To Do List: Week 3

Coursework:

1. **Assignment 3: Software Overview**
   Due Friday at 11:59pm. Assignment upload portal: link
   Notes:
   1. Provide an overview of the software/firmware (SW/FW) to be performed by your projects
   2. Describe any specific algorithms or process to be utilized by your project's SW/FW
   3. Describe data structures, packet structures, and other known data arrangements used in your project's SW/FW
   4. Provide 1 or more program flowcharts for your project's SW/FW
   5. Provide 1 or more state machine diagrams for your project's SW/FW

2. **Assignment 4: Component Analysis**
   Due Friday at 11:59pm. Assignment upload portal: link
   Notes:
   1. Choose 3-5 major components in your design (ex. Microcontroller, sensors, radio, power components, etc.) and for each component, choose 2-3 specific commercial products which could be used. Provide an analysis, and justify which product will be used in your team's project.

Manlab:

1. **"Show me a thing":** Starting next week, students are expected to demonstrate some specific element of their project being prototyped or successfully implemented. For next week, all student teams should be prepared to:
   1. Demonstrate that prototyping hardware has been acquired or is in the process of shipping
   2. Have a successful demo program (such as a light blinking, hello world example, etc.) running on these boards to demonstrate successful microcontroller communication and base-level knowledge of the IDE.

2. **Progress Reports:** Students are asked to detail their individual project accomplishments in a concise, technical, and professional manner. Progress reports should follow the course calendar (i.e., this week's progress report should be labeled "Week 3", next week's "Week 4", and so on). Additional information about course policy on progress reports can be found here: **https://engineering.purdue.edu/ece477/Course/Policies/ProgressReportPolicy.pdf**.

3. **Prototyping Hardware:** Students should be identifying hardware of interest for use in their engineering projects. Once hardware selections have been made, particularly for microcontrollers (or FPGAs, CPLDs, SoCs, etc.) students should begin acquiring prototyping hardware to acquire experience with the microcontroller family, development tools, and so on. A wide variety of development tools and boards are available from the Digital Systems Laboratory Engineer (Joseph Bougher, bougher@purdue.edu); contact him to initiate the checkout process and to start undertaking prototyping fundamentals.

4. **PCB Layout Training:** ECE477 requires the creation of a printed circuit boards (PCBs), and

some students may lack prior experience with PCB layout fundamentals. Students are encouraged to begin learning the fundamentals of these tools. At the time of this writing, Altium and Eagle CAD have staff and ECN support. A simple Eagle CAD PCB tutorial is available here: **https://engineering.purdue.edu/ece477/Resources/T1-EaglePCBLayout.zip**