MSIS-DL 313 Syllabus
John Sands
Telecommunications and Computer Networks
Winter 2012

Contact Information
E-mail: j-sands@northwestern.edu
Office Phone: 708-955-5426
Office Hours: available by appointment

Course Description
This course provides an overview of telecommunications and data communications. Course work includes local area network (LAN) and wide area network (WAN) components such as switches, routers, telecommunication circuits, and protocols. Advanced topics such as information security, information assurance, advanced networking technologies, and others will be overviewed as well.

Synchronous Sessions: This class will have three online synchronous meetings: 01/09/2012, 01/23/2012 and 02/13/2012 all at 7:00pm (Central Time).

URL: http://nwuniversity.adobeconnect.com/r62qwosmzg/

Text
Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

[ISBN-10: 0136100120]

[ISBN-13: 978-0136100126]

Learning Goals
The goals of this course are to:

- Define the basic terms of computer networks.
- Explain the individual components of computer networks.
- Discuss basic network configurations.
- Determine the best network solution given a set of requirements.
- Create network diagrams, and provide appropriate business rationale.

Evaluation
The student's final grade will be based on the final examination, weekly assignments, discussion board participation, and class projects:

- Interview with an IT professional: 20 points
- Research Paper: 20 points
- Weekly Assignments: 20 Points
- Final exam: 20 points
- Four bi-weekly article research/summaries: 10 points
- Discussion board participation (students will score either 5, 4, 3, 2, or 1 points based on the quality (not quantity) of their posts): 10 points
  Total = 100 points

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• Four bi-weekly article research/summaries: 10 points

• Discussion board participation (students will score either 5, 4, 3, 2, or 1 points based on the quality (not quantity) of their posts): 10 points Total = 100 points

Discussion Board Etiquette
The purpose of discussion boards is to allow students to freely exchange ideas and participation is highly encouraged. It is important that we always remain respectful of one another's viewpoints and positions and, when necessary, agree to disagree, respectfully. While active and frequent participation is encouraged, cluttering a discussion board with inappropriate, irrelevant, or insignificant material will not earn additional points and may result in receiving less than full credit. Although frequency is not unimportant, content of the message is paramount. Please remember to cite all sources—when relevant—in order to avoid plagiarism.

Proctored Assessment
There is no proctored assessment requirement in this course.

Grading Scale
97%–100% = A
93%–96% = A-
90%–92% = B+
87%–89% = B
80%–86% = B-
77%–79% = C+
73%–76% = C
70%–72% = C-
0%–69% = F

Attendance
This course is asynchronous, meaning that we will not meet at a particular time each week. Even though we will not meet face-to-face in a physical classroom, participation on all discussion boards is required and paramount to your success.

Late Work
Late assignments are not accepted without explicit permission from the instructor, and permission can only granted in the case of an emergency and in advance of the assignment due date. Late work may be subject to a penalty in points.

Learning Groups
There will be no learning groups in this course.

Academic Integrity at Northwestern
Students are required to comply with University regulations regarding academic integrity. If you are in doubt about what constitutes academic dishonesty, speak with your instructor or graduate coordinator before the assignment is due and/or examine the University Web site. Academic dishonesty includes, but is not limited to, cheating on an exam, obtaining an unfair advantage, and plagiarism (e.g., taking material from readings without citation or copying another student's paper). Failure to maintain academic integrity will result in a grade sanction, possibly as severe as failing and being required to retake the course, and could lead to a suspension or expulsion from the program. Further penalties may apply. For more information, visit: <www.scs.northwestern.edu/student/issues/academic_integrity.cfm>.

Plagiarism is one form of academic dishonesty. Students can familiarize themselves with the definition and examples of plagiarism, by visiting the site <www.northwestern.edu/uacc/plagiar.html>. Myriad other sources can be found online, as well.

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Some assignments in this course may be required to be submitted through SafeAssign, a plagiarism detection and education tool. You can find an explanation of the tool at <http://wiki.safeassign.com/display/SAFE/How+Does+SafeAssign+Work>. In brief, SafeAssign compares the submitted assignment to millions of documents in very large databases. It then generates a report showing the extent to which text within a paper is very similar or identical to pre-existing sources. The user can then see how or whether the flagged text is cited appropriately, if at all. SafeAssign also returns a percentage score, indicating the percentage of the submitted paper that is similar or identical to pre-existing sources. High scores are not necessarily bad, nor do they necessarily indicate plagiarism, since the score doesn't take into account how or whether material is cited. (If a paper consisted of just one long quote that was cited appropriately, the score would be 100%. This wouldn't be plagiarism, due to the appropriate citation. However, just submitting one long quote would probably be a pretty bad paper.) Low scores are not necessarily good, nor do they necessarily indicate a lack of plagiarism. (If a 50-page paper had all original material, except for one short quote that was not cited, the score might be around 1%. But, not citing a quotation would still be plagiarism.)

