Course Information:

- Meeting Time: Tuesday 6:00-8:00 P.M and Thursday 6:00-8:00 P.M.
- Location: ECEB 1001

Course Description:

The main purpose of this lab is to expose freshman students to the engineering design process. To do so, it is organized similar to the Senior Design Class (ECE 445) students will take later on in their academic career. As a result, students of this section are asked to use creative thinking to solve a real world problem with an electronic device. This problem is intentionally left open ended so that students will be able to pursue something that they are passionate about. Projects, however, if the student is in ECE 110 should involve collecting some sort of useful data which is often done using sensors or other devices such as cameras, microphones, etc. If the student is in ECE 120 it must contain logic gates instead of sensors. At the end of the semester each individual or group will be expected to present a functioning project to their peers. To receive honors credit you must spend a minimum of 16 lab hours on your project.

Engineering Design Algorithm:

When an engineer takes on the task of designing a new device, he or she will inherently follow a number of procedures that highlight their skills as effective problem solvers. These skills have been tabulated and are often referred to as the steps of engineering design or, more formally, the Engineering Design Algorithm. We will adapt the version given by Orsak, et. al., in the textbook, *Engineering Our Digital Future: The Infinity Project*

The Algorithm:

1. Evaluate the challenge by defining goals and constraints
2. Research the problem to design possible solutions
3. Choose the best solution from the options and build a prototype
4. Test and evaluate the prototype and return to earlier steps as needed

A design report is often as important as the design itself. As you step through the design process, you will make a series of decisions and support these choices within your report.

Watch Out for Plagiarism:

Often times, students might plagiarize materials due to ignorance rather than intent. Please read up on the topic of plagiarism so that you do not make the same mistakes!

[http://www.library.illinois.edu/learn/research/academicintegrity.html](http://www.library.illinois.edu/learn/research/academicintegrity.html)