



UNC CHARLOTTE

The WILLIAM STATES LEE COLLEGE of ENGINEERING

Senior Design Project Description

Company Name	Chiron America	Date Submitted	5/10/18
Project Title	Warehouse Optimization (CHIRON_OPT)	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:

The CHIRON Group, headquartered in Tuttlingen, Germany is a global company specializing in CNC-controlled vertical machining and turning centers. It has production and development facilities on four continents, along with sales and service offices and trade missions. The Group, which specializes in the high-tech segment, achieved sales of about €460 million with around 2,000 employees in 2016. Chiron America is the daughter company of the Chiron Group responsible to serve the North American market regarding sales, turn-key engineering, parts and service. See product examples below:



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Project Requirements:

The Chiron Charlotte facility builds custom turning centers for North American market applications. The building blocks are received from the main facility in Germany and configured into custom work centers per client specifications. Each order is uniquely built to serve a specific customer application. The warehouse which supports the operation has been in place since the mid-2000s. The Charlotte location has grown considerably, but the warehouse operation has is still the original layout and is in need of a redesign to better support the current operations. It is in need of an overhaul regarding optimization of parts storage, parts shipment procedures as well as parts delivery for in house projects (turn-key manufacturing).

Expected Deliverables/Results:

- Discrete-event simulation analysis
- Analysis of entire warehouse operation and focus of design and prototyping of areas that would have the biggest payback.
- Recommendation are sought for changes to work flow, storage/retrieval, processes used,



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tools, fixturing, instructions, software used, etc.

- . Project could include entire operation or a specific portion (e.g. physical storage, outgoing shipments, parts delivery for in-house projects, etc. – ideally findings would include either cost or time savings for the recommended new process
- Prototype, test and verify designs to demonstrate cost, time and quality improvements.

Disposition of Deliverables at the End of the Project:

Prototype material to be provided to Supporter after Expo

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

- Background in system engineering and logistics.