# EE3310 Final Project
# Fall 2014

The purpose of this project is to reinforce your understanding of embedded microcontroller operation and programming.

The assignment is to design, build, and demonstrate a signal generator built using the dsPIC33EP128GP502 and appropriate external components.

The device must be capable of generating Sine, Triangle, and Square waves with a frequency range of 50 Hz to 20,000 Hz and amplitudes between 0V and 3V rms. The output must be filtered so that the D/A conversion steps are not visible on an oscilloscope. The device must be battery powered.

The output frequency and amplitude should be reported to the terminal program, refreshed once per second.

The selection of Sine, Triangle, or Square wave should be performed by reading an input from the keyboard through the terminal program.

The project will be demonstrated on December 9 between 11:00 am and 4:00 pm

The work presented for grading must be your own. Two students may not share each other's work. All code obtained from other sources must be commented to clearly show its origin.

The program header should contain your name, student ID number, the presentation date, and the course and section. It should also include the following statement: "The code in this project represents my own work, and does not include code developed by any other individual or contained in another student's project. "

Your report should include a copy of the assignment, a theory of operation (the formulae you used to generate the waveforms, calculations for output gain, filter cutoff frequencies, etc.), and a code listing for your project. It should also contain a bibliography listing all sources, including the class text and Microchip documents, you used to create your project. A soft copy of your report and a compressed file (zip file) of your project should also be submitted. The soft copy is due by midnight December 9, the day you make your presentation. The hard copy is due the following day, December 10, by 12:00 noon.