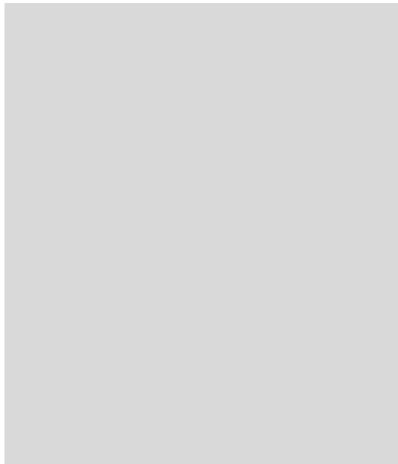


Part I: Excel spreadsheet Exercise

1. Go to WTCClass or get from instructor the files needed for this lab which should be located in the C drive under folder Excel_and_Google_Earth
2. Open the excel spreadsheet labeled “**Lab1_ENVR_4305.xls.**”
3. On the spreadsheet on the first tab (“**Excel_Basics**”) and familiarize yourself with how Excel computes a range of math calculations. Using the existing template, fill in the rest of the spreadsheet and write your answers below

9	$y = e^{-ab}$	y =
10	$y = \frac{1}{\ln 10} \frac{e^a}{b} + e^{-ab}$	y =
11	$y = \text{SIN } a$	y =
12	$y = \text{COS } 0.5a$	y =
13	$y = \text{TAN } 0.5b$	y =



4. On the “**geocoordinate_conversion**” tab you will familiarize yourself converting various formats for latitude and longitude. Specifically Converting decimal coordinates (DDD.ddddd) to DDD MM.MMM and DDD MM SS

Fill in the table below (see next page):

number in decimal degrees	DDD	MM.MMM	DDD	MM	SS
41.878928°	41°	52.73568	41°	53	44
30.678976°					
78.7625°					

How to Convert Decimal Degrees to DMS (source:

<https://www.calculatorsoup.com/calculators/conversions/convert-decimal-degrees-to-degrees-minutes-seconds.php>)

$$1 \text{ hour} = 60 \text{ min}$$

$$45.75 \text{ min} = 0.7625 \text{ hour}$$

$$1 \text{ min} = 60 \text{ sec}$$

$$45 \text{ sec} = 0.75 \text{ min}$$

Follow these steps to convert decimal degrees to DMS:

1. For the degrees use the whole number part of the decimal
2. For the minutes multiply the remaining decimal by 60. Use the whole number part of the answer as minutes.
3. For the seconds multiply the new remaining decimal by 60

Example: Convert decimal degrees 156.742 to degrees minutes seconds

- The whole number is degrees. So 156.742 gives you 156 degrees.
 - Multiply the remaining decimal by 60.
 $0.742 * 60 = 44.52$, so the whole number 44 equals minutes.
 - Multiply the remaining decimal by 60.
 $0.52 * 60 = 31.2$, so the whole number 31 equals seconds.
 - Decimal degrees 156.742 converts to 156 degrees, 44 minutes and 31 seconds, or $156^{\circ} 44' 31''$.
 - Be sure to follow math rules of rounding when calculating seconds by hand. If your resulting seconds is something like 31.9 you may round up to 32.
4. Open the excel spreadsheet for Lab1_ENVR_4305 excel file. Move to the “**Text_data**” tab.
 5. Import the **Weather_data.txt** text file into excel. To do this, you click File → open → **Weather_data** (don’t hesitate to ask the TA or instructor for help. You need to change the type to “text” to see the file.
 6. This will open the “Text Import Wizard” in Excel.
 7. For Step 1 of the Text Import Wizard select “Delimited” and check box “My data has headers” and select “next.”
 8. For Step 2 of the Text Import Wizard select both “Tab” and “Space” for your delimiters and select “next.”
 9. For Step 3 of the Text Import Wizard do not change anything (leave “Generic” selected) and check “Finished.” The weather data file will not be uploaded into excel.

10. Plot an xy plot of your choice and show it to the TA or instructor. You will select time (far left column) and one of the other columns (using the “ctrl” key – Ask TA for help). The insert → Scatter xy chart.

**Part II: Preliminary Exercise in using ArcMap software.
Exercises 3a, 3b, 3c from “Getting to Know ArcGIS.”**

Group into teams of 2 students. The TA or instructor will provide you with the workbook. One student will read the instructions to the other student. Take turns reading or typing the commands into ArcMap. The instructor and TA will check in with students frequently.

The data files for part I should be in the C drive under folder

EsriPress/GTKarcGIS/

Open ArcMap 10.7 and from the “Getting to Know ArcGIS” book provided in lab, work through the Chapter 3 follow the instructions in the workbook for **Exercises 3a, 3b, 3c.**

Show the TA/instructor your results after you have completed each of the 3 exercises.