BME 484 Biomedical Engineering Capstone Design

Project Proposal

Project Title: Balance Board with Intelligent Feedback

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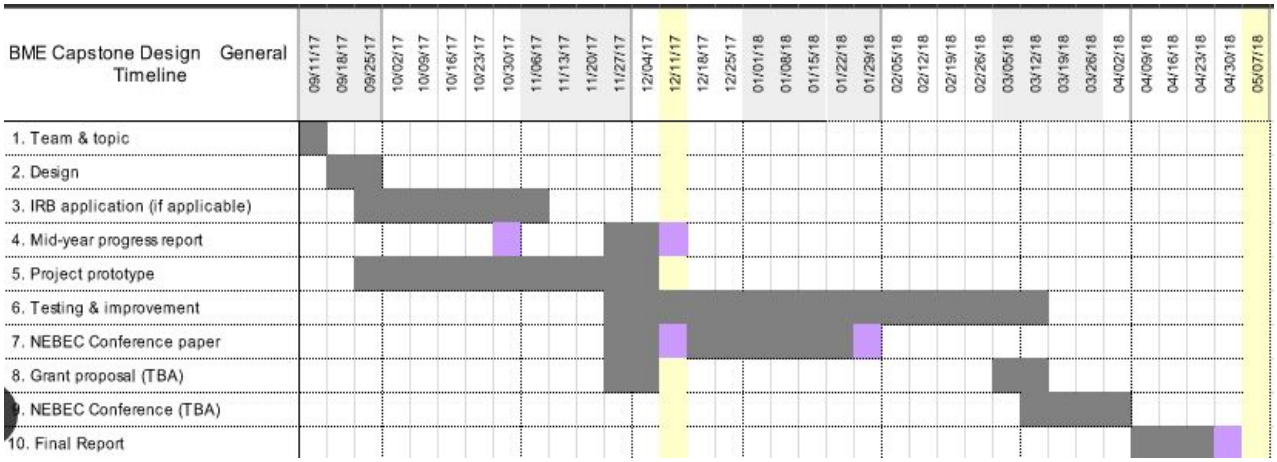
Abstract: The focus of our project is to further develop an intelligent balance board that can be used during rehabilitation for athletes with ankle injuries. The board currently uses a gyroscope, magnetometer, accelerometer, bluetooth adapter, and an Arduino to compare the proprioceptive movement of the left and right ankle. We plan on doing human trials for the current state of the balance board. Furthermore we wish to install 4 pressure pads that will be used to show visual data regarding the pressure distribution on the athlete's ankle before and after injury.

Innovation: Adding four pressure sensors into the board in order to track the progress of the patient's ankle rehabilitation. .

Materials: 1. Pressure Pads - 10$ x 8

Subtasks:
1. Build multiple working prototype of the previous project
2. Meet with physical therapist Craig Simpson
3. Begin human trials on the balance board
4. Acquire pressure pads
5. Outfit the pressure pads to the balance board
6. Program application to display the reading from the pressure pad

Timeline:



References: < McGuine, T.A. & Keene, J. S. (2006). The effect of a balance training program on the risk of ankle sprains in high school athletes. The American journal of sports medicine, 34(7), 1103-1111. >.

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