

Senior Design Project Description for FALL 2016

Project Title: Campus Wireless Service Enhancement (VER_SERV)

Supporter: Verizon Wireless

Supporter Technical Representative: ASSIGNED

Faculty Mentor: _____ ASSIGNED TBD (check one)

Single Team Dual Team _____ (check one)

Personnel (EN/ET): 1 E, 2 Cp, _____ Cv, _____ M, 2 SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

Description of Project:

A detailed and thorough radio frequency (RF) analysis of the entire UNC Charlotte campus will help us determine how to enhance the Verizon Wireless network on campus for the betterment of all students and faculty. In addition, designs of possible cell sites, small cells, and in building systems will help us build solutions that can better serve our customers on campus.

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

1. Understand the tools VZW utilizes in order to analyze coverage
2. Complete thorough RF analysis for UNC Charlotte's entire main campus and engineering campus including all sports fields (outdoors)
3. Complete thorough RF analysis for UNC Charlotte's dormitories and all academic buildings including the library (indoors)
4. Generate possible design suggestions in order to enhance the coverage and better meet the capacity needs of the entire UNC Charlotte campus
5. Complete RF offload analysis once the UNCC cell site is on air (Phase II)
6. Design additional coverage/capacity solutions needed on campus to better serve all customers

Expected Deliverables/Results:

1. Presentations containing the thorough RF analysis of the entire campus
2. Report describing the current performance of VZW's network on campus
3. Report illustrating the design suggestions of how to enhance the coverage and better meet the capacity needs of campus
4. Offload analysis illustrating the changes of performance on campus before and after the UNCC cell site goes on air (Phase II)

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

At least one student should have taken ECGR 3123.