**BSEN 5250/6250**

**Homework #2 – Tank Flow**

Develop a spreadsheet to compute the volume in both tanks of the Tank example covered in class. Use the following input parameters. Use the model to simulate the behavior of the system for 100 hours.

Timestep: 1 hour

C1: 0.5 m2 – sec hr-1

C2: 0.5 m2 – sec hr-1

A1: 25 m2

A2: 25 m2

G: 9.81 m s-2

I(t) = 1 m3 hr-1 (water flow into tank 1).

Answer the following questions. Upload your write-up and spreadsheet to Canvas.

1. What is the steady-state volume in tanks 1 and 2 using the inputs shown above?
2. What happens to the steady-state volumes when each tank has a different orifice coefficient? (hint, change orifice coefficients over a range of values and see what happens).
3. How does tank cross sectional area affect the height of water in the tank and the steady-state volume?
4. What is the impact of increasing the time step on the solution of the system (ie. What happens with dt approaches 5, 8 or 10 hrs)?

Write up your results and save your spreadsheet and upload the word document and spreadsheet to Canvas.