HOMEWORK PROJECT 3, Due 11/29/2007
Broken or degraded system: During project 3, you will identify and investigate overall functionality of the “degraded” machine, due to its faults. ME 392Q students will cite 2 potential faults, ME 348C students, 1 fault due to breakage and/or deterioration.
1. Identify the fault(s), and how they form in your system. This might require “breaking” your device.
2. Obtain a faulty specimen. It might be wise to obtain multiple specimens: some with but one fault, others with all.
3. Describe in detail the faulty system: geometry, structure, materials, functionality, etc., including what effect these faults will have on the system operation. Compare the faulty system to the “healthy” system.
4. Bring your device to the lab (ETC 3.136) and collect data, similar to what you did in project 2. Compare this data to your data for project 2. Cite any important changes.
5. Identify what parameters in your system model you might change, to account for these faults in your model.
6. Make any necessary changes to your model, to account for the faults.

Your report should overview the fault(s) and their effects on the system, how the fault was incorporated into the bond graph model, data for the faulty system similar to project 2, and simulations of the updated model with faults, similar to project 1.