University of Kentucky
School of Journalism and Telecommunications

MAS 535-001: *Telecommunications Network Management*
Spring 2014   115 Grehan Building
Tuesdays and Thursdays 2:00 PM – 3:15 PM

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COURSE DESCRIPTION

Over the past several decades, changes in market forces, technology, and regulation have transformed the public network infrastructure from a traditional monopoly into an increasingly diverse network of networks. These changes complicate considerably aspirations for an advanced infrastructure, while at the same time making it possible. Federal public policies are mired in disputes of competing interests, while state public utility commissions are grappling with issues much more complex than any they have faced before. The growth of competition, the convergence of electronic media, and the breakup and subsequent realignment of the Bell System have combined to upset the traditional arrangement, leaving regulators and policy makers casting about for a new system, in which one can no longer simply equate the telecommunications infrastructure with the telephone industry.

The major focus of this course will be the design and management of telecommunications networks and resources, with the goal of providing cost-effective and efficient internal and external corporate communications.   In order to achieve our educational aims, we will attempt to bring together both the technical and the business aspects of telecommunications by highlighting the role of the "hybrid" network designer – in other words, the person who understands and speaks the language of both business and technology, and who can serve as the critical liaison between management and the technical professionals.

This is not a highly technical course. However, we will navigate an overview of a wide range of communications technologies, examining their capabilities and limitations, in order to understand fully appropriate applications of technologies to meet management, end user, and consumer needs. In addition to gaining a thorough understanding of the technological components of telecommunications networks, we will be examining needs assessment procedures, budgetary analyses, and the advantages and disadvantages of various technological configurations. Of course, we will always bear in mind the human and organizational factors to be taken into account in the design and implementation of telecommunications systems. For such systems to be effective, an appropriate "match" between the social system and the technical system must be found.

REQUIRED READING

You're in luck. There is no required text, per se. That doesn't mean you don't have required reading, or even that you should get away without spending a little money on a book. The vast majority of the readings can be found on the MAS 535 website in PDF, RTF, or PPT format. I do recommend you purchase a book, however. It is a relatively inexpensive book (especially if you get from Amazon.com), mainly because it is such a bestseller. You will find it invaluable and indispensable, especially after you have graduated and have to act like you know what you're talking about in the working world. Billed as the official dictionary of telecommunications and the Internet, it is:

Newton, H. (February, 2013). Newton's Telecom Dictionary (27th ed.). New York: CMP Books.

The current edition is the 27th.   However, the 26th will do.

EVALUATION EXPECTATIONS

Your grade for this course will be based on your weighted and averaged scores for a semester project, a mid-term examination, a final examination, five HAT exercises, and your attendance in class.

Project	20%
Midterm Exam	15%
Final Exam	15%
HAT Exercises	25%
Paper Presentation	15%
Attendance	10%

Project: The project will begin with you choosing a business firm or some other organization with which you are familiar in some way. Your choice will require my approval. You will then prepare a report for the CEO or president concerning the company's telecommunications status quo, including a thorough needs assessment, and recommend an enhanced, upgraded, new-and-improved two-option telecommunications network, along with implementation, evaluation, and training procedures. You will receive more detailed guidelines for the project later in the semester.

Examinations: Both of the exams are take-home exams and will consist of a number of short-answer questions, along with one or two essay or diagramming questions. In the interests of higher academic success and happiness, I will magnanimously provide you with my notes throughout the semester and a general indication of the nature of potential essay questions before each exam.

HAT Exercises: There will be five HAT exercises, each consisting of a number of objective items such as multiple choice, true or false, matching questions, plus the possibility of diagramming tasks. Each HAT will be worth five percent of your grade, for a total of 25 percent. There isn't really any traditional "homework" in this class beyond the reading, so the purpose of the HATS is simply to help ensure that you do the required reading for the course so that we may have some coherent discussion. The subject material of each HAT will be the reading due on the date the HAT is given. I will let you know at least a week in advance what these readings are.

