Instructor: John Goulet, PhD  goulet@wpi.edu

Course calendar:

Classes on Tuesdays except Feb and April vacations  SH 106

Course topics

Part One – Heating and Cooling  (5)

Heat, temperature, conductivity, R values
Newton’s Law of Cooling, Fourier’s Law of Heat
Outcome: model of a house

Part Two – Sound and Vibration  (5)

The Wave Equation
Harmonics
Standing Waves
Fourier Series
Fourier Transforms
Outcome: comparison of voice or instruments

Part Three – Populations  (3)

Single species model  (Malthusian)
Two species: competing, predator-prey
Phase space analysis
Numerical simulation
Outcome: human global issues

Grade based upon:

1 exam  30%
3 projects  -  50%
Homework  -  20%

Software Related:

* WPI computer account & Blackboard (myWPI) access
* Excel, Maple, Matlab (Remote Desktop needed)
* microphone  -  computer compatible