

**B&E 105: TECHNOLOGY FOR BUSINESS SOLUTIONS**  
**EXAM 2 CHECKLIST & OUTLINE**

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**Strategy for doing well:** Work along with the videos, filling out your Excel file(s) step by step. Do this until you can comfortably complete the file without any help from these notes or the videos themselves. By the time you sit for the exam, you should have been able to complete the Excel practice file(s) perfectly *several times* without assistance.

**Checklist:** These topics may appear on the exam. Check them off as you learn them. Anything covered in the videos can be tested. The format of the exam is like that of the practice file(s).


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|---|--|
| <input type="checkbox"/> <input type="checkbox"/> Mixed, absolute, relative references    | <input type="checkbox"/> <input type="checkbox"/> Alternating row colors using MOD |
| <input type="checkbox"/> <input type="checkbox"/> ROUND                                   | <input type="checkbox"/> <input type="checkbox"/> Insert graphs, scatter plots     |
| <input type="checkbox"/> <input type="checkbox"/> ROW                                     | <input type="checkbox"/> <input type="checkbox"/> Formatting graphs, labels        |
| <input type="checkbox"/> <input type="checkbox"/> MOD                                     | <input type="checkbox"/> <input type="checkbox"/> Goal seek                        |
| <input type="checkbox"/> <input type="checkbox"/> MOD(ROW(),2)                            | <input type="checkbox"/> <input type="checkbox"/> Add a series to a graph          |
| <input type="checkbox"/> <input type="checkbox"/> Naming cells                            | <input type="checkbox"/> <input type="checkbox"/> Concatenate with ROUND           |
| <input type="checkbox"/> <input type="checkbox"/> Conditional formatting                  | <input type="checkbox"/> <input type="checkbox"/> Data validation of cells         |
| <input type="checkbox"/> <input type="checkbox"/> Generate series (drag down values)      | <input type="checkbox"/> <input type="checkbox"/> Add graphics file                |
| <input type="checkbox"/> <input type="checkbox"/> Protect Cells                           | <input type="checkbox"/> <input type="checkbox"/> Add developer tab                |
| <input type="checkbox"/> <input type="checkbox"/> Concatenate                             | <input type="checkbox"/> <input type="checkbox"/> Record macro and add button      |
| <input type="checkbox"/> <input type="checkbox"/> Show/hide ribbon                        | <input type="checkbox"/> <input type="checkbox"/> Save as a macro enabled file     |
| <input type="checkbox"/> <input type="checkbox"/> Auto calculation on/off                 | <input type="checkbox"/> <input type="checkbox"/> All previous exam material       |
| <input type="checkbox"/> <input type="checkbox"/> Superscripts, centering, and formatting |  |
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**1. Tools, Part 1 (~26:45)**

Function	Definition
=ROUND( <i>number, num_digits</i> )	Rounds the number or cell reference to the selected number of digits.
=ROW([ <i>reference</i> ])	Returns the row of the cell referenced. If no reference, returns the row of where the formula is placed.
=MOD( <i>number, divisor</i> )	Returns the remainder after the given number or reference is divided by the divisor.
=MOD(ROW(),2)	A ROW function nested in a MOD function. Returns a 0 for even rows and a 1 for odd rows.

- Naming cells:
  - Select a cell and then change the name in the Name Box in the top left corner, just above the spreadsheet. Press *Enter*.
  - Alternatively, change or search for a cell name in the Name Manager:
    - Formulas* Tab ► Defined Names ► Name Manager ► New or Edit
- Excel will follow a pattern of two or more cells when filling data down (generating a series).
- Conditional formatting:
  - Home* Tab ► Styles ► Conditional Formatting ► Highlight Cell Rules

## 2. Tools, Part 2 (~18:21)

- Protecting Cells
  - By default, all cells are locked upon protecting the sheet
  - To change if a cell is locked or unlocked:
    - Home* Tab ► Alignment  ► Protection
  - To protect the sheet (and enable locked cells):
    - Review* Tab ► Changes ► Protect Sheet
  - To unprotect the sheet once protected
    - Review* Tab ► Changes ► Unprotect Sheet
- Concatenation
  - Begin concatenation cell with an =
  - Use “ ” for text in a concatenation
  - Use & to add text or formulas by concatenation
  - Example: =“The value in the cell to the left is ”&ROUND(C44, 2)&“.”
    - Note that there is a space after *is* in the text
    - An & precedes each bit that is to be concatenated (before both the ROUND function and the period).
    - Quotes are not needed around numbers, references, or formulas, but they are needed around text
    - The period is also text, so it has quotes around it as well.
    - Don’t forget to close out quotes (that is, if you have “ you must be sure you have ”.)
- Hiding the Ribbon
  - Right click on the and check “Collapse the Ribbon.”
  - Click any tab (*Home*, *Insert*, *Draw*, etc.) to reveal the ribbon, and right click again, unchecking “Collapse the Ribbon” to bring the ribbon back.