SafeAssign includes an option in which the student can submit a paper and see the resultant report before submitting it to the instructor as a final copy. This ideally will help students better understand and avoid plagiarism.

Other Processes and Policies
Please refer to your SCS student handbook at <www.scs.northwestern.edu/grad/information/handbook.cfm> for additional course and program processes and policies.

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Course Schedule

Important Note: *Changes may occur to the syllabus at the instructor's discretion. When changes are made, students will be notified via an announcement in Blackboard.*

Session 1 – Introduction to Data Communications and Networking

Learning Objectives
Upon completion of this session, the student will be able to:

- Discuss the history of networks.
- List various types of networks.
- Explain the purpose of a computer network.
- Describe the evolution of network applications
- Define the term network, LAN and WAN.
- Explain message order, semantics, and syntax.
- Distinguish between connection-oriented and connectionless service.
- Explain the role of software in a network.
- Explain how the components of a network function together.
- Discuss various types of networks and their use.
- Differentiate between the various types of networks.
- Build a network legend.

Course Content: *Reading—For this session, please read:* pp. 1–38 of the textbook:

Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.
Herper, M. (2004, June 11). Doctors, untethered. *Forbes.* Retrieved from <www.forbes.com/2004/06/03/cz_mh_wifi04_docs.html>

Handout: Key Concepts

Videos:

- **Public Broadcasting System's Triumph of the** Nerds (Parts I, II, and III)
- Watch Google's Innovators: http://www.youtube.com/watch?v=UKTxS61GkEY

Web links:
ARPANET -- The First Internet found at http://www.livinginternet.com/i/ii_arpanet.htm
Celebrating 20 Years of Changing the Way We Live, Work, Play and Learn
http://newsroom.cisco.com/dlls/2004/hd_052504f.html

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: Assignment 1A-Google Earth is due by the end of week one Sunday, Jan. 8th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Course Schedule

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ARPANET -- The First Internet found at http://www.livinginternet.com/i/ii_arpanet.htm Celebrating 20 Years of Changing the Way We Live, Work, Play and Learn

http://newsroom.cisco.com/dlls/2004/hd_052504f.html

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Session 2 – Network Models, Protocols and Standards

Learning Objectives
After this session, the student will be able to:

- Explain the purpose of protocols.
- Discuss the three key elements of protocols.
- Define and provide examples of reliable and unreliable protocols.
- Describe the role of the various standards organizations.
- Describe the Open Systems Interconnection (OSI) model, including the seven layers.
- Explain OSI layers 1 and 2.
- Identify vertical communications among layers.
- Recognize common layered standards and architecture.
- Explain peer-to-peer and served-based networks.
- Differentiate between telecommunications and data communications.
- Identify the various governmental agencies, regulatory agencies, and standards organizations.
- Identify the components of a network.
- Explain how the components of a network function together.

Course Content: *Reading—For this session, please read:* pp. 45–77 of the textbook:

> Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Handout:

Video:

Web link: The Standard OSI Model http://en.wikipedia.org/wiki/OSI_model
A comprehensive listing of data communications protocols, their functions in respect to the OSI model, the structure of the protocol, and various errors and parameters

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: The bi-weekly article submission is due by the end of week two Sunday, Jan 15th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item. Please find an article related to this week's topics; standards, protocols and technologies. Write a single-spaced, one-page summary of the article, and submit in Microsoft Word format. Remember to include a citation (and link, if possible) for your selected article.

Assignment 2A-OSI Model is due by week two Sunday, Jan 15th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Learning Objectives After this session, the student will be able to:

• Explain the purpose of protocols.

• Discuss the three key elements of protocols.

• Define and provide examples of reliable and unreliable protocols.

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• Describe the Open Systems Interconnection (OSI) model, including the seven layers.

