UNC Charlotte, Department of Electrical and Computer Engineering
ECGR 4101/5101, Spring 2010, Homework #5

You will need to refer to the M16 Software Manual, the M16 Hardware Manual and M16 C Language Programming Manual to complete this assignment. They are available online through the documentation contained in the SKP16C26 directories link on the course home page.

0. (1 point) How long did this homework take you?
1. (2 points)What is the output code (in decimal) of a 6-bit ADC with
   V_{in}=6.5V, V_{+ref}=12 V, V_{-ref}=0 V ?
2. (2 points)What is the output code (in decimal) of an 8-bit ADC with
   V_{in}=2.7V, V_{+ref}=5 V, V_{-ref}= -5 V ?
3. (2 points)What is the output code (in decimal) of an 10-bit ADC with
   V_{in}=4.7V, V_{+ref}=5 V, V_{-ref}= 0 V ?
4. (2 points)What is the maximum quantization error for an 10 bit ADC with
   V_{+ref}=3.3 V, V_{-ref}=0 V ?
5. (6 points) Write the code to set up an A/D conversion for the first two channels of P2, 8-bit sample-and-hold, one sweep and store the data in two variables (*unsigned int sample0, sample1)*. Use as little code as possible. Include all set-up commands needed. If you use any .h files, tell me which ones you use.
6. (5 points) Write the code to take this 8-bit sample in *sample0* and output it on the first DAC. Include all set-up commands needed.