- You can also double-click any tab to reveal or hide the ribbon. The up arrow and the thumbtack in the lower right corner of the ribbon can also be used to collapse or pin the ribbon.
- Auto Calculations
  - To turn off auto calculations:
 

*Formulas* Tab ► Calculation ► Calculation Options
  - To calculate once manual calculations are on:
 

*Formulas* Tab ► Calculation ► Calculate Now

### 3. Make the Table (~21:09)

- General Formatting
  - Create an exponent by highlighting the number in a cell, then:
 




*Home* Tab ► Font  ► Superscript
  - To apply formatting to an entire row or column, select the entire row by clicking the row heading (a number) or column heading (a letter)
  - Centering, font changes, alignment, and borders options can be found in the *Font* and *Alignment* sections on the *Home* tab.
- Alternating row colors in a table
  - Use the MOD and ROW functions
 



*Home* Tab ► Styles ► Conditional Formatting ► New Rule ► Use a Formula
  - For even formatted rows: =MOD(ROW(),2)=0
  - For odd formatted rows: =MOD(ROW(),2)=1
  - Choose the formatting using the *Format* button, and check the *Preview* window
  - To change a rule:
 

*Home* Tab ► Styles ► Conditional Formatting ► Manage Rules

### 4. Make the Graph (~23:41)

- Scatter plot: select your data, then
 

*Insert* Tab ► Charts ► 
- Formatting the graph
  - Double click axis labels. In the “Format Axis” menu that comes up on the right side of the screen, click , and max/min bounds, units, tick marks, label position, and decimal places can be adjusted.
  - Axes labels can be formatted in the same way text in a cell is in the *Font* section of the *Home* tab.
  - Select the table and click  to add, remove, or edit chart elements, including axes titles, gridlines, and legends.

- To make a line dashed, select the line, then click . Click the radio button next to the “Solid line” option, then choose from the dashed option in the *Dash type* menu below.
- Adding a series to graph:
  - Select the table and click  ► Select Data ► Add, then enter series name and select X and Y values.
- Goal Seek

*Data* Tab ► Forecast ► What-If Analysis ► Goal Seek

- Goal Seek is used to find an input value given a result. In our example, it is used to find the supply and demand equilibrium.
- To find where demand equals supply, use Goal Seek to set the difference cell (demand – supply) equal to zero by changing the value of the quantity cell.
- Data Validation

*Data* Tab ► Data Tools ► Data Validation

- Data validation allows you to restrict the values that may be entered in a cell.
- In our example, we allow any *decimal* value (in the *Allow* drop down list of the Data Validation window) between a minimum and maximum.
- Error messages can accompany data validation restrictions on the “Error Alert” tab of the Data Validation window.

## 5. Clean Up (~20:22)

- Adding graphics

*Insert* Tab ► Illustrations ► Pictures ► (*navigate to picture file*)

- Change row and background colors
  - First select the row you want to color, then:

*Home* Tab ► Font ► 

- For a specific color, select the small down arrow next to the icon and choose More Colors ► Custom
- Add developer tab
 

*File* Tab ► Options ► Customize Ribbon ► (*check box next to “Developer”*)

  - Alternatively, right click on a blank spot of the ribbon and choose “Customize Ribbon”
- Record macro and assign to a button
  - Must have the developer tab enabled

*Developer* Tab ► Code ► Record Macro

- Provide a macro name, shortcut key, and description. Once you click “OK” the recording begins.
- Be sure to only record what is necessary. Don’t use undos/redos, and limit clicks to as few as possible.
- To stop recording, click “Stop Recording” where you originally clicked “Record Macro.”
- To add a button:
  - Developer* Tab ► Controls ► Insert ► Button (Form Control)
- Drag and drop to place button, and then assign a macro to it in the window that pops up.
- Text in the button can be edited by right clicking.
- Save as macro enabled
  - File* Tab ► Save As ► Browse ► Save as type ► Excel Macro-Enabled Workbook