Excel Intermediate: Complex Formulas and Charts

Overview: Expand your current Excel knowledge to include more complex formulas (including Year-to-Date formulas with cells from across spreadsheets), charts, naming worksheets and printing headers.

Student Skill Level: Intermediate

Requirements: Excel Basic class or familiarity with the program. Good mouse skills (ability to move the mouse on the computer screen and click or double click as required with minimal assistance).

Length: 3 hours (with a 10 minute break)

Objectives

- The student will be able to use an existing Excel workbook for the following:
  - Look at a collection tool and set up a workbook
  - Create Year-to-Date formulas across spreadsheets
  - Insert a chart based on data from a spreadsheet

Getting Information into the Spreadsheet: Practice Setting Up the Workbook

The following is a simple form that could be used to collect responses regarding workshops. How would you "translate" this paper into the Excel format? It's important to get all the data into the spreadsheet so that we can see how many workshops were done, dates, locations, etc. All of this information would be tallied so that a monthly report could be made. How would you do it?

Location Name:_____ Date:_____

Workshop Title:_____

Trainer's Name:_____

How did you advertise this class? (For example, Flyer, Newspaper, Web Site, Other?)

_____

Please comment on the following **benefits** of hosting this workshop (check the box):					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Attendees report satisfaction with program					
Booking computer training frees time for other duties					
Staff members had time to ask trainer questions and get computer assistance					
Trainer discussed future classes with staff and encouraged signup					
Interested in booking future training classes					

Please rate your **satisfaction** with the following (check the box):					
	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied
Interaction with Trainer					
Ease of Booking Computer Training					
BTOP Web Site Content - flyers, handouts, general information					
Materials & Handouts					
Overall Satisfaction with the computer training program					

Please include additional comments about this program and/or how it may have made a difference to your patrons:

Once you have the questions in the sheet, you may use **Alt+Enter** to place a "hard return" in the cells (to make them take up less horizontal space).

Where to start: What data doesn't change?

Every piece of paper is a person – and every person corresponds to a row in Excel. So, we'll put the "unchanging" data across Row 1. Please USE THE **TAB** key to move from cell to cell. We'll wrap the text so it looks right AFTER we've entered it. **START IN CELL C1.**

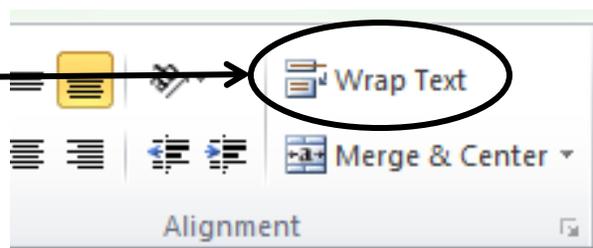| C	D	E	F	G	H	I	J	K	L	M	N
Advertise	Attendee:	Training fi	Staff mem	Trainer di:	You are in	Interactio	Easy to bo	Web Site	Materials	Overall Sa	Comments

It looks messy here, but we'll use **Wrap Text** to make it look better.

Select cells **C1 to N1** only.

fx Advertise?

C	D	E	F	G	H	I	J	K	L	M	N
Advertise	Attendee:	Training fi	Staff mem	Trainer di:	You are in	Interactio	Easy to bo	Web Site	Materials	Overall Sa	Comments

Click on **Wrap Text** in the Alignment group on the Home tab, and this is what you'll see:

Wrap Text

Merge & Center

Alignment

Jx Advertise?

C	D	E	F	G	H	I	J	K	L	M	N
Advertise?	Attendees report Satisfaction	Training frees time for other duties	Staff members asked trainer questions	Trainer discussed future classes	You are interested in future classes	Interaction with trainer	Easy to book training	Web Site	Materials and Handouts	Overall Satisfaction	Comments

Click on any blank cell on the spreadsheet to get rid of the selection (in blue). Change the column width to accommodate the words.

