## Task Breakdown: Train Model

# Train Model

## Calculates Newton’s Laws

The train model takes the input power from the train controller and converts it to velocity.

Time: 16hr

## Train Properties

Include the train’s length, width, height, and mass, among other important train data.

Time: 2hr

## Receive Data from Train Controller and Track Model

Connect to the train controller and track model.

### Receive data from Train Controller

Get the data from the train controller including brake command, speed & acceleration limits, temperature, door state, light state, beacon inputs, track circuit input, emergency brake.

Time: 4hr

### Receive data from Track Model

Get the data from the track circuit signal which is the authority and speed limit

Time: 4hr

## GUI

### User Inputs

Make the user inputs alter the state of the train model

Time: 2hr

### Add Test Functionality

Add functionality allow user to input test data instead of relying on the other modules

Time: 8hr

## Debugging

Description: Getting everything to work correctly within this system and in the global system

Time: 40 hours

## Total time

Time: 76 hours