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Assignment 2A-OSI Model is due by week two Sunday, Jan 15th @ 11:59 p.m. (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 3 – Physical Layer

Learning Objectives
After this session, the student will be able to:

- Discuss binary data representation, including its use in most present-day networks.
- Distinguish between unshielded twisted pair (UTP) and fiber optic wiring.
- Identify relevant propagation effects that must be controlled during connectorization.
- Explain how to mitigate various propagation effects during connectorization.
- Explain the differences and uses between Cat 3, Cat 4, Cat 5, Cat 5e, Cat 6, Cat 7,
- Explain the benefits and drawbacks of using UTP versus optical fiber.
- Identify various network topologies.
- Describe each network topology.

Course Content

Reading—For this session, please read: pp. 171-204 & 426-451

Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.
Shah, A. (2008, December 6). Intel hopes to bring free energy to mobile devices. *IT World*. Retrieved from: http://www.itworld.com/personal-tech/58871/intel-hopes-bring-free-energy-mobile-devices?source=itw_rss
McDougall, P. (2008, November 12). IBM plans broadband over power lines for rural America. *Information* Week. Retrieved from http://www.informationweek.com/news/show Article.jhtml?articleID=212002016
Moussa, H. (2006, October 2). In locked-down Baghdad, city life moves online. *AlertNet*. Retrieved from http://www.alertnet.org/thenews/newsdesk/MOU425114.htm

Handout: Telecommunications and Computer Networks

Multimedia: Network Topologies

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion to pic(s), visit the discussion board in Blackboard.

Assignment: Assignment 3A-Physical Layer Standards is due by the end of week three Sunday, Jan 22nd @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Learning Objectives After this session, the student will be able to:

• Discuss binary data representation, including its use in most present-day networks.

• Distinguish between unshielded twisted pair (UTP) and fiber optic wiring.

• Identify relevant propagation effects that must be controlled during connectorization.

• Explain how to mitigate various propagation effects during connectorization.

• Explain the differences and uses between Cat 3, Cat 4, Cat 5, Cat 5e, Cat 6, Cat 7,

• Explain the benefits and drawbacks of using UTP versus optical fiber.

• Identify various network topologies.

• Describe each network topology.

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Handout: Telecommunications and Computer Networks

Multimedia: Network Topologies

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: Assignment 3A-Physical Layer Standards is due by the end of week three Sunday, Jan 22nd @ 11:59 p.m. (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 4 – Switched Networks

Learning Objectives
After this session, the student will be able to:

- Discuss the various types of LANs.
- Identify Ethernet physical layer standards.
- Explain the function of the media access control (MAC) layer.
- Differentiate between Ethernet switch and hub.
- Identify Ethernet switch purchasing criteria
- Discuss token ring networks.
- Explain the benefits and drawbacks of a token ring network.

Course Content: *Reading—For this session, please read:* pp. 205-246

Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Coburn, P. (2006, May 1). The change function. *Fast Company*. Retrieved from <http://www.fastcompany.com/magazine/105/next-essay.html>

Helft, M., & Bilton, N. (2010, April 19). For Apple, lost iPhone is a big deal. *The New York Times*. Retrieved from <http://www.nytimes.com/2010/04/20/technology/companies/20apple.html>

Konrad, R. (2007, January 9). Apple renames itself, unveils iPhone. *Mindfully*. Retrieved from <http://www.mindfully.org/Technology/2007/Apple-Rename-iPhone9jan07.htm>

Chen, J. (2010, April 19). This is Apple's next iPhone. *Gizmodo*. Retrieved from <http://gizmodo.com/5520164/this-is-apples-next-iphone#>

Multimedia: Physical Diagramming v. Logical Diagramming

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: The bi-weekly article submission is due by the end of week four Sunday, Jan 29th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item. Please find an article related to this week's topics; switched networks or OSI model physical layer technologies. Write a single-spaced, one-page summary of the article, and submit in Microsoft Word format. Remember to include a citation (and link, if possible) for your selected article.

Assignment 4A-Equipment RFP is due by the end of week four Sunday, Jan 29th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 4 – Switched Networks

Learning Objectives After this session, the student will be able to:

• Discuss the various types of LANs.

• Identify Ethernet physical layer standards.

• Explain the function of the media access control (MAC) layer.

• Differentiate between Ethernet switch and hub.

• Identify Ethernet switch purchasing criteria

• Discuss token ring networks.

• Explain the benefits and drawbacks of a token ring network.

