INDUSTRIAL SOLUTIONS LABORATORY

Company Information

Company Name	*Industrial Solutions Lab*	**Date Submitted**	*11/21/2022*
Project Title	*Design and Implementation of a Toolroom Organization System* ***(ISL_TOOL)***	**Planned Starting Semester**	*Spring 2023*

Senior Design Project Description

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project.

Please provide your estimate of staffing in the below table. The Senior Design Committee will adjust as appropriate based on scope and discipline skills.

Discipline	Number	Discipline	Number
Mechanical	3	Electrical	1
Computer		Systems	1

Company and Project Overview:

The Industrial Solutions Lab works with industry partners to develop projects for engineering students in the Senior Design program. For most of the projects, there is a build component where the students build their design in the second semester of the course. To do this, ISL provides lab facilities and tools for the students to use for this build. This project will further develop the senior design lab resources.

Project Requirements:

The main ISL Senior Design lab is being relocated from the CAB building to the first floor Cameron building. This space is being renovated in the Spring of 2023 and is expected to be in service for the Fall 2023 semester. As part of this renovation, a new design is required for tool room in the lab. The tool room is used to store a variety of hand tools, hand-held power tools and various support equipment. The objective of this project is to develop a method of organizing and storing all of the tool room items meeting the results described below.

Expected Deliverables/Results:

- Fixtures, systems and methods of organizing the equipment so that the right tool is easy to find.
- System should ensure all of the tools are protected from damage.
- Availability is a key requirement for the tool room, so any missing tool needs to be known, so system should allow for a quick visual assessment to determine if anything is missing
- Many of the power tools are battery powered. System should have an organized method for the storage and re-powering of the batteries, so that powered tools are always available.
    - Develop a "red light/green light" system – when door is closed at the end of the day, all batteries must be placed in chargers. If they are not all in chargers, have a red light indicator, if they are, a green light. Location for indicator lights to be outside the toolroom door.
    - Designed system should allow for addition of tools and equipment in the future
    - Motion detector to detect movement in the room and programmable capability to send an alert text when motion is detected outside of programmable work hours.

Disposition of Deliverables at the End of the Project:

Students are graded based on their display and presentation of their team's work product. It is mandatory that they exhibit at the Expo, so if the work product was tested at the supporter's location, it must be returned to campus for the Expo. After the expo, the team and supporter should arrange the handover of the work product to the industry supporter. This handover must be concluded within 7 days of the Expo.

List here any specific skills, requirements, specific courses, knowledge needed or suggested (If none please state none):

- Organizational skills, familiarity with hand tools.