

# TELE 730

## Telecommunications Management

Fall, 2001

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### Course Objectives

TELE 730 is primarily focused on *the management of voice telecommunications systems* in organizations. I have **four principle objectives** for 730 this semester.

- **First**, the student will learn the basics of voice telecommunications technologies. As with any computer network, voice telecom technologies include:
  1. the CPUs or servers (switches, routers, and voice processing peripherals)
  2. transmission technologies (both *transport technologies* in the network and *access technologies* for the local loop/last mile to the home or office desktop)
  3. terminal devices (telephones and desktop computers, as well as fax machines, pagers, and PDAs)
  4. the software and firmware that runs with this hardware (software applications for servers and terminals, and software protocols used to encode voice & data for both transport through the backbone networks and in the local loop).

Because voice and data are converging in a variety of interesting ways, we will also deal with computer networks and applications from time to time. However, this course is not primarily about computers, LANs, WANs, routers, and the world of data transport and applications.

- **Second**, the student will learn the basic principles of telecommunications management in organizations, and their relationship to technical, organizational, personnel, and management issues. Knowledge of the technology goes hand-in-hand with effective telecommunications management.
- The **third** objective is to learn how specific organizations are using the systems and employing the principles we will study. Each student will periodically interview the telecom management team of a local organization to evaluate how their real world experiences compare with textbook descriptions. Students will have an opportunity to share this information with the class, providing a rich learning environment beyond what any one of us could bring to the classroom.
- The **fourth** objective is to assist you in integrating the knowledge of individual technologies and their management with general principles in other disciplines that also impact how people use telecommunications technologies – such as human factors, ergonomics, communication, and organizational behavior.

### Required Textbooks & Readings

Green, J. H. (2001). *Irwin handbook of telecommunications management* (3<sup>rd</sup> ed.). New York: McGraw-Hill Professional Publishing. (ISBN: 0071370587; list price: \$95; available online for \$76 plus shipping)

Green, J. H. (2000). *Irwin handbook of telecommunications* (4<sup>th</sup> ed.). New York: McGraw-Hill Professional Publishing. (ISBN: 0071355545; list price: \$95; available online for \$76 plus shipping)

*Recommended (but not required) Book*

Newton, H. (2000). *Newton's Telecom Dictionary*, 17<sup>th</sup> Ed. New York: CMP Books.

(Paperback, ISBN: 1578200695; list price: \$35; available online for \$28 plus shipping)

Note: virtually ANY edition of this book is fine – there have been six (6) editions since 1997!

## **Policies and Procedures**

### ***Implicit and Explicit Commitments***

Every university course involves a series of agreements made by the student, the professor, and the university – whether implicit or explicit. I prefer to make these commitments explicit, so there is no misunderstanding about them and so each of us is aware of any failure to keep them. I do this by providing you with a list – and asking you to formally commit to them. I will also describe (in class) the process we will use whenever someone (you or me) fails to honor any particular commitment: staying in communication and making a request. Some of these commitments are discussed below.

### **Attendance**

Learning in this course takes two major forms--cognitive and experiential. The latter requires participation and observation in common classroom experiences. Therefore, **attendance is required**. Why? Simply stated, it does not work to miss class (for me, for you, or for your classmates). We meet only a small number of times this semester. The first step in receiving full credit for participation is to come to all the classes. In addition, being late for class does not work – for you, for me, or for your classmates. Please be on time for all classes, and in your seat at the end of all breaks.

### **Staying in Communication**

Staying in communication is something that I value highly. Since it is also valued in the business world, it is great training for all of us. In the course of the semester, you may find that one of your outside commitments (to work, family, health, play, etc.) supersedes your commitment to one of the course agreements (being in class, being on time, completing an assignment on time, etc.). When this happens, please communicate with me as soon as possible.

Please note – you're not a bad student when you miss a commitment, and you're not "wrong" to choose another commitment over one of the course commitments (or vice versa). All I ask is that you deal with such situations with integrity and power. This means communicating your intentions and behavior clearly and in advance. Often, people are not clear about such situations in their own minds, or not realistic about what is possible. Sometimes we dread telling someone that we will break (or have broken) a commitment. Yet putting off the communication only makes it harder to clear it up later. And until you straighten it out, you are out of integrity. When we are out of integrity we are "incomplete" and thus not dealing powerfully with life. When we complete issues (such as having a conversation about a missed commitment), we can get back in integrity and can once again operate at full power. And I want each of us operating at full power!

Consequently, my request to you is: **communicate with me as soon as you know you will not keep one of the course agreements**. Staying in communication is considered part of your class participation.