Course Content: Reading—For this session, please read: pp. 205-246

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Coburn, P. (2006, May 1). The change function. Fast Company. Retrieved from <http://www.fastcompany.com/magazine/105/next-essay.html>

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Multimedia: Physical Diagramming v. Logical Diagramming

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: The bi-weekly article submission is due by the end of week four Sunday, Jan 29th @ 11:59 p.m. (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment's item. Please find an article related to this week's topics; switched networks or OSI model physical layer technologies. Write a single-spaced, one-page summary of the article, and submit in Microsoft Word format. Remember to include a citation (and link, if possible) for your selected article.

Assignment 4A-Equipment RFP is due by the end of week four Sunday, Jan 29th @ 11:59 p.m. (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 5 – Wireless Networks

Learning Objectives
After this session, the student will be able to:

- Define WAN.
- Explain the three purposes of WANs.
- Discuss leased line networks including leased line speeds.
- Describe leased line network topologies.
- Compare leased lines to digital subscriber lines (DSL).
- Explain the reason(s) for the dominance of low-speed transmissions in WAN services.
- Identify public switched data networks (PSDNs).
- Compare and contrast various PSDNs.
- Discuss 802.11 wireless LAN (WLAN) standards.
- Discuss how 802.11 WLAN supplements wired LANs.
- Explain the differences and uses of licensed and unlicensed radio bands.
- Discuss radio frequencies used in WAN.
- Discuss the use of satellite and microwave.
- Explain the importance of line of sight in a WAN.
- Explain the differences between and uses of WLAN, Ultraband (UWB), and Bluetooth personal area network (PAN).
- Explain virtual private networks (VPNs).
- Explain the purpose of a site survey when installing wireless access points.

Course Content: *Reading—For this session, please read:* pp. 247-277 and 278-304

Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: Assignment 5A-Wireless LAN Technology is due by the end of week five Sunday, Feb 5th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 5 – Wireless Networks

Learning Objectives After this session, the student will be able to:

• Define WAN.

• Explain the three purposes of WANs.

• Discuss leased line networks including leased line speeds.

• Describe leased line network topologies.

• Compare leased lines to digital subscriber lines (DSL).

• Explain the reason(s) for the dominance of low-speed transmissions in WAN services.

• Identify public switched data networks (PSDNs).

• Compare and contrast various PSDNs.

• Discuss 802.11 wireless LAN (WLAN) standards.

• Discuss how 802.11 WLAN supplements wired LANs.

• Explain the differences and uses of licensed and unlicensed radio bands.

• Discuss radio frequencies used in WAN.

• Discuss the use of satellite and microwave.

• Explain the importance of line of sight in a WAN.

• Explain the differences between and uses of WLAN, Ultraband (UWB), and Bluetooth personal area network (PAN).

• Explain virtual private networks (VPNs).

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Course Content: Reading—For this session, please read: pp. 247-277 and 278-304

Panko, R. R. (2008). Business data network and telecommunications (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week’s discussion topic(s), visit the discussion board in Blackboard.

Assignment: Assignment 5A-Wireless LAN Technology is due by the end of week five Sunday, Feb 5th @ 11:59 p.m. (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment’s item.

Session 6 – Network Security

Learning Objectives:
After this session, the student will be able to:

- Describe the type of attacks.
- Identify security threats
- Classify types of attacks.
- Discuss principles of security planning.
- Describe various authentication mechanisms.
- Explain the purpose and use of firewall protection.
- Evaluate compromise responses.
- Discuss the importance of network security management.
- Describe historical evolution of network security.
- Explain the purpose of security policies, standards, procedures and guidelines.
- Explain the use and application of cryptography.
- Discuss the challenges of network security.
- Describe incident response and network security.
- Define disaster recovery and business continuity.

Course Content: *Reading—For this session, please read:* pp. 87-126:

> Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Web link: http://www.iso27001security.com/html/27000.html

Multimedia: http://cve.mitre.org/

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment: The bi-weekly article submission is due by the end of week six Sunday, Feb 12th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item. Please find an article related to this week's topics; network security or wireless and mobile computing. Write a single-spaced, one-page summary of the article, and submit in Microsoft Word format. Remember to include a citation (and link, if possible) for your selected article.

Assignment 6A-Network Security is due by the end of week six Sunday, Feb 12th @ 11:59 p.m. (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 6 – Network Security

Learning Objectives: After this session, the student will be able to:

• Describe the type of attacks.

• Identify security threats

• Classify types of attacks.

• Discuss principles of security planning.

• Describe various authentication mechanisms.

• Explain the purpose and use of firewall protection.

• Evaluate compromise responses.