C	D	E	F
		Training frees	Staff members asked	T
	Attendees report	time for other	trainer question	d
Advertise?	Satisfaction	duties	s	cl

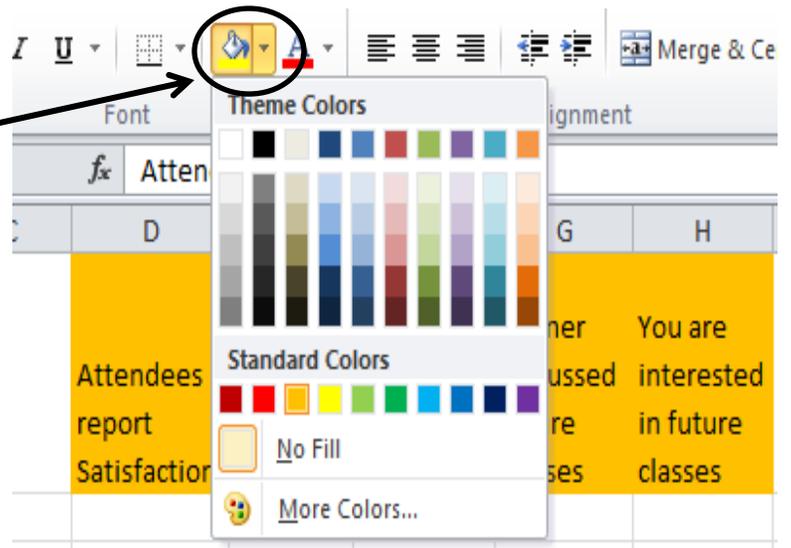| C	D	E	F	G	H	I	J	K	L	M	N
Advertise?	Attendees report Satisfaction	Training frees time for other duties	Staff members asked trainers questions	Trainer discussed future classes	You are interested in future classes	Interaction with trainer	Easy to book training	Web Site	Materials and Handouts	Overall Satisfaction	Commer

This is an example of how you may set up a spreadsheet to capture data. Next thing I would do is color-code the three separate areas of interest: **Benefits**, **Satisfaction**, and **Overall Satisfaction**.

Select the questions under **Benefits**

| D	E	F	G	H
Attendees report Satisfaction	Training frees time for other duties	Staff members asked trainers questions	Trainer discussed future classes	You are interested in future classes

Click on the **Fill Color** command and choose a color (I go for lighter colors because they're easier to read). Repeat this for **Satisfaction** and **Overall Satisfaction** cells.

D	E	F	G	H	I	J	K	L	M
Attendees report Satisfaction	Training frees time for other duties	Staff members asked trainers questions	Trainer discussed future classes	You are interested in future classes	Interaction with trainer	Easy to book training	Web Site	Materials and Handouts	Overall Satisfaction Com

** Prove It Test: Since we have two main sections, let's add a row, label them, and use the **Merge and Center** option. We will also **Freeze** the top row.

Insert a new row one by **clicking on cell A1** and clicking on the **Home Tab > Cells group >Insert > Insert Sheet Rows**
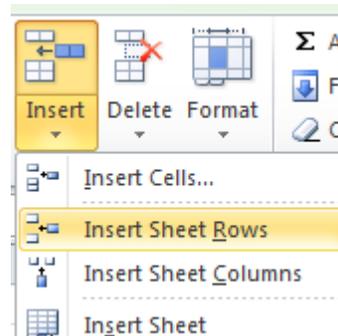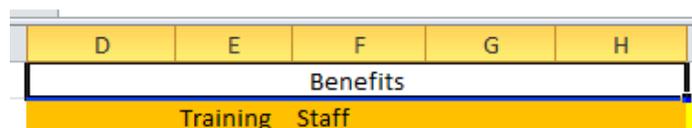

Type "Benefits" in cell D1
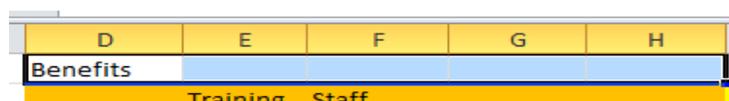
Highlight D1 to H1

