

Maryland in Europe Graduate Programs
Bowie State University

Data Communication Systems and Networks **INSS 538**

10 June, 2003 – 31 July, 2003
Naples - Capodichino
Tuesday and Thursday, 1730-2030

Instructor: Susan T. Dean
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Consultation: 30 minutes before class, other times by appointment

Course Description: 3 semester hours credit. *Prerequisites: Either INSS 510, INSS 520, or permission of the instructor.* Provides analysis of data communications technology and its application within the public and private sector enterprise. Gives an in-depth view of the communications environment, data communications and telecommunications equipment, and local and wide area networks. The student will examine case studies of communications systems design in educational, industrial, governmental, and military environments.

Course Goals/Objectives:

At the conclusion of this course the student will be able to:

1. Discuss the evolution of networks and the Internet
2. Explain the hierarchical, layered structure of a typical network architecture
3. Describe emerging network technologies and assess their capabilities, limitations, and near-term potential
4. Discuss important network standards in their historical context
5. Describe the responsibilities of the layers of the ISO reference model
6. Explain how a network can detect and correct transmission errors
7. Illustrate how a packet is routed over the Internet
8. Discuss the fundamental ideas of public-key cryptography
9. Summarize common authentication protocols
10. Summarize the capabilities and limitations of the means of cryptography that are currently available
11. Explain the different roles and responsibilities of clients and servers for a range of possible applications
12. Research current topics in networking

Text: White, C. (2002). *Data Communications and Computer Networks: A Business User's Approach* (2nd ed.). Boston: Thompson Course Technology.

Grading Information: Grades for this course will be assigned as follows:

A	90% +	C	70 – 79%
B	80 – 89%	F	Below 70% F(a) or regular non-attendance F(n)

Course Requirements:

Midterm Examination:	25%
Final Examination:	30%
Paper and Presentation:	15%
Weekly Assignments:	30%

Project Description:

The major “project” in this course is the research paper. Students will go significantly beyond the information contained in the textbook about a networking topic (proposed by the student, and subject to approval by the professor). The student will write a paper on this topic and give a PowerPoint presentation on the last day of class.

In addition, there will be weekly assignments. The end-of-chapter exercises will be a significant component of these assignments, but they may also include topics to be researched for information beyond what is in the textbook, and may include programming and other computer work.

Projected Course Schedule (will be modified by the professor as needed):

<i>Module</i>	<i>Topics</i>	<i>Assignments due</i>
Tu 10 Jun	Course Mechanics, Intro to Networks and Data Communications (Ch. 1)	
Th 12 Jun	Data, Signals, Media (Ch. 2, 3)	
Tu 17 Jun	Connections (Ch. 4)	Weekly Assignment #1
Th 19 Jun	Multiplexing (Ch. 5)	
Tu 24 Jun	Errors, Detection, Control (Ch. 6)	Weekly Assignment #2
Th 26 Jun	Local Area Networks (Ch. 7)	
Tu 1 Jul	LANs: Internetworking (Ch. 8)	Weekly Assignment #3
Th 3 Jul	Midterm Exam	
Tu 8 Jul	LANs: Software and Support (Ch. 9)	Weekly Assignment #4
Th 10 Jul	MANs and WANs (Ch. 10)	
Tu 15 Jul	The Internet (Ch. 11)	Weekly Assignment #5
Th 17 Jul	Telecommunications (Ch. 12)	
Tu 22 Jul	Network Security (Ch. 13)	Weekly Assignment #6
Th 24 Jul	Design and Management (Ch. 14)	
Tu 29 Jul	Final Exam *	Take-home Exam Question(s)
Th 31 Jul	Student Presentations	Research Paper
* Note that the final exam is NOT on the last day of class!		

Webboard:

<http://webboard.ed.umuc.edu/~mis/>

Information of potential interest to all students in this course will be posted there as appropriate. You will not be notified when new information is posted – it is your responsibility to check frequently.

Academic Policies: Please refer to the UMUC Maryland in Europe Graduate Catalog, available online at http://www.ed.umuc.edu/visit/pubs/catalog/grad_02-03.pdf or from your local Education Center, for information on the following:

Academic Integrity
Exception to Policy
Make-up Examinations
Students with Disabilities

Course Load
Grade Appeal Process
Nondiscrimination

CODE OF CIVILITY

To promote a positive, collegial atmosphere among students, faculty, and staff, Maryland in Europe has developed the following Code of Civility:

Respect

Treat all students, faculty, and staff with respect and in a professional and courteous manner at all times and in all communications, whether in person or in written communication (including e-mail).

Kindness

Refrain from using profanities, insults, or other disparaging remarks.

Truth

Endeavor to cite only the truth and not knowingly misrepresent, mischaracterize, or misquote information received from others.

Responsibility

Take responsibility for our own actions instead of blaming others.

Cooperation

Work together with other students, faculty, and staff in a spirit of cooperation toward our common goals of seeking and providing quality education.

Privacy

Strive to uphold the right to privacy and not talk about others.

Nondiscrimination

Respect the differences in people and their ideas and opinions and reject bigotry.

About Your Instructor Dr. Dean earned the BA in Mathematics from Vanderbilt University, and the MS and PhD in Computer Science from the University of Alabama in Birmingham. She has worked at various times as a programmer, programmer/analyst, systems analyst, and project manager in the areas of medical information systems, small business support, and life insurance. Since 1975, she has been involved in teaching and curriculum development in computing, most recently at Samford University in Birmingham, AL. She has served on the Board of Directors and as President of the Consortium for Computing Sciences in Colleges. She serves on the Steering Committee of the CCSC Southeastern Conference. Her areas of interest include curriculum development, database management systems, programming languages, and operating systems.