Essay 1, 10 points
Suppose you are given a block of solid wax which is at room temperature. Describe how you would do an experiment to measure the specific heat of the wax, using things that might be in the 115 laboratory.

Essay 2, 10 points
Suppose the block of wax in Essay 1 melts at 45°C. Describe how you would do an experiment to measure the latent heat of the wax melting, using things that might be in the 115 laboratory.

Problem 1, 10 points
You mix 100g of ice at 0°C and 100g of hot water at 55°C. Describe the resultant mixture after it comes to equilibrium: What is the temperature? How much ice is there?
Hint: Sometimes the amount of hot water that is available is not enough to melt all the ice. So find the maximum amount of heat the hot water can lose. Find the amount of heat needed to melt all the ice. Which is greater? If the latter is greater, then only some of the ice is melted.

Problem 2, 10 points
How much hot water at 55°C do you need to add to 100g of ice at 0°C to end up with water at 20°C?

Essay 3
Explain why steam burns are more dangerous than water burns?