CMPE 80N
Introduction to Networks and the Internet
Spring Quarter 2001
10:00-11:45 AM, Tuesday-Thursday, Jack Baskin Engineering 152

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OBJECTIVES OF THE COURSE:

The course deals with the fundamentals of telecommunications networks both from a technical and business perspective. It addresses both "what" the Internet is and "why" it is becoming more significant relative to how we work, live, learn, play and communicate.

In completing this course a student should have an understanding of the role of telecommunication network structure, architecture, major components, strengths and shortcomings. Also emphasized is understanding the Internet not only for personal use but its increasing importance resource for business and public sector organizations for such things as E-Commerce, intranets, and extranets.

The Internet is such a broad topic that it is realistic to posture this as a foundation course both for those that want to use it for personal use and those that plan to pursue the subject of networking is subsequent courses.

Specifically this course will address:

- Telecommunication networks: LANs and WANs
- It all began with the telephone
- Analog versus digital communication
- A brief history of the Internet
- Factors that drove the growth of the Internet
- How the Internet works
- Packet switching
- Protocols and TCP/IP
- Search engines on the Internet
- E-Commerce and merchandising
- Business to business uses of the Internet
- Personal use of the Internet
- Multimedia
The Internet, the law and public policies

Industry transformation by the Internet

Technology trends.

COURSE PREREQUISITES: There are no specific prerequisites to this course but sophomore standing is recommended.

TEXTBOOKS: Two books will be used for this course. The first is The Internet Book: Everything You Need to Know About Computer Networking and How the Internet Works by Douglas E. Comer. Referred to in the course schedule as "TI." This book provides an overview of the Internet and of networking technology and terminology for general readers with no technical background, explaining the evolution of the Internet, the analog to digital revolution, local and wide-area networks, wireless communication, TCP/IP software, and distributed computing. A section on Internet services offers instructions for using e-mail, BBSs, file transfer, and browsing and searching services.

The second book is Net Success by Christina Ford Haylock and Len Muscarella. Referred to in the course schedule as "NS." This book was written for people who are trying to develop and implement effective Internet strategies. These businesses are referred to as Encumbered Companies, because they come to the Web with baggage that Internet startups simply don't have, such as existing sales channels that might be threatened; existing organizational challenges; and expectations of boards and shareholders about earnings and margins. In Net Success are the experiences of 24 business leaders, writing about topics ranging from design to advertising to legal issues.

TENTATIVE COURSE SCHEDULE:

1. March 27 (T) Class Objectives, Overview, Structure, Assignments and Grading.

   Read and clearly understand the class syllabus, the organizational structure of the books, the course assignments and the due dates. Also read Chapter 1, The Internet Has Arrived, in The Internet (TI) book as background information.

2. March 29 (TH) Telecommunication Network Introduction (MH)

   Read Ch. 2, Telephones Everywhere and Ch. 3, The World Was Once Analog, Ch. 4, The Once and Future Digital Network; Ch. 5, Basic Communication; and Ch. 6, The Local Area Network Arrives in TI.

3. April 3 (T) Telecommunication Network Introduction (MH)

   Read Chapter 12, Packet Switching; Ch. 13, Internet: A Network of Networks; Ch. 14, ISPs and Network Connections.

   Due: Letter of Introduction and proposal for the first assignment

4. April 5 (TH) Making Sense of the Internet and Information Browsing (JC)
Read the Introduction and Ch. 1 and 2 in NS and Ch. 22, Browsing the World Wide Web; Ch. 23, World Wide Web Document (HTML); Ch. 24, Advanced Web Technologies; Ch. 25, Automated Web Search in TI

5. April 10 (T) **How People Use the Internet** (MH)
   Read Ch. 18, Electronic Mail; Ch. 19, Bulletin Board Service; Ch. 20, File Transfer (FTP), Remote Login (TELNET).

6. April 12 (TH) **WebTV – Dr. Sailesh Chutani, Microsoft**
   **Due: Written Assignment Number 1.**

7. April 17 (T) **E-Commerce and Merchandising** (JC)
   Read Chapter 8 in Net Success; Chapters 10 and 11 in Net Success.

8. April 19 (TH) **TI: Internet Access from Home (DSL) – Dr. Krista Jacobsen, TI**

9. April 24 (T) **Business to Business Uses of Internet Technology** (JC)
   Read Chapters 10 and 11 in Net Success

10. April 26 (TH) **How the Internet Works** (MH)
    Read Chapter 15: IP: Software to Create a Virtual Network; Ch. 16, TCP: Software for Reliable Communication in TI.
    **Due: Written Assignment Number 2**

11. May 1 (T) **More on How the Internet Works - Distributed Computing** (MH)
    Read Ch. 17, Clients+Servers=Distributed Computing; Ch. 18, Names for Computer; Ch. 19, Why the Internet Works Well in TI.

12. May 3 (TH) **Audio and Video Communication** (MH)
    Read Ch. 26, Audio and Video Communication, and Ch. 27, The Global Digital Library, in TI.

13. May 8 (T) **Data Access to the Internet – Professor John Vesecky, SOE**

14. May 10 (TH) **Midterm Exam** in CE80N (20% of course grade)
    Read Ch. 26, Audio and Video Communication, and Ch. 27, The Global Digital Library, in TI.

15. May 15 (T) **More on Internet Applications** (JC)
    Read Ch. 4, Virtual Communities; Ch. 5, Internet Advertising; Ch. 6, Internet Direct Marketing in NS.

16. May 17 (TH) **A Brief History of the Internet and Current Governance – Eric Macris,**
Read Ch. 7, Internet: The Early Years, in TI; Ch. 8, A Decade of Incredible Growth; Ch. 9, The Global Internet; Ch. 10, A Global Infrastructure.

Or:

**Corporate Communications and Public Affairs: Using the Internet to Communicate Ideas. The Internet, the Law and Public Policies**

Read Ch. 7; Ch. 9, Putting Your Business Online, Not on the Line in NS.

17. May 22 (T) **How the Internet is Helping to Transform Industries** (JC)

   Read Part III (Chapters 12, 13, 14, 15 and 16) in *Net Success*

18. May 24 (TH) **Local Area Networks (LANs) – Larry Taylor, Fantasma Networks**

   Due: Written Assignment Number 3.

19. May 29 (T) **Technology Trends** (MH)

20. May 31 (TH) **Course Conclusion** (MH & JC)

21. June 6 (W) **Final Exam**

**Note:** All written assignments must be prepared using a word processor.

**DUE DATES:** All written assignments are due on the dates indicated. Papers submitted after the due date will not be accepted and will receive a failing grade. Absence from class does not excuse late papers unless arrangements have been made with the instructor before the day that the paper is due.

**MAKE-UP EXAMS:** Exams should be taken when they are scheduled. Make-up exams will be available only if the student has received permission from the instructor to take a make-up exam before the exam is given to the rest of the class.

**LECTURES AND EXAMS:** Exam problems may be taken from the lecture material (particularly from guest speakers). If you cannot make a lecture, make sure you get notes on the material you missed.