BU233
Business and Data Networks
[Onsite]

Course Description:

This course addresses the role of data interchange and internetworking technologies in business operations. Blending technical and managerial concepts, this course offers an overview of the impact of data communication and networks in businesses and applications.

Prerequisite(s) and/or Corequisite(s):

Prerequisites: BU232 Business and Database Applications

Credit hours: 4

Contact hours: 50 (30 Theory Hours, 20 Lab Hours)

Syllabus: Business and Data Networks

Instructor:	_____
Office hours:	_____
Class hours:	_____

Course Description

This course addresses the role of data interchange and internetworking technologies in business operations. Blending technical and managerial concepts, this course offers an overview of the impact of data communication and networks in businesses and applications.

Major Instructional Areas

1. Impact of electronic data interchange on business
2. Aligning business strategy to technology strategy
3. Layered communications connectivity in business
4. Structured topologies for business
5. Monitoring onsite and offsite business communications
6. Communications cost in business

Course Objectives

Upon the successful completion of this course, students will be able to:

1. Summarize the major reasons why businesses implement technology networks in their environments.
2. Generate a network design plan based on the type of considerations a network administrator would need to manage.

3. Analyze the various types of local and wide area networks and explain how their components contribute to an efficient and effective network design.
4. Evaluate current and emerging wireless network technologies, such as Bluetooth technology, to analyze future industry trends.
5. Evaluate available LAN/WAN connectivity options and argue the merits that are appropriate for use in small, medium, and large businesses.
6. Outline the impact that security components have on a business network and rank the risk level of each component.

SCANS Objectives

SCANS is an acronym for Secretary's Commission on Achieving Necessary Skills. The committee, created by the National Secretary of Labor in the early 1990s, created a list of skills and competencies that the committee feels are necessary for employees to function in a high-tech job market.

1. Demonstrate the ability to select and utilize traditional and electronic library sources to broaden scope of presented materials and to prepare projects.
2. Evaluate challenges and conflicts; generate appropriate responses.
3. Choose ethical courses of action.
4. Set personal goals to strengthen skills.
5. Monitor progress and exert high level of effort to persevere toward goal attainment.
6. Appreciate the need for effective communication; receive, interpret, and evaluate input from others.

Course Outline

Note: All graded activities, except the Projects, are listed below in the pattern of <Unit Number>.<Assignment Number>. For example, Quizzes: 5.1 refers to the first quiz in Unit 5.

Unit	Activities
1–Introduction to Information and Communications	• Read from *Business Data Communications:* ○ Chapter 1, “Introduction” • In-Class Pre-Assessment (ungraded background knowledge probe)

2–Business Information and Distributed Data Processing	• Read from *Business Data Communications:*
	  ○ Chapter 2, “Business Information”
	  ○ Chapter 3, “Distributed Data Processing”
	• Case Studies: 2.1

3–The Internet,
TCP/IP, and OSI
	• Read from *Business Data Communications:*
	  ○ Chapter 4, “The Internet”
	  ○ Chapter 5, “TCP/IP and OSI”
	• Quizzes: 3.1
	• Project 1 (Phases I-IV) due

4–Client/Server and Intranet Computing with
Internet-Based Applications
	• Read from *Business Data Communications:*
	  ○ Chapter 6, “Client/Server and Intranet Computing”
	  ○ Chapter 7, “Internet-Based Applications”
	• Case Studies: 4.1

5–Internet Operation and LAN Architecture and Protocols	• Read from *Business Data Communications:*
	  ○ Chapter 8, “Internet Operation”
	  ○ Chapter 9, “LAN Architecture and Protocols”
	• Quizzes: 5.1

6–Ethernet and Wireless LANs	• Read from *Business Data Communications:*
	  ○ Chapter 10, “Ethernet”
	  ○ Chapter 11, “Wireless LANs”

Unit	Activities
	• In-Class Activities: 6.1

7–Circuit Switching and Packet Switching,
 	
Frame Relay and ATM, and Wireless WANs
	• Read from *Business Data Communications:*
	  ○ Chapter 12, “Circuit Switching and Packet Switching”
	  ○ Chapter 13, “Frame Relay and ATM”
	  ○ Chapter 14, “Wireless WANs”
	• Project 2 (Phases I-IV) due
	• In-Class Activities: 7.1