• Discuss the importance of network security management.

• Describe historical evolution of network security.

• Explain the purpose of security policies, standards, procedures and guidelines.

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• Discuss the challenges of network security.

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• Define disaster recovery and business continuity.

Course Content: Reading—For this session, please read: pp. 87-126:

Panko, R. R. (2008). Business data network and telecommunications (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Web link: http://www.iso27001security.com/html/27000.html

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Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

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Assignment 6A-Network Security is due by the end of week six Sunday, Feb 12th @ 11:59 p.m. (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 7 – TCPIP Internetworking

Learning Objectives
After this session, the student will be able to:

- Describe the transmission control protocol/Internet protocol (TCP/IP) standards architecture.
- Explain IP addressing.
- Explain the use of a subnet mask.
- Explain the two TCP/IP transport layer protocols (TCP and UPD).
- Identify and explain TCP/IP-based protocols including (FTP, NTP, DNS and Telnet).
- Explain the purpose of use of the H.323 protocol (often use UDP and include voice over Internet protocol (VoIP) and streaming media).
- Identify the network layer protocol used in TCP/IP (IP-IPv6).
- Describe packet switching.
- Explain latency and jitter.
- Explain the "TCP three-way handshake" and the "TCP keep-alive process."
- Demonstrate how to use packet internetwork groper (PING).
- Explain the purpose of a protocol analyzer.
- Explain the role of routing information protocol (RIP).

Course Content: *Reading—For this session, please read:* pp. 305–336 and 406–424:

Panko, R. R. (2008). *Business data network and telecommunications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Jensen, N. G. (2006, December). Living the dream: IT telecommuting and how you can do it. *Dice*. Retrieved from http://career-resources.dice.com/job-technology/living_the_dream_IT_telecommuting.shtml

Urbina, I., & Nixon, R. (2007, March 30). Disuse of system is cited in gaps in soldiers' care. *The New York Times*. Retrieved from http://query.nytimes.com/gst/fullpage.html?res=9804E7DE1130F933A05750C0A9619C8B63&sec=&spon=&pagewanted=all

Web link: A comprehensive listing of data communications protocols, their functions in respect to the OSI model, the structure of the protocol, and various errors and parameters

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment
Assignment 7A-Network Addressing and Services is due by the end of week seven Sunday, Feb 19th (central time). For more information, click *Assignments* on the left navigation bar in Blackboard, and scroll to this assignment's item.

Session 7 – TCPIP Internetworking

Learning Objectives After this session, the student will be able to:

• Describe the transmission control protocol/Internet protocol (TCP/IP) standards architecture.

• Explain IP addressing.

• Explain the use of a subnet mask.

• Explain the two TCP/IP transport layer protocols (TCP and UPD).

• Identify and explain TCP/IP-based protocols including (FTP, NTP, DNS and Telnet).

• Explain the purpose of use of the H.323 protocol (often use UDP and include voice over Internet protocol (VoIP) and streaming media).

• Identify the network layer protocol used in TCP/IP (IP-IPv6).

• Describe packet switching.

• Explain latency and jitter.

• Explain the "TCP three-way handshake" and the "TCP keep-alive process."

• Demonstrate how to use packet internetwork groper (PING).

• Explain the purpose of a protocol analyzer.

• Explain the role of routing information protocol (RIP).

Course Content: Reading—For this session, please read: pp. 305–336 and 406–424:

Panko, R. R. (2008). Business data network and telecommunications (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Jensen, N. G. (2006, December). Living the dream: IT telecommuting and how you can do it. Dice. Retrieved from http://career-resources.dice.com/job-technology/living_the_dream_IT_telecommuting.shtml

Urbina, I., & Nixon, R. (2007, March 30). Disuse of system is cited in gaps in soldiers' care. The New York Times. Retrieved from http://query.nytimes.com/gst/fullpage.html?res=9804E7DE1130F933A05750C0A9619C8B63&sec=&spon=&pagewanted=all

Web link: A comprehensive listing of data communications protocols, their functions in respect to the OSI model, the structure of the protocol, and various errors and parameters

Discussion Board: Each session you are required to participate in all discussion board forums. Your participation in both posting and responding to other students' comments is graded. For this week's discussion topic(s), visit the discussion board in Blackboard.

Assignment Assignment 7A-Network Addressing and Services is due by the end of week seven Sunday, Feb 19th (central time). For more information, click Assignments on the left navigation bar in Blackboard, and scroll to this assignment's item.