

Lecture #10 (Excel Lecture A)

Reading Assignment:

Chapter 14 in Engineering Fundamentals – An Introduction to Engineering, 2nd Edition, by Saeed Moaveni.
The following Excel Examples (passed out in class or available from the instructor's web page):

- *Example 1: Using Tables in Microsoft Excel*
- *Example 2: Using Tables in Microsoft Excel*
- *Using Special Symbols in Microsoft Excel*

Microsoft Excel Basic Information:

Define the following

- Rows, Columns, Cells, Cell addresses
- Active cell
- Formula bar (pick *View – Formula Bar* if not shown)
- Spreadsheet tabs (Sheet 1, Sheet 2, etc – right click on tab to insert more sheets)
- Cell addresses including the letter of the spreadsheet tab

The size of a spreadsheet

- Rows: 1 – 8192
- Columns: A, B, ..., Z, AA, AB, ..., AZ, BA, IV (256 total)
- Total number of cells: $(256)(65,536) = 16,777,216$ per sheet
- A single spreadsheet file may have multiple sheets. The tabs at the bottom of the spreadsheet indicate sheets. Right-click on a sheet tab to insert more sheets.

Moving around the spreadsheet

- Arrows – for general movement
- Scrollbars – for general movement
- PageUp/PageDown – to move up or down a screen at a time
- (Ctrl + →)/(Ctrl + ←) – to move left or right a screen at a time
- Home (or Ctrl + Home) – to move to cell A1 of the current spreadsheet
- Ctrl + G (GoTo) or F5 – allows the user to enter the cell address to go to

Entering data into the spreadsheet

- Type in values then press Enter or move to another cell with an arrow
- Labels (also called strings or text constants)
- Numbers (no spaces, no commas)
- Scientific notation (Example: 2.50E-4)
- Using ' to force data to be recognized as a label
- Using = or + to force data to be recognized as a number (or an equation)
- Editing cell entries (using the formula bar)
- Deleting cells
- Quickfill (filling a series of cells by dragging the *fill handle*)
- Blocks of cells (upper left cell:lower right cell)
- Dragging cells (highlight a block and drag by an edge)
- Cutting, copying, and pasting cells

Formatting data in the spreadsheet

- Properties (right click on a cell or a block)
- Numeric format
- Alignment
- Lines
- Column width and row height
- Fonts
- Superscripts and subscripts
- Greek letters (using the Symbol font)

Equations in Excel

- Entering formulas
- Using functions (type in name or use *Insert – Function* or use f_x)
- Table of functions in Excel (see Chapter 2)
- Note that all trigonometric functions require the use of radians
- Copying formulas
- Relative addresses
- Absolute addresses
- Examples of absolute addresses:
 - \$A6 keeps the column (A) from changing when copied
 - A\$6 keeps the row (6) from changing when copied
 - \$A\$6 keeps both the row and the column from changing when copied
- Various examples will be shown in class

Inserting Objects into Excel worksheets

- Inserting equations (text) using Microsoft Equation
- Inserting drawings using Microsoft Draw or Paint
- Using *Tools – Toolbars - Drawing* to add a menu of drawing tools