8–Data Transmission, Data Communications Fundamentals, and
 	
Data Link Control and Multiplexing
	• Read from *Business Data Communications:*
	  ○ Chapter 15, “Data Transmission”
	  ○ Chapter 16, “Data Communication Fundamentals”
	  ○ Chapter 17, “Data Link Control and Multiplexing”
	• Case Studies: 8.1
	• Quizzes: 8.1

9–Computer and Network Security Threats and Techniques	• Read from *Business Data Communications:*
	  ○ Chapter 18, “Computer and Network Security Threats”
	  ○ Chapter 19, “Computer and Network Security Techniques”
	• In-Class Activities: 9.1
	• In-Class Activities: 9.2

10–Network Management, Planning, and Design	• Read from *Business Data Communications:*
	  ○ Chapter 20, “Network Management”
	  ○ Chapter 21, “Network Planning and Design”
	Note: Access chapter readings via http://www.box.net/shared/po6yg4cigv
	• Quizzes: 10.1

Unit	Activities
11–Final Review, Post-Assessment, and Project Submission	• Final Review • Project 3 (Phases I-IV) due • In-Class Post-Assessment (ungraded)

Instructional Materials and References

Student Textbook Package

- Stallings, William. *Business Data Communications. 6th ed. Upper Saddle River, NJ:* Pearson Prentice Hall, 2009.

References

ITT Tech Virtual Library

Log on to the ITT Tech Virtual Library at http://library.itt-tech.edu/ to access online books, journals, and other reference resources selected to support ITT Tech curricula.

Periodicals

You may click "Periodicals" or use the E-Journal Lookup on the home page to find the following periodicals.

- InformationWeek

http://www.informationweek.com/

- Information Security Magazine
  http://informationsecurity.techtarget.com/
- Network Magazine
  http://www.networkmagazine.com/
- Technology Review

http://www.technologyreview.com/

- PC Magazine

http://www.pcmag.com/

- Network Computing
  http://www.networkcomputing.com/

Other References

The following resources can be found outside of the ITT Tech Virtual Library, whether online or in hard copy.

Web sites

- Computer Science Student Resource Site by William Stallings

http://williamstallings.com/BDC/BDC6e-student.html (accessed 5/16/11)
This site supports the student textbook for this course.

- Official Bluetooth Technology Web Site

http://www.bluetooth.com (accessed 5/16/11)
Resources for and about Bluetooth technology

- Communication Technology
  http://accessintelligence.imirus.com/Mpowered/book/vcomm11/i2/p1 (accessed 5/16/11)
  This site offers free tech guides, subscriptions, and the latest on communications information.

- Smarter Technology
  http://www.smartertechnology.com/ (accessed 5/16/11)
  This site offers information on emerging technologies.

Periodicals

- *Network World—weekly newsmagazine covering the industry and market for* information communication products and services

http://www.networkworld.com/

- *Network Computing—focuses on networking products*

http://www.networkcomputing.com/

- *Performance Edge Journal—focuses on network performance management*

http://performance-edge-journal.com/index.html

- *Telecommunications–monthly magazine for industry-related and technical issues*
- *ACM Networker–published by ACM (Association of Computing Machinery) to* provide information for developers and managers of enterprise information systems with an emphasis on networking and data communications

  http://networker.acm.org/

All links are always subject to change without prior notice.

Course Evaluation and Grading

Evaluation Criteria Table

The final grades will be based on the following categories:

CATEGORY	WEIGHT
In-Class Activities	20%
Quizzes	20%
Case Studies	15%
Project 1	10%
Project 2	10%
Project 3	25%
Total	**100%**

Note: Students are responsible for abiding by the Plagiarism Policy.

Grade Conversion Table

The final grades will be calculated from the percentages earned in the course, as follows:

A	90-100%	4.0
B+	85-89%	3.5
B	80-84%	3.0
C+	75-79%	2.5
C	70-74%	2.0
D+	65-69%	1.5
D	60-64%	1.0
F	<60%	0.0

(End of Syllabus)