

# BikeSense Executive Summary

5/19/2023

Our Project is the development and implementation of a wireless bicycle speedometer. The goal is an accurate and user-friendly way to measure a cyclist's instantaneous speed to help keep safe speeds on roads, and act as a measure of exertion to help encourage a target cadence. The project is designed with marketability in mind. The goal is to produce a price and feature competitive product with current market availability.

The first development phases were market research to gauge the feature sets we should implement, the physical dimensions of the product, and the going price target. We settled on a small box designed to go inside the wheel of the bicycle. Because the microcontroller and sensors are on the wheel, this would require wireless communication with an external display to show speed to a user and a battery power source in the same enclosure. With this design in mind, as a team we gauged the engineering effort required for each stage of development and testing, and made the following timeline.

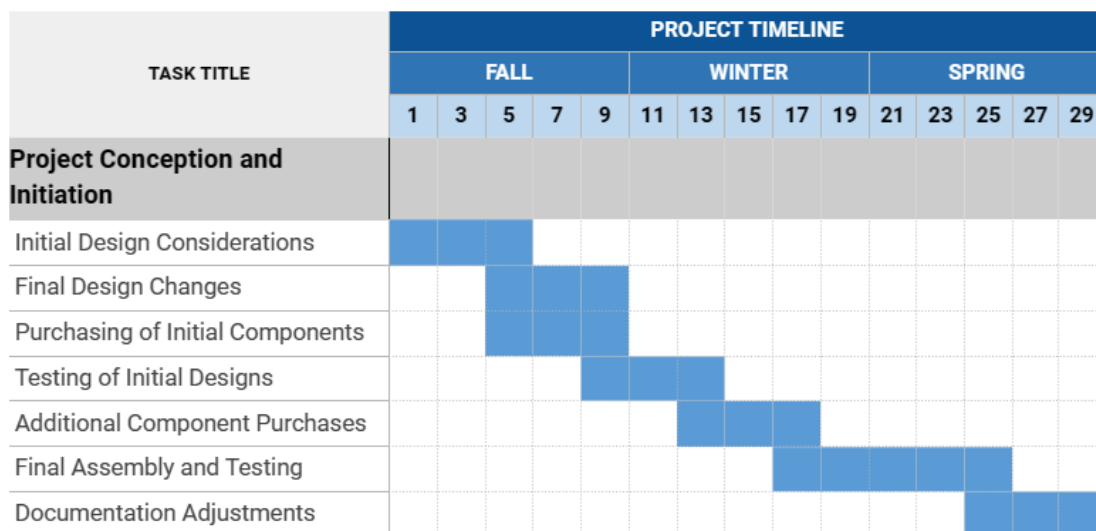


Figure 1.1 - Project tasks and timeline chart

After completing all design phases of this project, we stayed on course with the timeline made in the beginning stages. As a team, we learned the value of the project timeline to help keep the project on track. The importance of the timeline exceptionally shines when each member has their own blocks to complete. For our project, many of our blocks relied on blocks from other team members. The timeline allowed us to keep track of each others' progress, and ensure that blocks relying on each other were completed on time, in the correct order. Another key lesson learned as a team was the value of accurately gauging and planning the difficulty of each block. The key example for this in our project was the wireless interface for the system. We anticipated the wireless display being a challenging aspect, and as such to stay in the timeline decided to make the project primarily about the hardware to measure speed, and keep the wireless display under future work, with more knowledge and time to develop it.