Paper Presentation: This assignment requires you to write a 6-8 page explanation and analysis of some specific component of the voice and data networking industry. I'll be giving you a list of possible topics from which to choose, but you can also suggest your own topic, subject to my approval. Additionally, on an assigned date, you will make a 10-15 minute presentation to the class based on your paper. You will also provide a brief (one page), comprehensible outline to be distributed to each student.

Attendance: Attendance for each class is strictly voluntary. It's not my responsibility to make sure you come to class. After all, each of you is old enough to drive, vote, serve in the military, think for yourself, and bear the consequences of your actions. With that said, the consequences of your actions if you miss class will be the loss of five percent of your attendance grade for every absence, unless you notify me of your absence beforehand or have a verifiable excuse after the fact.

Grading Policy:

A   Excellent work, 90 – 100
B   Good work, 80 – 90
C   Barely satisfactory work, 70 – 80
D   Inferior work, 60 – 70
E   Unacceptable work, below 60

RESPECT FOR DIVERSE VIEWPOINTS

As a member of the most commonly discriminated-against group throughout human history (I'm left-handed), I consider the diversity that students bring to this class a highly valuable resource and one of the benefits of your college experience. During the semester, we will discuss topics related to communication technology and social change that touch upon aspects of social and cultural diversity, such as race, ethnicity, gender, sexual orientation, disability, age, socioeconomic status, politics, and religion. I encourage you to express your thoughts on those aspects relevant to your background, listen respectfully to your fellow students, and be open to learning from people who hold views different than yours.

THE USUAL WARNINGS

Make-up exams, HATs, and late papers will not be allowed without a valid and verifiable reason. The definition of valid and verifiable is left totally to my discretion. It is required that all work submitted for a grade is the original work of the student whose name appears on it, and that the work was prepared expressly for this course. Any use of a cell phone or digital assistant or even the appearance of these devices during an exam will be construed as cheating. Any student caught cheating or copying from another's exam or HAT or in any way plagiarizing from any source, whether published or not, will be sanctioned according to University rules. At the very least, he or she will receive a failing grade for the course.

CLASS SCHEDULE

January 16	Introduction to the course and to each other.
January 21	Telecommunications: The Opportunity and the Challenge
January 23	Linking Business and Technology: The Telecommunications Decision Sequence
January 28	Linking Business and Technology: The Telecommunications Decision Sequence
January 30	Applied Protocols Experimentation Lab: Switches and Routers
February 4	Introduction to Networked Computing **HAT #1**
February 6	Transmission Basics: Terminals and Workstations
February 11	Transmission Basics: Transmission Links
February 13	Transmission Basics: Transmission Methods **Student Presentations**
February 18	Networked Business Applications **HAT #2**
February 20	Transmission Basics: Transmission Methods **Student Presentations**
February 25	Telecommunications Network Fundamentals: Types of Networks
February 27	Telecommunications Network Fundamentals: Types of Networks **Student Presentations**
March 4	Computers, Networks, and Organizations **HAT #3**
March 6	Review for the midterm exam/Catch-up **Student Presentations**
March 10 (Monday)	**Midterm Exam due in my office by noon**
March 11	**No Class**
March 13	Reflection on the Midterm Exam and other soul-searching activities **Student Presentations**

March 17-22 (Spring Break)	**Academic holidays** – show up only if you are completely clueless
March 25	Telecommunications Network Fundamentals: Standards and Architecture
March 27	Telecommunications Network Fundamentals: Standards and Architecture **Student Presentations**
April 1	Networked Software Architecture and Standardization **HAT #4**
April 3	Telecommunications Network Fundamentals: Standards and Architecture **Student Presentations**
April 8	Applied Protocols Experimentation Lab: Network Security
April 10	The Telecommunications Decision Sequence: Managing Network Design **Student Presentations**
April 15	Trustworthiness: Reliability and Security **HAT #5**
April 17	**Student Presentations**
April 22	Managing the Telecommunications Resource: Security
April 24	Managing the Telecommunications Resource: Network Management
April 29	Guest Speaker **Semester Project Due**
May 1	Review, Wrap-up, Reflection – or something! **Teaching and Course Evaluations**
May 8 (Thursday)	**Final Exam due in my office by noon**