NET 4700 Syllabus

This course is designed to be a capstone to your program here at Weber State University. The learning outcomes expected are:

- provide students with an understanding of the different traffic analysis methods
- be able to properly engineer voice networks with adequate capacities for business phone systems.
- students will understand the impact voice and voice applications have on networks
- be able to engineer solutions to accommodate voice on the network.

- Simulate a real world network design
- Based on this simulation provide the opportunity to design conceptually:

    1. LAN infrastructure
    2. WAN design
    3. carrier selection
    4. service selection
    5. equipment required
    6. capacity planning

Other than traffic analysis, there should not be any new terms or technologies presented. Hopefully you have learned everything needed to complete this course in previous classes. There will be class time allocated in the first half of the semester to learn voice traffic analysis. The course text is traffic tables used to complete the quizzes meant to help you understand the concepts of voice traffic engineering. The results will be used to help determine/measure classroom participation which can raise or lower your final grade by a minimum of a half step. (ie: B+ to A- because of classroom participation).

The majority of the course will be spent on preparing and presenting a complete network design which is worth a majority of each students grade. Each student will participate in a group project where each group will submit a single report complete with network diagrams describing what they are proposing and why. The class will be randomly assigned into teams by Canvas. In addition to the network report, each student will provide an outline of what their team did individually toward completing the project. This give the Instructor feedback to help decide if everyone in the group deserves the same grade. All reports will be submitted electronically via Canvas.

The report will include:

- overview of the company's needs and applications that need to be supported.
- capacity estimates by application

- verbal descriptions of the LAN and WAN options with justification supporting your recommendations
- network diagrams of the LAN for each location (5 locations are needed as a minimum), complete rack diagrams, and WAN diagrams.
- everything and anything you decide your network needs.

The instructor's role is to advise and answer questions. The student's role is to design a complete network working with your group. Class time will be spent with the instructor presenting the different components that comprise a business network and how they are used today as well as time for the groups to work together on your projects. The instructor has no preplanned "lecture" to present each week, each week's discussions will be based on the unique and individual needs of each class. The only way for the instructor to understand your needs is for you to interact and be involved with the discussions. The more you ask the more you can learn.

The instructor will review each report and give one of four scores (1, 2, 3, 4) which will represent your grade.

The scores are:

1. a failing grade meaning the student did not demonstrate adequate knowledge or participation to pass the class
2. a passing grade equal to a C+ which is the minimum required to pass/graduate
3. a better than average grade equal to a B+ showing extra effort, demonstrated understanding of the concepts by applying previous experiences or learning to the project
4. an exceptional grade equal to an A for excellent diagrams, clear and precise presentation of all of the options considered complete with pros and cons for each option, justification of why you opted for the solution presented, an attention to detail, and successful collaboration as a team. You will also need to have the report submitted before the last week of class.

The score you receive does have some level of subjectivity. Remember the stated goal of the class is for you to demonstrate you have learned something in the program and are ready to enter the workforce.

COVID or other situations may force a change in class meeting arrangements. The format of the course lends itself to meeting virtually if needed with little to no change in material or schedule.

The instructor is an adjunct and as such does not have an office or office hours. He will make himself available out side of class if needed. Use Canvas to submit questions outside of class so that everyone will benefit from the answer. You can email the instructor anytime at lwelch@weber.edu with individual issues.

Course Fees: Course fees in the Network Management Technology major are designed to cover the costs of equipment maintenance and replacement, software, consumable materials and supplies, instructional resources, and certification.