



UNC CHARLOTTE

The WILLIAM STATES LEE COLLEGE of ENGINEERING

Senior Design Project Description

Company Name	CTE Carolina CAT	Date Submitted	April 30, 2018
Project Title	Warehouse Space Optimization (CAT_OPTO)	Planned Starting Semester	Fall 2018

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project. 250 hours are expected per person.

Complete the following table if this information is known, otherwise the Senior Design Committee will develop based on the project scope:

Discipline	Number	Discipline	Number
Mechanical		Electrical	
Computer		Systems	5
Other ()			

Company and Project Overview:

Since 1926, Carolina CAT has been committed to the needs of its customers by providing superior parts, service, and sales of construction equipment, power generation, and on-highway trucks. We are proud to be a part of the elite Caterpillar dealer network. Carolina CAT operates 8 locations throughout Western North Carolina serving many industries, including: Agriculture, Forestry, Governmental, and Paving.





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Project Requirements:

Carolina CAT's main offices are located 7 miles down West WT Harris from UNC Charlotte. At this site, the company runs a large service, sales and repair operation. This project is related to the Warehouse that services these activities at this site. The objective for the team to evaluate the warehouse operation and optimize the warehouse operation in terms of layout, product flow, inventory handling equipment and other ergonomic fixturing and tooling.

The company feels that the current layout is not conducive to the efficient operation and desires to use System Engineering tools to optimize the existing space and provide a new floorplan layout. The team will need to understand the current workflow processes, the existing equipment, and all associated limitations with the warehouse. The goal would be to increase the workable volume and storage capacity of the warehouse while improving efficiency of the warehouse employees. The solution should include low-budget improvements to equipment which can improve ergonomics and overall efficiency improvements.

Expected Deliverables/Results:

- New layout design of the warehouse and quantification of improvements over the existing



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design

- Design recommendations for equipment within the warehouse
- Ideas for tooling, fixtures, devices to assist warehouse activities within agreed budget. Prototypes build as able within project budget..

Disposition of Deliverables at the End of the Project:

Provide to supporter at the end of Expo.

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

- None