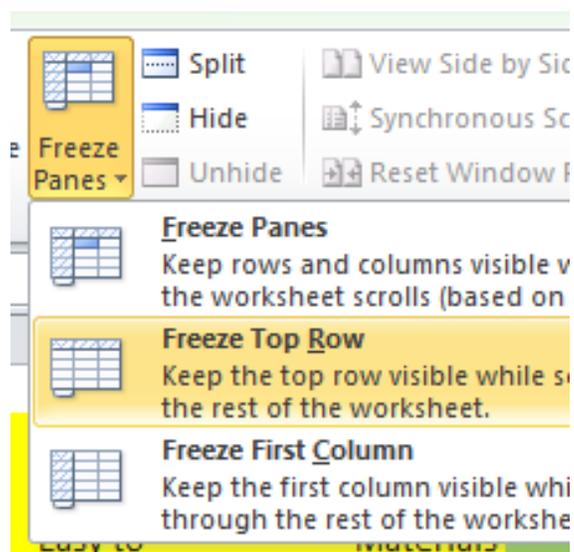To merge and center the item, click the **Home Tab > Alignment Group > Merge and Center**

Do the same for cells I1 to L1, "Satisfaction."

To freeze this row so it can be seen at all times, go to the **View Tab > Window Group > Freeze Top Row**.
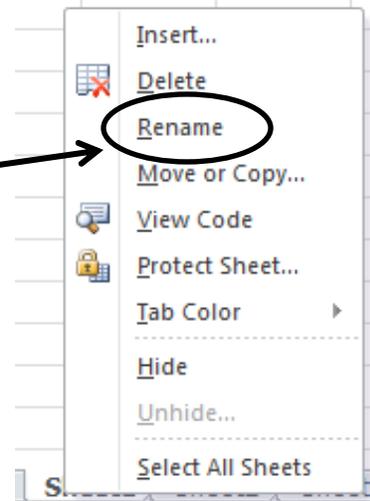
This makes the top row visible no matter how far down you scroll.

Rename and Copy Spreadsheet

Once you get a spreadsheet set up, you don't want to keep having to set it up month after month. You may **rename** it then **copy** it.

Right-click the tab (labeled **Sheet 1** here) and click on the **Rename** command.
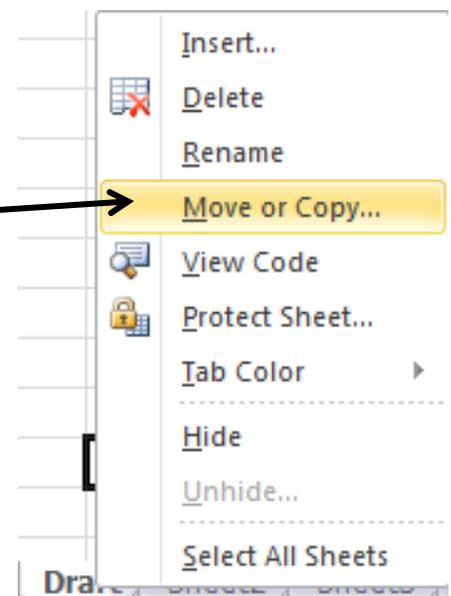
Sheet 1 will be selected (in black)

Type in **Draft** for the sheet name. This will be the generic sheet we will copy for the rest of the months.

Click once on the sheet to make the new name permanent.

Right-click again on the sheet name. This time choose the **Move or Copy** command.

Choose **before sheet: Sheet 2** and make sure you click **Create a copy**. Then click OK.

This will preserve the formatting we finished in the sheet.

…….Practice…….

Keep moving and creating copies of your generic **Month** spreadsheet. Please create spreadsheets up to June. Your workbook will look like this:

Data Entry

This is the most important, but probably most boring, part of creating the workbook. We will fill in January together, including formulas, and then we'll switch over to a finished book. Here is an example:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1			Advertise?	Attendees report Satisfaction	Training frees time for other duties	Staff members asked trainers questions	Trainer discussed future classes	You are interested in future classes	Interaction with trainer	Easy to book training	Web Site	Materials and Handouts	Overall Satisfaction	Comments
2	Word Basic													
3	BDOL	1/4/2012		5	5	5	5	5	5	5	5	5	5	
4	BDOL	1/4/2012		4	5	5	3	4	4	4	5	5	5	
5	BDOL	1/4/2012		5	5	4	4	4	4	4	4	4	4	
6	BDOL	1/4/2012		3	3	5	5	3	3	3	3	3	3	
7	BDOL	1/4/2012		5	5	5	5	5	5	5	5	5	5	
8	BDOL	1/4/2012		4	3	4	4	4	5	5	4	4	4	
9	BDOL	1/4/2012		1	1	1	5	5	5	4	4	4	5	
10														
11														
12	Excel Basic													
13	YOU	1/8/2012		5	5	5	5	5	5	5	5	5		

We will put in two formulas: a **count formula** in column **A** and an **average formula** in column **M**.

