class to the appropriate box on the Department Enrollment Figures Sheet
7. On Department Enrollment Figures Sheet Divide the department allocation (\$5000) by the total number of students (1000) = D15/D13
8. Figure out the individual class allocations of department funds by multiplying the total number of students in a class by the student allocation (\$5.00)  $D4 * \$D\$16$  - make absolute before filling.
9. Take Danforth's allocation (\$200) and use it as the beginning "checkbook" balance on the J Danforth Budget Sheet
10. Enter in the Headings, Dates, Descriptions and Expenses on J Danforth's Budget Sheet
11. Enter the formula which will keep the running balance =E6-D7

Step #8 begins here.



12. Calculate the average count expense using the function wizard  
=AVERAGE(D7:D14)
13. Total Danforth's Expenses using the Sum Function =SUMD7:D14
14. Enter the total expenses for each class, with Danforth's being \$175.
15. Create a chart using three columns of data: Class, Allocation, and Expense.

## **Congratulations!**

You have completed the Microsoft Excel Intermediate Workshop for Faculty and Staff at SDSU. Please feel free to contact your instructor if you have any questions on material covered during this workshop. Also, please feel free to take advantage of the help resources listed at the beginning of this handout.

## Shortcut Keys – Windows

Ctrl + N	Opens a new file
Ctrl + O	Opens an existing file
Ctrl + S	Saves a file
Ctrl + P	Prints the active document
Ctrl + F4	Exits the application
Ctrl + Z	Undoes last action
Ctrl + X	Cuts the selection
Ctrl + C	Copies the selection to the Clipboard
Ctrl + V	Pastes a selection from the Clipboard
Ctrl + B	Bold on/off
Ctrl + I	Italics on/off
Ctrl + Shift + W	Underline

## Shortcut Keys – Mac

Command + N	Opens a new file
Command + O	Opens an existing file
Command + S	Saves a file
Command + P	Prints the active document
Command + Q	Exits the application
Command + Z	Undoes last action
Command + X	Cuts the selection
Command + C	Copies the selection to the Clipboard
Command + V	Pastes a selection from the Clipboard
Command + B	Bold on/off
Command + I	Italics on/off
Command + U	Underline