Intro to System Modeling with Vensim
Laboratory 8 March 2017

By the end of the lab period today you will have:

a) Downloaded and installed Vensim PLE on your computer (use EDU to register)
b) Built a simple population model producing a graph and a table
c) Modified a simple population model to add complexity
d) Downloaded a comparison of carrying capacity and competition
e) Downloaded pre-built model to explore SIR model in epidemiology
f) Modified SIR model to explore Forest Fire model
g) Downloaded pre-built model to explore Dosing model in pharmacology

1. Download and install Venim PLE. If you have not already done so, google "Vensim free" and follow the instructions to download and install Vensim PLE for your personal computer.

2. Follow the instructor to build a simple population model. Record all steps needed to reproduce the procedure for any other model expressed as a difference (differential) equation or set of coupled equations. Include building/modifying a graph and a table.

3. Modify your simple model to include natural death, maturation, or other factors.

4. Download: http://shodor.org/~rpanoff/CS150/VensimModels/CompVCarry.mdl

5. Download: http://shodor.org/~rpanoff/CS150/VensimModels/SIR.mdl

    a. Develop some driving questions and
    b. Use the model to investigate the answers
    c. Record your observations

6. Make a copy of your simple SIR model and modify it to represent a Forest Fire

    a. What would be appropriate time units?
    b. Develop some driving questions and
    c. Use the model to investigate the answers
    d. What strategies could you use to change how the fire burns?

7. Download: http://shodor.org/~rpanoff/CS150/VensimModels/Pharma.mdl

    a. Develop some driving questions and
    b. Use the model to investigate the answers
    c. Record your observations