COLUMN A FORMULA:

It's easiest to create the formulas in the following manner:

= every formula begins with an equal sign

COUNTA this is the proper formula to use when you are counting text items in cells

(open parenthesis

Now, use your mouse to select the cells you want to include in the formula (click and hold your mouse and drag over the cells you want).

) close parenthesis

1		Advertis
2	Word Basic	
3	BDOL	1/4/2012
4	BDOL	1/4/2012
5	BDOL	1/4/2012
6	BDOL	1/4/2012
7	BDOL	1/4/2012
8	BDOL	1/4/2012
9	BDOL	1/4/2012
10	=COUNTA(A3:A9	
11	COUNTA(**value1**, [value2], ...)	

f_x =COUNTA(A3:A9)

When you do this correctly, press the **Enter key** on the keyboard. You should now see a number for your attendance for this particular class.

Repeat this pattern to get attendance numbers for the classes in January.

2	Word Basic	
3	BDOL	1/4/2012
4	BDOL	1/4/2012
5	BDOL	1/4/2012
6	BDOL	1/4/2012
7	BDOL	1/4/2012
8	BDOL	1/4/2012
9	BDOL	1/4/2012
10		7

COLUMN M FORMULA:

= every formula begins with an equal sign

AVERAGE this is the proper formula to use when you are averaging numbers in cells

(open parenthesis

Now, use your mouse to select the cells you want to include in the formula (click and hold your mouse and drag over the cells you want).

) close parenthesis

Press **Enter**

Overall Satisfaction	Comme
5	
5	
4	
3	
5	
4	
5	
=AVERAGE(M3:M9)	4.42857143

Once the numbers are in, we have to summarize the entire month. Below is a way to do that.

Column **O** will contain our labels, and column **P** will have our formulas. These formulas will summarize our entire month.

O	P
Classes	5
Attendance	
Average	

Here's the **attendance** formula. **Type** a **comma** between cells to select multiple, non-continuous cells.

Attendance =SUM(A10,A18,A27,A40,A49)

Here's the Overall Satisfaction **average** for the month of January

Average =AVERAGE(M10,M18,M27,M40,M49

Here's the final outcome

Classes	5
Attendance	34
Average	3.97905

Remember, all your monthly sheets will look like this.

Year-to-Date Formulas

There are several ways to create YTD formulas. First, we'll get our sheet to automatically update monthly attendance totals and averages. Then, we'll look at making a single formula that covers multiple spreadsheets. Here we see that the number of classes in January is simply counted "by hand" and typed in.

To get our monthly totals to automatically populate the YTD sheet, we can simply set up the sheet (as seen here) then add simple formulas.

		Classes	Attendance	Average
1				
2		Classes	Attendance	Average
3	January	5		
4	February	4		
5	March	5		
6	April	6		
7	May	6		
8	June	5		
9	YTD Total	31		

The attendance in **cell C3** is actually a **sum formula**, but with only one cell to be "added together." The cell is from the January sheet, as indicated in the formula **(Jan!)**.

2		Classes	Attendance
3	January	5	34
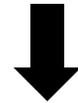
By generating this formula, all changes in attendance will be tracked in the YTD sheet. Create this formula by:

Clicking in cell **C3**
Typing in **=SUM(**
Clicking on the **January** spreadsheet
Clicking on cell **P3**
Type in the **close parenthesis** (Shift +0)
Press **Enter**

fx =SUM(Jan!P3)

The same thing can be done to tally the **monthly averages**.