### **Making Requests**

If you discover that you will miss one of the assignment deadlines you can make a request of me – for an extension or some other consideration. If I grant a request it means I will waive the original penalty associated with the missed commitment. Any request must be very specific – for example, propose a new date and time by which you will complete the assignment. Such requests must be made in advance of any deadline – the earlier the better (once the deadline passes you've taken away my power to grant the request). Please note that requests sometimes get the answer yes and sometimes the answer no.

### E-Mail & Computer Skills Required

We will be using electronic mail frequently this semester. Please **send me an e-mail immediately (as soon as possible) after the first class** – from the e-mail account that you wish me to use for you. I will occasionally send messages to the class or to specific people, and you will find e-mail helpful in staying in touch with me and your classmates. Please note:

- **All out-of-class written assignments *must* be sent to me as MS Word attachments.**
- **All written assignments are due at midnight on the day they are due.**

You are expected to know how to use e-mail and send *MS Word* documents as *attachments*. You are also expected to spend at least one (1) hour per week online, learning/using a variety of communication technologies.

### Spelling/Vocabulary/Grammar

While it should go without saying, I'll say it anyway: students must use correct spelling and punctuation in all written assignments. The use of appropriate grammar in oral and written communication is also very important. Please read (and then edit) your work carefully before you hand it in.

### Policy on Intellectual Dishonesty

Intellectual dishonesty is a fancy term for *cheating*. While it should go without saying, I'll say it anyway: cheating and plagiarism in any form, regardless of any justification, will not be tolerated. Any student whom the instructor has sufficient evidence to believe has cheated or plagiarized in the course will receive an automatic "F" (failure) in the course, and referred for appropriate disciplinary action. There will be no exceptions.

Please note that the most common form of intellectual dishonesty is plagiarism. Often, students are unaware of, or uncertain about, the various forms of plagiarism. For this reason, I have highlighted the definition of plagiarism in the GMU honor Code below. One component of intellectual honesty involves crediting the ideas of others through citations in the text and full references at the end of your work. **Each of your written assignments must be in APA style.** If references are needed – though they are not typically used in the Field Reports or chapter summaries for this course – you must have a set of (APA style) citations in the text, and an accompanying set of (APA style) references at the end, documenting the source of any ideas that are not your own.

Policies related to cheating/plagiarism (as well as excused absences, withdrawal, incompletes, final exams and common exams) can be found in your copy of the *GMU Student Handbook* and/or the current semester's *Schedule of Classes*. As students and faculty at George Mason University, we are all responsible for adhering to university policies. You should be particularly familiar with the George Mason University Honor Code, which states:

To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of George Mason University and with the desire for greater academic and personal achievement, we, the members of George Mason University, have set forth the following code of honor.

#### **I. The Honor Committee**

The Honor Committee is a group of students elected from the student body whose primary and indispensable duty is to instill the concept and spirit of the Honor Code within the student body. The secondary function of this group shall be to sit as a hearing committee on all alleged violations of the code.

#### **II. Extent of the Honor Code**

Duties of the Honor Committee:

The Honor Code of George Mason University shall deal specifically with

- A. Cheating and attempted cheating
- B. Plagiarism
- C. Lying
- D. Stealing

A. Cheating encompasses the following:

1. The willful giving or receiving of an unauthorized, unfair, dishonest, or unscrupulous advantage in academic work over other students.

2. The above may be accomplished by any means whatsoever, including, but not limited to, the following: fraud, duress, deception, theft, trick, talking, signs, gestures, copying from another student, and the unauthorized use of study aids, memoranda, books, data or other information.
3. Attempted Cheating.
  - B. Plagiarism encompasses the following:**
    1. **Presenting as one's own the works, the work, or the opinions of someone else without proper acknowledgement.**
    2. **Borrowing the sequence of ideas, the arrangement of material, or the pattern of thought of someone else without proper acknowledgement.**
  - C. Lying encompasses the following:**

The willful and knowledgeable telling of an untruth, as well as any form of deceit, attempted deceit, or fraud in an oral or written statement relating to academic work. This includes but is not limited to:

    1. Lying to administration and faculty members.
    2. Falsifying any University documents by mutilation, addition, or deletion.
    3. Lying to Honor Committee Members and counsels during investigation and hearing. This may constitute a second charge, with the Committee members who acted as judges during that specific hearing acting as accusers.
  - D. Stealing encompasses the following:**

Taking or appropriating without the permission to do so, and with the intent to keep or to make use of wrongfully, property belonging to any member of the George Mason University community or any property located on the University campus. This section is relevant only to academic work and related materials.

