

Senior Design Project Description for SPRING 2017

Project Title: Fume Hood Study (FM_FUMEHD)

Supporter: UNC Charlotte Facilities Management

Supporter Technical Representative: ASSIGNED

Faculty Mentor: _____ ASSIGNED TBD (check one)

Single Team Dual Team _____ (check one)

Personnel (EN/ET): 1 E, _____ Cp, _____ Cv, 3 M, 1 SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

Description of Project:

UNC Charlotte is beginning design of a new Science Building and anticipates refurbishment of other science laboratories on campus. Fume hoods are likely to be the largest energy-related decision in these projects.

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

The project will study performance and costs of ownership (construction, maintenance, and operation) for different fume hood technologies, and provide a model for estimating impacts of the number and types of fume hoods in a building. Examples of technologies include ductless (filter) systems, variable air volume, alternate sash designs, snorkels, automation, occupancy sensors, detectors, controls, alarms, and energy recovery.

A preliminary design for the installation of each technology is to be developed.

Standard industry construction costs such as those in RSMeans may be used.

Expected Deliverables/Results:

A report showing the design, construction and operating and maintenance costs will be provided.

A design that can be used in future projects is to be provided.

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

None