	Classes	Attendance	Average
January	5	34	3.979048

fx =SUM(Jan!P4)

9	YTD Total	31	288	4.126339

For the YTD totals, just use a sum formula for attendance **=SUM(C3:C8)** and an average formula for the averages **=AVERAGE(D3:D8)**

You may also create a "double check" formula that creates an overall total for the 6 months represented in our spreadsheet. Here are the steps to follow:

f_x =SUM(Jan!P3,Feb!P3,Mar!P3,Apr!P3,May!P3,Jun!P3)

Click in cell **C11**
Type in **=SUM(**
Click on the **January** spreadsheet
Click cell **P3**
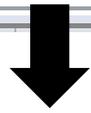**Type in a comma**
Click on **February**
Click cell **P3**
Type in a comma

Continue this pattern for each month.

Close parenthesis (Shift +0)
Press **Enter**

| 11 | Double Check: | 288 |

Insert a Chart

Let's say we want to compare the total number of classes and attendance for these 6 months. We'll select our data and use the Insert tab to choose a chart type.
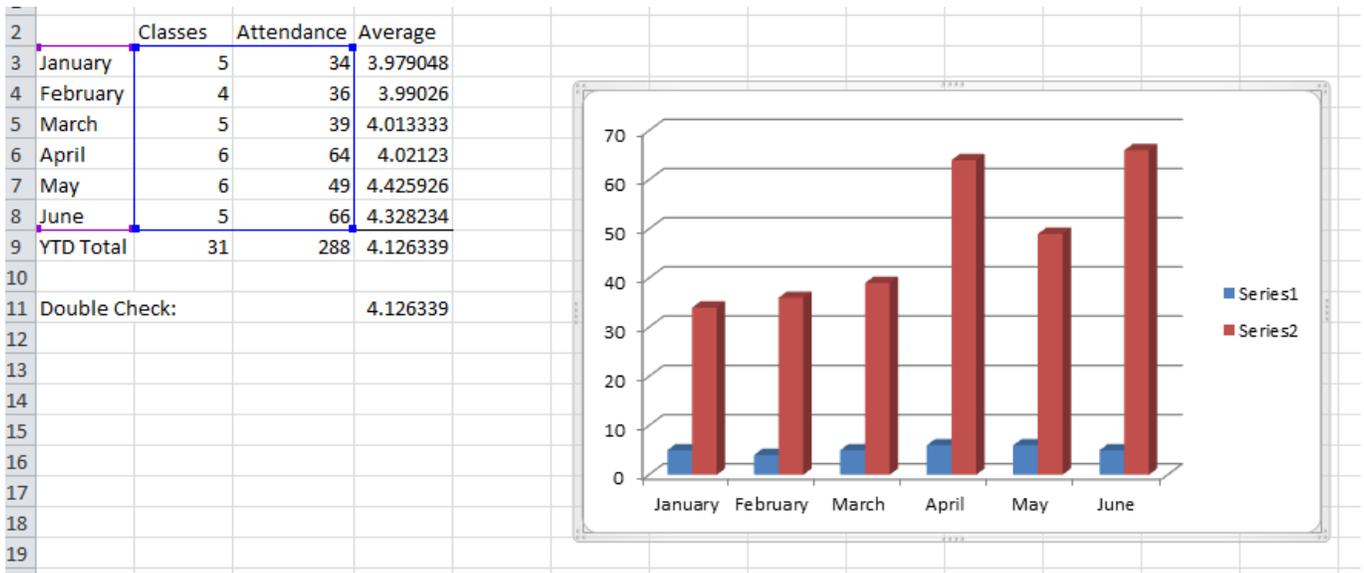
2		Classes	Attendance A
3	January	5	34
4	February	4	36
5	March	5	39
6	April	6	64
7	May	6	49
8	June	5	66
9	YTD Total	31	288

This is a fairly simple chart: **choose A3 to C8** for our chart information.

On the **Insert** tab, choose a **3-D column chart**.