## **Evaluation and Grading Criteria**

Academic tradition and rules require that your performance be evaluated. Scores in three major performance areas will determine final grades:

		<b><u>Percent</u></b>
<i>Tests</i>	4 Quizzes	12
	Final Exam	30
<i>Written Assignments</i>	2 Summaries (& Present) Individual Chapters (IC1-IC2)	14
	2 Summaries of Class Chapters (CC1-CC2)	10
	4 Field Reports (FR1-FR4)	28
<i>In-Class Work</i>	Class Discussion & Participation	<u>6</u>
<b>TOTAL</b>		<b>100</b>

Final letter grades will be assigned based on the following point distribution:

<b><u>Grade</u></b>	<b><u>My Point Range</u></b>	<b><u>GMU Grade Points</u></b>		<b><u>Grade</u></b>	<b><u>My Point Range</u></b>	<b><u>GMU Grade Points</u></b>
<b>A</b>	93-100	4.0		<b>B</b>	80-86	3.0
<b>A-</b>	90-92	3.67		<b>C</b>	70-79	2.0
<b>B+</b>	87-89	3.33		<b>F</b>	Below 70	0.0

Scores in between any of these ranges will be rounded up if the fraction is 0.5 or higher, and rounded down if below 0.5 points.

### **Quizzes**

Four (4) brief quizzes, made up of (8-18) objective questions, will be given on assigned readings. I will eliminate your lowest quiz. See the Course Schedule below for dates.

### Final Exam

Students will take a comprehensive final exam on Mon., June 25, 7:00 – 10:00 pm. It will consist primarily of short answer and essay questions.

### Summaries of Individual Chapters (IC1-IC2)

Our two textbooks contain 75 chapters and over 1600 pages of (mostly) useful information about telecom and telecom management. Because you cannot individually read all – or even most of this – in a single course, each student is responsible for summarizing two (2) of the textbook chapters that we are not reading as a class.

Your summary of each individual chapter (IC) will include: a) an executive summary of 2-6 “bullet points” overviewing the content of the chapter, followed by a detailed summary, covering much of what is in the chapter you read (you can use bullet points to shorten this content as well). These will be part of your contribution to a web site for TELE 730 and the MA students here at GMU.

Each detailed summary should be 2-4 (single-spaced) pages of “bullet” style text. Remember, these should be summaries, not exhaustive treatments of all the points made. Your job is to pull out “overview” information and present it to the class. A couple important points to consider:

- Your executive summary comes at the beginning of your detailed summary and provides a “preview”
- Your job is to summarize the topic, not simply the chapter
- Green doesn’t always provide a neat definition or summary of a topic, but gets right into the details of it. Your job is to provide such summary information, even if Green does not
- For example, in Chapter 31, Green *infers* (but never actually says) that the topic, *Enterprise Networks*, is the same as a private network. He also points out that many small companies can now have private networks by having virtual private networks (VPNs). Your job is to sift through this and spell it out clearly for all of us.
- To that end, always look up your topic, and related terms, in your *Newton’s Telecom Dictionary* for an additional perspective. Incorporate that information where it makes sense.
- I have a “preliminary summary” of many of these chapters already. I will provide it to you when you ask for it. Your job then is to edit, improve, and re-work the summary so it is ready for the web. You will need to add

**All IC summaries are due by e-mail at the time of the class listed in the syllabus.** Late Summaries are docked one-half letter grade per day. Finally, you will then bring copies of the executive summary to class for everyone, and provide us with a 10-12 minute overview of the topic you were assigned. I will assign all of your chapters to you within two weeks. (You are not responsible for any of these Individual Summary (IC) chapters on the quizzes or on the Final Exam.)

### Summaries of Class Chapters (CC)

This semester each of you will also summarize two (2) of the chapters we read together as a class. My intent is to eventually have a summary of the entire text up on the 730 web site. We will follow the same procedure for these summaries as for the IC Summaries above (an executive summary, followed by detailed summary – follow the directions provided above for the IC summaries). Note that:

- These CC Summaries are summaries of chapters you will have read for class anyway
- You will not present these summaries in class and you do not need to provide copies to the class.

**All CC summaries are due by e-mail at midnight on the class day listed in the syllabus.** Late summaries are docked one-half letter grade per day.

### Individual Field Reports (FR1-FR4)

Each student is expected to find a company to work with, and secure the cooperation of the telecom manager. You will be asked to interview this person four (4) times during the course. I will e-mail you an *Interview Protocol* for each Field Report. If you know you will need help locating a company, please discuss it with me immediately.

