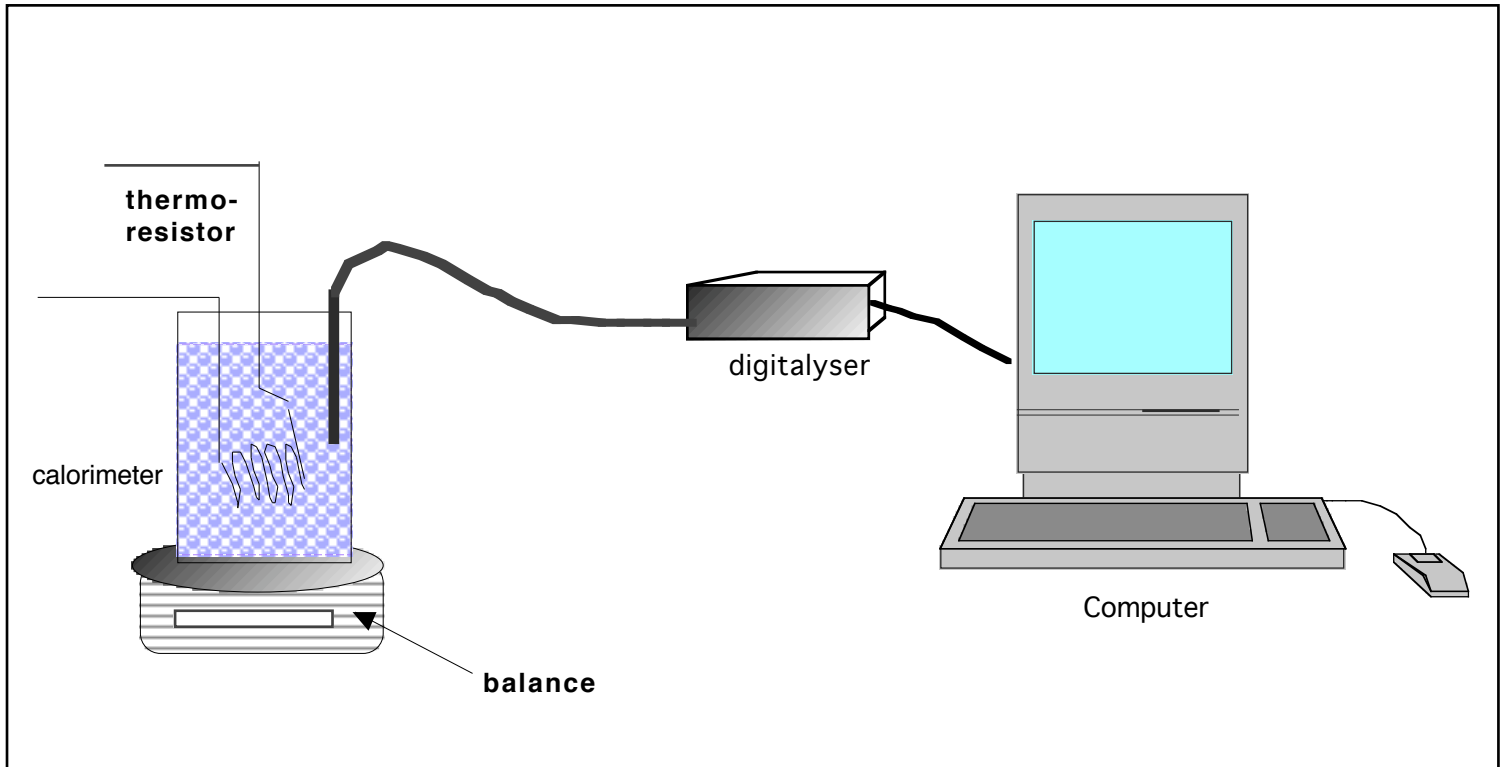


# Measuring Specific heat Capacity of water ( computerised version )



The specific heat capacity of a liquid is easily measured by the following experiment:

A mass  $m$  of water ( or an other liquid ) is placed in a calorimeter of capacity  $C$ .

An thermo resistor is insert into the liquid, and connected to a DC power supply.

The temperature can be read on a simple thermometer, as for tp 4, but for having more precision, we use also an electro-thermometer connected to a computer ( thought an interface ) . You should explain why we have many other advantages with such a system.

Ploting the temperature versus the time, the resulting graph given by the computer is a straight line, as show in page 2.

Using the theory of heat coefficient, explain why we find such a line . Let  $a$  be the gradient of this straight line ( its equation on the form "  $Y = ax + b$  " is given by the program )

Show that

$$c = \frac{P}{a} - C \quad \text{and give a value for the specific coefficient of water.}$$