Column   Line   Pie   B

2-D Column

3-D Column

Cyli   **3-D Clustered Column**

Compare values acro
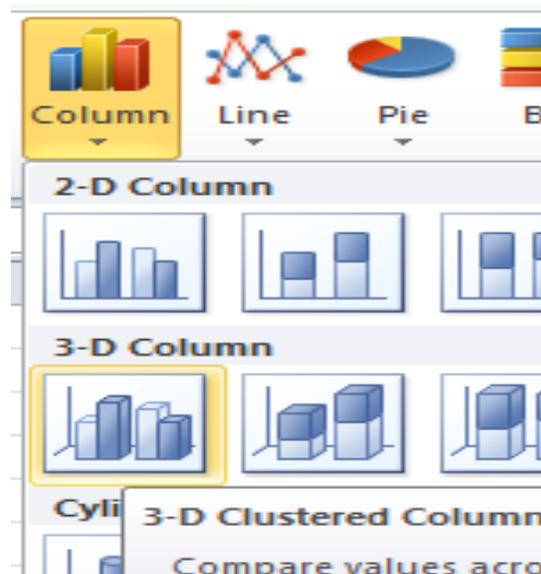
As seen below, the chart automatically inserts on the spreadsheet.

	Classes	Attendance	Average
2			
3 January	5	34	3.979048
4 February	4	36	3.99026
5 March	5	39	4.013333
6 April	6	64	4.02123
7 May	6	49	4.425926
8 June	5	66	4.328234
9 YTD Total	31	288	4.126339
10			
11 Double Check:			4.126339
12			

Prove It Test: to change a chart style, **click on the chart and then click the **Design tab** at the top. Choose the chart style from the gallery.

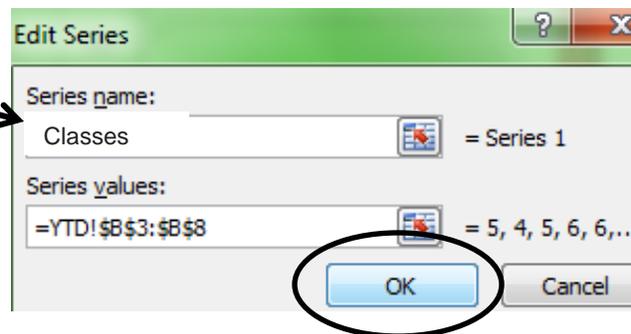Let's change the legend on it.

Right-click once on a taller column and choose **Select Data** from the submenu.
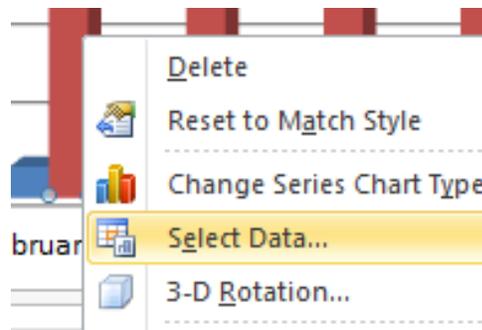
Click on **Series 1** and **Edit**
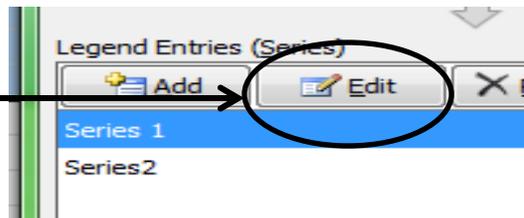
Type the name **Classes** and click OK. Do the same for attendance.

Resources
These items are available in the NIOGA Library System!
Contact your local library for assistance!

| Call Number	Author	Title	Date
005.54 HARV	Harvey, G	Excel 2010 for Dummies	2010
005.369 MCFE	McFedries, P	Teach Yourself Visually: Excel 2010	2010
005.446 RATH	Rathbone, A	Windows 7 & Office 2010 for Dummies	2011
005.369 SHOU	Shoup, K	Office 2010 Simplified	2010
005.54 SYRS	Syrstad, T	Using Microsoft Excel 2010	2011
005.369 WEVE	Weverka, P	Office 2010 All-in-one for Dummies	2010

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…….Additional Prove It Test Items…….

To Center a selected worksheet both horizontally and vertically for printing: Page Layout > Page Setup > **Breakout arrow** > Margins > "Center on page" Horizontally and Vertically. Click OK.
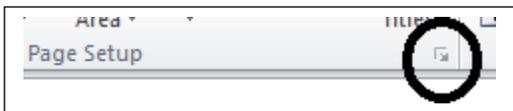
To get each worksheet to print on one page: Page Layout > Page Setup > Breakout Arrow > Page > Scaling…. **Fit to 1 page wide by 1 page tall**.