Each student will submit four (4) 2-4 page Field Reports (FRs), summarizing the results of your interviews with the telecom manager. Each FR should highlight how the chosen organization manages and uses the communication or information system(s) examined in that particular module.

**All Field Reports are due by e-mail at midnight on the class day listed in the syllabus** (A hard copy to me at class is helpful but not necessary). You should, however, bring a copy to class for yourself. Late Field Reports are docked one-half letter grade per day.

You should request four (4) one-hour interviews (approximately weeks 5, 8, 10, & 12). At least one of these interviews (preferably the first) should include an on-site tour of the company's facilities. If the company is also your place of work, perhaps all interviews can be in person. Please keep in mind:

- You must schedule these interviews far enough in advance to ensure you can complete the interview and the write-up by the assigned due date
- Your telecom manager contacts are very busy professionals, working long hours and facing unexpected situations and emergencies every week (at least one of your scheduled meetings will likely be re-scheduled by your contact person)
- Late assignments – regardless of the reason – are subject to penalties
- These folks have generously agreed to give you some of their time – however, it is up to you to make this happen
- make it YOUR job to reach your telecom management “hosts.” Call well in advance of your due dates. Leave messages, but don't wait for them to call back (and please don't tell me they “never called you back”). It is YOUR job to get to them, not vice versa!

### Class Discussion and Participation

This is a relatively small graduate seminar, so each student is expected to make contributes to the class discussion each week. Please come prepared to contribute, and then speak up!

## Course Schedule

*Fall, 2001 GMU Deadlines*      Sept. 5:      Last day to drop with no tuition liability  
 Sept. 28:      Last day to drop

<b>Date</b>	<b><u>Topic</u></b>	<b><u>Assignments/Readings Due</u></b>
8/28	Week1      Course Overview; Basics of Telecom Transmission I Telecom Management Issues I: Planning	
9/4	Week2      Basics of Transmission II Telecom Management Issues II: Planning	TM1,3,4
9/11	Week3      Basics of Transmission III Telecom Management Issues III: Operations	TM24; T1,2,3; <b>Quiz1</b>
9/18	Week4      Basics of Transmission IV Telecom Management Issues IV: Operations; <b>IC1 Presentations</b>	<b>IC1</b>
9/25	Week5      Basics of Transmission V Telecom Management Issues V: Operations; <b>IC1 Presentations</b>	T4,5,8
10/2	Week6      PSTN & Switching; Local and LD Service	TM10,11, T11; <b>Quiz2</b>
10/9	<i>No Class (Columbus Day recess)</i>	<b>FR1</b>
10/16	Week7      Customer Premises Equipment (CPE): Telephony and Call Coverage Technologies: PBXs, Key Systems, Telephones	TM14; T22,23,24,28, <b>CC1</b>
10/23	Week8      CPE: Telephony and Call Coverage Technologies: AA, VM	TM16, T27,30; <b>Quiz3</b>
10/30	Week9 <i>Tour: GMU Voice &amp; Data Facilities NCF 2001 (Chicago); See www.iec.org for information.</i>	TM13, <b>FR2</b>
11/6	Week10      Call Processing & Call Centers Technologies: ACDs, AA, IRVs, CTI	TM15, T16,25; <b>Quiz4</b>
11/13	Week11 <i>Tour: Kaiser Permanente Call Center</i>	<b>IC2</b>
11/14 (Wed.)	<i>GMU Telecommunications Event, 5:30-8:30 pm</i>	
11/20	Week12      Telecom Management Issues VI: Cost Control; <b>IC2 Presentations</b>	<b>FR3</b>
11/27	Week13      Telecom Management Issues VI: Wiring; <b>IC2 Presentations</b>	T7,10, <b>CC2</b>
12/4	Week14      Voice, Data & Convergence	<b>FR4</b>
12/11	Final Exam - Tues., Dec. 11, 7:20 – 10:00 pm	

### Explanation of Codes for Readings

TM    Green, J. H. (2001). *Irwin handbook of telecommunications management*. New York: McGraw-Hill.

T    Green, J. H. (2000). *Irwin handbook of telecommunications*. New York: McGraw-Hill.

### Explanation of Codes for Written Deliverables (in **Bold**)

**FR**    Field Report (FR1-FR4, electronic versions due at midnight)

**IC**    Individual Chapter Summary (IC1-IC2, electronic versions due at class time, students **present** in class)

**CC**    Class Chapter Summary (CC1-CC2, electronic versions due at midnight)

**Quiz**    In-class Quiz (Quiz1-Quiz4)

