

# ChE 263

## Assignment #6

1. Label a new worksheet “Problem 1”. Record an Excel macro, “Times12” that changes the selected cells’ font to “Times New Roman”, size 12 and colors the cell light blue. Program it to run with the shortcut key combination <Ctrl><Shift>T. Add a button labeled as “Times12” which will run the macro.
2. Label a worksheet Problem #1 and complete the following. Suppose that we have a cylindrical tank with radius  $r$  (m) and height  $h$  (m). If the tank is being filled with crude oil at flow rate  $F$  ( $\text{m}^3/\text{min}$ ) for a period of time  $t$  (min), write a macro to determine whether it overflows the top. Do the following:
  - a. Input the following text into Cells A1 through A6:  $r$ ,  $h$ ,  $F$ ,  $t$ ,  $\text{tank } V$ ,  $\text{Crude Oil } V$  respectively.
  - b. In the C column type in the corresponding units as specified in the problem
  - c. Write a macro called “tank” to compute the volume of the cylindrical tank and the volume of crude oil filled into the tank from the values that are inputted into column B (e.g. B1 would be the radius value, B2 would be the height value). Have the macro display the values of the tank volume and the crude oil volume into B5 and B6.
  - d. Also if the crude oil volume is greater than the tank volume write the macro such that a message box will display some message such as “Warning: Tank Overflow, Evacuate the Area!” However, if the tank does not overflow have a message such as “Tank is not overflowing”
  - e. Test out your macro with the following values  $r=5\text{m}$ ,  $h=10\text{m}$ ,  $F=15\text{m}^3/\text{min}$ ,  $t = 180$  min.

The assignment is due midnight before the beginning of the next class period. Upload to Learning Suite.