**Experimental Procedure:**

The following is the procedure that our group completed by following the guidelines outlined in the document “Tubular Heat Exchanger.” We found that we did not have to deviate from the established procedure. Before beginning the experiment, the system was properly prepared by following the “System Set-Up” section according to the Tubular Heat Exchanger document.

After the system was set-up, the Armfield HT31 Tubular heat exchanger software was loaded from the desktop of the computer. “Countercurrent flow” was selected and the “load” button was pressed. The “how water flow” tab was opened within the “view diagram” table. “Automatic” was chosen for the mode of operation. Under hot water flow rate set point, 2.5 lit/min. Save, apply, and ok were selected respectively.

The “heater” button was selected on the right side of the screen. “Automatic” was chosen for the mode of operation. The hot water inlet and outlet valves were turned 90 degrees to the open positions. The temperature was set to 50 degrees Celsius. Save, apply, and ok were selected respectively.

The “power on” button was selected on the left of the main screen under the controls section. This started the motor and heater. When the hot water temperature reached 50 degrees Celsius, the cold water supply valve was turned on. The cold water flow rate percentage valve opening was set to 100%. The cold water flow rate was recorded. The “go” button was selected to enable the computer to collect data on a table. The data was saved after the cold water reached a steady temperature. The experiment was repeated for a cold water flow rate percentage valve opening of 75% and 50%. The data was saved, the equipment was turned off, disconnected, and the water was drained.