MGSC 890: Business Telecommunications

Course Time: T/Th 2:00 - 3:15 p.m.  Instructor: Dr. Nancy Lightner
Room: BA003  Office: BA 720
Telephone: 777-6495
E-Mail  Nlightner@moore.sc.edu
Office Hours: Tuesday and Thursday 11:30 - 12:30, and 3:15 - 4:15 and by appointment
Text: Business Data Communications and Networking (7th edition)
The author's web site contains additional interesting links. See http://www.kelley.indiana.edu/ardennis/s305.htm.

• This course is supported by a web site via the Blackboard system. Instructions for use are contained later in this document.

• All PowerPoint overheads used in class are on-line (using the Blackboard system) as well as quizzes, exams and projects from previous semesters.

The objective of this course is to provide a basic understanding of the technical and management aspects of business data communications and networking. This course builds on the knowledge and skills you have acquired in prior BIS courses and presumes a general understanding of information technology and its applications. This syllabus provides a general plan for the course, but some deviations may be necessary.

The course has three sections. The first section provides an introduction to data communications and applications. The second section examines some commonly available network technologies and their capabilities (e.g. Ethernet, ATM). The third section provides a summary of network management and security.

Grading Scheme
Midterm Exam 30
Final Exam 35
Project 15
Assignments/Quizzes 20
100

Grades will be assigned on the following scale:
A=90+, B+=87-89, B=80-86, C+=77-79, C=70-76, D+=67-69, D=60-66, F=below 60
The practice of 'curving' test scores is exercised where necessary and for the final grade. However, please do not find yourself in the position where you are counting on a final curve of more than 5% to get the grade you want from the class.
Additional information about the exams, assignments and projects will be provided in class and on line. The scheduled due dates for assignments and project activities are subject to change, but all changes will be discussed in class. All students must take exams at the scheduled times except for emergencies. Make-up exams taken after the regularly scheduled exam will be essay format. Assignments are due on or before the start of class on the due date; no late assignments will be accepted. Students are expected to attend classes and are responsible for obtaining information from missed classes from other students (this includes changes to due dates and assignments). Submit homeworks and assignments via email or other electronic means to my mailbox (nlightner@moore.sc.edu) and not the Blackboard digital dropbox please.

In class assignments/quizzes will be conducted as part of the course. These exercises will be included in the Assignments/Quizzes section of the course grading. Additional assignments may be assigned throughout the semester. When completing assignments, please note that I use the Microsoft Office suite, therefore sending me compatible files are essential to my grading efforts. Please do not send me emails with .zip or .pdf files as an attachment as our virus checker will remove them as virus risks.

Finally, if you are experiencing any problem with the course, please come and talk with me. You will find me reasonable in giving due consideration to any difficulty you may be having. However, remember that it is your grade and you are responsible for earning the marks you receive.

Class policies

It is expected that you have registered for this class because of an interest in learning about telecommunications. In order to enhance the learning experience during every class period, I ask that you limit unnecessary interruptions, such as leaving to use the restroom and cellular phone usage. It is also expected that the entire class follows common courtesies such as not speaking when anyone else is addressing the class.

Keep in mind that this is a course in the school of business. In accordance with that, the focus of the class is on how telecommunications affects business and its future. Since it is expected that you will become part of a technical business environment, one of the things you will be responsible for is understanding the language of telecommunications and technology. The 'language' of any field, technical or not, involves the use of acronyms. Therefore, we will have a quiz including acronyms after each chapter lecture for most chapters of the chapters covered. Some of the chapters warrant multiple quizzes. Each quiz will cover the material since the last quiz. I will drop one quiz grade for each five quizzes taken. My goal for the class is ten quizzes, so you may drop two.

The Changing World of Telecommunications

Technology is constantly changing and especially the technology and use of it in the world of telecommunications. Arguably, no one in the world knows about and understands every aspect of telecommunications. I read some of the popular press and will attempt to interject new
developments into the course where relevant. If you discover a topic or technology that is relevant to class discussion, please feel free to mention it in class.

**Using the Blackboard system**

In order to access this course on line, you will need the following:

- The latest version of Netscape Communicator or Microsoft Internet Explorer (These programs can be downloaded from the web for free from http://www.netscape.com, or http://www.Microsoft.com).
- Username and password. If you were a student in a Blackboard course last semester, your password will be whatever you changed it to when you updated your password under Student Tools.
- To find your username, do the following:
  - Log on to the VIP system at http://vip.sc.edu
  - Click on 'Technology' and choose 'show me Network Username'. Make a note of your username.

To access the course on line:

- Point your browser to http://blackboard.sc.edu. Click on Login and enter your user name and password. If you are a new Blackboard user, your password is also your Network Username (its all UPPER CASE).
- Logging in will take you to a page called "My Blackboard", your personalized Blackboard page. Click on the Telecommunications course. To change your password and other personal information, click on "Student Tools" then "Change Your Information". Enter a new secure password and a valid e-mail address so that you will be able to communicate with me and other students during the course.

If you have difficulty logging on to the Blackboard CourseInfo server or forget your password, call Computer Services at 777-1800 for assistance.

Once you've logged on to your course you can access the complete documentation for the use of Blackboard CourseInfo by clicking on "Student Tools", then "Student Manual".

