ECEN 361 Project Definition

team Laser engraver  
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# Project Scope

We are creating a laser engraver. This is a machine that will draw a design into a wood plaque using a high-power laser. This will require using motors to place the laser in the correct locations to draw the design. Useful for creating cool designs, home art, and designing products in a commercial setting.

# Lessons to Learn

Our team will have to learn about power control, PWM, controller communication, calibrating the device using inputs and outputs.

# Roles and Responsibilities

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| --- | --- | --- |
| Role | Name | Responsibilities |
| Team Leader/Hardware Lead | Sam Forbes | * Set up project in Monday.com and invite team * Manage project tasks in Monday.com * Submits group assignments * Establishes meeting schedule (1-2 times per week) * Final decision maker on hardware selection * Hardware block diagram owner * Gathers necessary hardware (purchase or loan) |
| Software Lead | Dallin Astling | * Final decision maker on software architecture * Software block diagram owner * Set up Git repository and share with team |

# Schedule

# Derived Requirements

*List the requirements for your project. Derived requirements are typically broken down into three categories: general, interface, and functional.*

## General Requirements

*General requirements detail the general aspects of the system and cover items such as size, weight, coding standards followed, licensing, etc. Usually this list is short, but not empty. Use these to help guide hardware selection.*

Coding in C

Use STM32 Nucleo board

## Interface Requirements

*Interface requirements detail the interfaces of the system and cover items such as communication standards, protocols, baud/bit rates, cloud connectivity, security, etc. Use these to help guide hardware selection and software design.*

Communication with stepper motors

Communication with computer to send g-code files

## Functional Requirements

*Functional requirements detail the features and overall functionality of the system and cover items such as specific capabilities and behaviors required to fulfill the scope of the project.*

Download and use gcode files to use in system

Engrave design into wooden plaque

# Hardware Block Diagram

***A diagram of a machine

AI-generated content may be incorrect.***

# Software Block Diagram

We don’t have a plan for our software block diagram yet, we’ll get one in the next few weeks