



UNC CHARLOTTE

The WILLIAM STATES LEE COLLEGE of ENGINEERING

Senior Design Project Description

Company Name	<i>General Steel Drum</i>	Date Submitted	<i>11/12/18</i>
Project Title	<i>Transition Conveyor Redesign (STEEL_CON)</i>	Planned Starting Semester	<i>Spring 2019</i>

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	4	Electrical	2
Computer		Systems	
Other ()			

Company and Project Overview:

General Steel Drum is a Charlotte based company that manufactures steel drums for a variety of clients in the Eastern US. The operation is make to order and boasts the capability to take an order and begin shipping custom configured drums within 1-2 days. With this ability to react fast, GSD is able to avoid carrying finished goods inventory. GSD is part of Myers Container, a National company that provides containers for a variety of companies across the US. Myers has a strong commitment to sustainability and the have the ability to collect, re-condition or recycle everything they produce.





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General Steel Drum has been producing 55-gallon new steel drums since 1979. Drums serve as shipping containers for a variety of industries such as paint, chemical, food, and fragrance products. The Charlotte location is one of its seven facilities servicing mostly the southeast.

Project Requirements:

Transition Conveyor project scope is from the washer exit to the single lane lining conveyor. The problem is drums frequently jam at transition point where 2 lanes merge to one lane. The project objective is to redesign the transition to eliminate jams by integrating a new design into the current conveyor control system. Current system operates under PLC Control.

Here is a photo of two drums exiting the washer and being loaded onto the single lane conveyor:



In this photo, the two drums that just exited, have proceeded down the single lane conveyor rollers and two new drums are exiting the washer.



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Expected Deliverables/Results:

- Build, test, and troubleshoot the design
- Provide final design:
 - Drawings
 - Schematics
 - Material specifications
- The company retains the build

Disposition of Deliverables at the End of the Project:

Hardware developed is delivered to General Steel Drum at the conclusion of the Expo.

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

- PLC knowledge and familiarity