Please update your email address on Blackboard so that I may contact you and your group. By default, your Gamecock Email (GEM) address (username@mailbox.sc.edu) will be your default email address on Blackboard, but you can change this to whatever email address you prefer to use for class communications. From the MY USC menu, select Personal Information from the Tools menu, then Edit Personal Information. Be sure you click on Submit in step 3 to register your changes, and then OK to verify your changes.

If you want to use the GEM email system for class communications, you can get more info on this package at: [http://www.sc.edu/ars/webmail/faq.html](http://www.sc.edu/ars/webmail/faq.html)
Tentative Schedule (These times/days may change depending on the pace of the course).

<table>
<thead>
<tr>
<th>Number of days (approximately)</th>
<th>Chapter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>Introduction to data communication</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Network fundamentals</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>Physical layer</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Data link layer</td>
</tr>
<tr>
<td>~ Thurs., Feb 27</td>
<td>-</td>
<td>Mid-term exam</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Network &amp; transport layer</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>LANs</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>Backbone networks</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>MAN &amp; WAN</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>Network security</td>
</tr>
<tr>
<td>Monday, May 5</td>
<td></td>
<td>Final exam (2:00 p.m. in class room)</td>
</tr>
</tbody>
</table>

Important class dates:

Feb. 18       Project Proposal
Mar. 20       Project Outline
Feb. 25       Assignment 1 due
Feb. 27       Midterm exam – approximate date
Apr. 29       Projects due – last day of class
May 2         Assignment 2 due
May 5         Final Exam
(Mon.) 2:00 p.m.

Important administrative dates:

Jan. 17       Last day to change a course schedule or drop a course without a grade of “W” being recorded.
Feb. 24       Last day to drop a course or withdraw without a grade of “WF” being recorded.
Mar. 9 - 16   Spring break – no classes

Assignments:

Assignments are due at the start of class on the due date; no late assignments will be accepted. You may submit assignments either as email, on disk or as a hard copy. Assignments are designed to be learning tools to help prepare for the exams. I encourage you to work in groups to discuss the questions and issues on the assignments. If you work on an assignment or homework problem as a group, please submit one copy and include all those that participated in the work.

Any student that makes a reasonable attempt at all assignment questions will receive full points.
**Assignment 1**

1. Chapter 1 Question 13
2. Chapter 1 Question 23
3. Chapter 2 Question 13
4. Chapter 2 Minicase I Deals-R-Us Brokers (Part 1)
5. Chapter 3 Question 28
6. Chapter 3 Question 33
7. Chapter 3 Question 36
8. Chapter 3 Exercise 3-5
   Here's what to do for exercise 3-5 parts g,h and i. Follow the QAM handout in terms of setting up a table with headings: Bit value, Amplitude, Frequency (or whatever the question asks for). You can see from the handout that they vary the Amplitude value, holding the second modulation technique constant. They cycle through the Amplitude and then vary the second technique. In this way you identify the combination that produces the bit stream (parts g and h are 2-bit, part i is 4-bit). After you identify the combinations, 'draw' the wave that corresponds to the bit stream. For example, in part g, the '00' stream is amplitude 1 and Frequency 1. Select an amplitude and a frequency to correspond with 1 and draw the 00 stream. Once all the waves are drawn, put the correct ones together to produce the 01101100 stream, as requested in the problem.
9. Chapter 4 Question 4
10. Chapter 4 Question 30
11. Chapter 5 Question 3
12. Chapter 5 Question 24
13. Chapter 5 Question 29 - remember to add the header portion to the overall transmission size.
14. Chapter 5 Exercise 5-5
15. Chapter 5 Minicase II Central University

**Assignment 2**

1. Chapter 6 Question 21
2. Chapter 6 Question 23
3. Chapter 7 Question 11
4. Chapter 7 Question 23
5. Chapter 7 Exercise 3. Do not consider the Internet connection
6. Chapter 8 minicase II Megacorp
7. Chapter 10 Question 24
8. Chapter 10 Question 35
9. Chapter 10 Question 49
10. Chapter 11 Question 11
Corrections to text:

While the Fitzgerald and Dennis text is exceptional in its content and organization, a few errors have been included in this new version. If you find additional mistakes, please inform me so they can be announced to the class and included in the list for future semesters. Thank you.

<table>
<thead>
<tr>
<th>Page</th>
<th>Content</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>The server (or host ...) .. that can be accessed by the</td>
<td>Change modem to modem.</td>
</tr>
<tr>
<td>61</td>
<td>&quot;Telnet can be faster or slower than a modern depending...&quot;</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Fig 3-9 middle &quot;Radiated Media&quot;</td>
<td>Wireless Media</td>
</tr>
<tr>
<td>106 - Fig 3-25</td>
<td>Table: Atlanta total packages / day, in some books, is 4075.</td>
<td>Atlanta to Denver = 150 and total</td>
</tr>
<tr>
<td>124 - Fig 4-10</td>
<td>STX 1 byte</td>
<td>Atlanta value = 4210</td>
</tr>
<tr>
<td>134 Ex. 1</td>
<td>Assume that the data is sent synchronously over the 28,800-bps circuits, using a 1,600-char...</td>
<td>Should be 64,000-bps</td>
</tr>
</tbody>
</table>