PHY 201/181 Lab Instructor notes
Lab 12: Mechanical equivalent of heat and Heat Capacity
Fall 2003

- Put out stop watches.
- Put out a graduated cylinder for measuring water.
- For cold water, you might want to get a tub of ice and put water in it. This will improve results slightly. You will need ice for this lab.
- The resistors are borrowed from the SCS 110 lab.
- You should use the 0.1° C thermometers for measuring the temperature of the water in both experiments. Also, the 0.1° C thermometers can be found in the SCS 110 lab.
- In order to avoid thermometer breakage, the thermometers should be held in place with a clamp. (Otherwise, we break thermometers at a rate of one per lab period.)
- You will need to set up 2–3 pots of boiling water in the back. Be sure to place thermometers in them so the students know the initial temperature for the first part of the experiment.

heat capacity experiment

Maybe have half the students use the one inch riser blocks and 100 ml of water. See who does better.

Mechanical equivalent of heat.

- This year, we will try to read voltage and current directly from the Tenma power supplies. I am not sure if this will cause too much error.
- The switch on the Tenma power supplies should be set to the right "independent."
- Warn students that the water and resistor must be in thermal equilibrium and temperature measured before turning on the power supply.