Write a program for the ARM M0 processor which does an A/D conversion on channel 0 and sends the result to PWM port 1.9. Connect a potentiometer to the A/D port 0.11 such that it can input a voltage in the range of 0 to 3 volts. Connect an LED and resistor to the PWM port. Demonstrate the success of your program by showing that the LED can be dimmed by turning the potentiometer.

For the LED choose a resistor value suitable for the LED you use and the brightness level you want. For the potentiometer choose $R_1$ and $R_p$ such that $P0.11$ can never go above 3.0 volts.

$$V_{cc} \cdot \frac{R_p}{R_1 + R_p} = 3.0$$

Turn in the following:
1. A cover sheet with your name, date, and assignment number.
2. Your commented source code.
3. A signed verification sheet.
4. A screen shot using the logic analyzer showing the output when the input is a simulated sine wave at 400 Hz.
VERIFICATION SHEET

I verify that the C-program written by

________________________________________

was successful. The program ran on the ARM M0 board. The student was able to show that the
portentiometer on the A/D port could dim a LED on the PWM port.

Signed: ____________________________________________
Randall, Cron, or Blandford
Date: ____________________________________________