UNC CHARLOTTE
The WILLIAM STATES LEE COLLEGE *of* ENGINEERING

Senior Design Project Description for FALL 2016
Project Title: Greenhouse Gas and Water Reduction Plan (CARR_ENVIR)

Supporter: Carrier (UTC)
Supporter Technical Representative: ASSIGNED
Faculty Mentor: __X__ ASSIGNED _____ TBD (check one)
Single Team __X__ Dual Team _____ (check one)
Personnel (EN/ET): __2__ E, _____ Cp, _____ Cv, __5__ M, __1__ SE
(Complete if the number of students required is known)
Expected person-hours: (250 per student)

Description of Project:

Carrier manufactures chillers in a 335,000 square foot facility in Charlotte for the air conditioning and refrigeration industry. This facility uses large amounts of energy and generates large quantities of waste water and air handler condensate. Currently there is not reclamation and recycling of this water. This project is to analyze and evaluate the energy consumption (electricity, natural gas etc.) in the facility and design a system to reclaim and reuse this waste water and condensate. (It is currently treated but not reused.)

Initial Project Requirements (e.g. weight, size, etc.):

All major energy consumers are to be analyzed to identify areas of savings in energy consumption and greenhouse gas emissions.

Waste water sources to be evaluated are the 22 air handling units at the facility, mop water and the wash booth with iron phosphate.

The project team will have to visit the facility to gather data for the analysis.

Expected Deliverables/Results:

A complete package with recommendations for the reduction of energy consumption and reuse of the waste water is to be provided. The package will include drawings, flow diagrams, etc. and a cost estimate of the proposed system.

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

None