

ECE 4175

Project Ten

Temperature Measurement in C

Complete by:
Wednesday March 15th for an A+

Reference:
Figure 10-6 ADC transfer function

Overview

For this project, your code for Project Nine should continue to work. However, change the use of the first line of the LCD to display the right-justified value of temperature, as exemplified by

123.5°F

The temperature you measure should be able to range from room temperature up to 200°F, or so and the temperature should be rounded to the nearest 0.5°F. Blank the hundreds digit for temperatures below 100°F.

To measure temperature, use the LM34 temperature sensor, located in the upper lefthand corner of the QwikFlash board and connected to the AN0/RA0 pin. Update the display every half second.

Note that the LM34 produces an output of 10mv/°F. The ADC with its (nominal) 5V reference voltage, produces a resolution of 5000mv/1024, as shown in Figure 10-6.