JOHN A. LOGAN COLLEGE
COURSE SYLLABUS

General Information

Course: **CIS 200 - Networking Essentials**
IAI No: NA
Semester:
Section:
Time:
Room:
Credit Hours: 3
Lecture Hours: 2
Lab Hours: 2

Instructor Information

Name:
Office:
Office Hours:

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Phone:
Email:

Course Textbook & Materials

Guide to Networking Essentials, 7th Ed. Greg Tomsho. Course Tech.
ISBN-13: 978-1-111-31252-7

One (1) 16GB Flash Drive that you will use for this class. ***You cannot have anything else on this drive, it will be for this class only***!

Course Prerequisites

N/A

Course Description

This course will provide the student with a general background in networking concepts, procedures and skills necessary in a computer network environment. This course is designed to familiarize the student with an overview of network topologies, physical

network architecture, various networking operating systems and a brief introduction into Microsoft Active Directory. This class will also provide the student with necessary skills in troubleshooting and help desk topics necessary for the network's technician and software specialist.

Course Objectives

1. Describe the principal features of the Microsoft Windows 2003.
2. Understand the importance of managing a network.
3. Identify the job skills necessary to becoming a network administrator.
4. Identify and describe the hardware and software components of a network.
5. Identify the tools used to perform common administrative tasks.
6. Describe and develop user accounts of Windows 2003.
7. Describe and manage the types of group accounts and the principal security features of Windows 2003.
8. Describe the features of the common network protocols used in Windows 2003.
9. Describe the fundamentals of TCP/IP.
10. Identify procedures to troubleshoot and problem solve.

College-Wide Student Learning Outcomes

The faculty and staff of John A. Logan College are committed to providing students with opportunities to develop learning abilities that will last a lifetime. Graduates will be prepared to succeed in their personal and professional lives because of achieved competence in the following student learning outcomes. In this course, students will be assessed in the following learning outcome:

	Communication: Students express thoughts, ideas, and feelings in both written and oral modes.
	Critical Thinking: Students apply a rational and methodical approach to problem solving based on use of appropriate evidence.
	Cultural and Global Awareness: Students demonstrate an understanding of the influence of culture and society.
	Information Literacy: Students locate, evaluate, retrieve, organize, create, and disseminate information.
	Quantitative Reasoning: Students use and understand numbers to interpret, evaluate, and express information in quantitative terms.

Topic Outline

- Introduction to Computer Network
- Network Hardware Essentials
- Network Topologies and Technologies
- Network Media
- Network Protocol
- IP Addressing

- Network Reference Models and Standards
- Network Hardware in Depth
- Introduction to Network Security
- Wide Area Networking and Cloud Computing
- Network Operating System Fundamentals
- Network Management and Administration
- The Internet of Things (IoT)
- Troubleshooting and Support

Course Schedule

	Assignment	CAE Use Only	Type	Due
Week 1	Introduction to Computer Networks • An Overview of Computer Concepts • The Fundamentals of Network Communication • Network Terms Explained • Network Models • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity **Technical Core - Basic Networking** 1.Describe the fundamental concepts, technologies, components and issues related to communications and data networks.		TBA
Week 2	Network Hardware Essentials • Network Repeaters and Hubs • Network Switches • Wireless Access Points • Network Interface Cards • Routers • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 1.Describe the hardware components of modern computing environments and their individual 4. Properly use the Vocabulary associated with cybersecurity. **Technical Core - Basic Networking** 1.Describe the fundamental concepts, technologies, components and issues related to communications and data networks 2. Design a basic network architecture given a specific need and set of hosts/clients.	2. Using PT the students will create a simple network with two hosts and one server. The host are required to ping the server.	TBA

Week 3	Network Topologies and Technologies • Physical Topologies • Logical Topologies • Network Technologies • 802.11 Wi-Fi • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity **Technical Core - Basic Networking** 1.Describe the fundamental concepts, technologies, components and issues related to communications and data networks		TBA
Week 4	Networking Media • Wired Networking • Fiber-Optic Cable • Wireless Networking • LAN Media Selection Criteria • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity		TBA
Week 5	Network Protocols • TCP/IP's Layered Architecture • Application-Layer Protocols • Transport-Layer Protocols • Internetwork-Layer Protocols • Network Access-Layer Protocols • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity **Technical Core - Basic Networking** 3. Track and identify the packets involved in a simple TCP connection (or a trace of such a connection). 4. Use a network monitoring tools to observe the flow of packets (e.g., WireShark). 5. Perform network mapping (enumeration and identification of network components) (e.g., Nmap). **Network Technology and Protocols** 1.Demonstrate an understanding of layer 2 networking (Ethernet).	3. Students setup using PT a lab with three PCs and a switch to follow the TCP route 4.Students use Wireshark to follow a series of packets on the classrooms network.. 5.Students use Angry IP to find and locate different dices on the network 1.Students use a PT lab to understand layer to switches.	TBA

Week 6	IP Addressing • Ipv4 Addressing • Classless Interdomain Routing • Subnetting • Configuring Ipv4 Addresses • Network Address Translation • Internet Protocol Version 6 • Ipv6 Address Types • IPv6 Autoconfiguration • Transitioning from IPv4 to IPv6 • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity **Network Technology and Protocols** 2. Demonstrate an understanding of the structure and use of key networking protocols (IPv4 and IPv6).	2. Students use PT to view the uses of IP4 and IP6	TBA
Week 7	Network Reference Models and Standards • Introducing the OSI and IEEE 802 Networking Models • IEEE 802 Networking Standards • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity **Network Technology and Protocols** 4. Identify and mitigate security concerns at layer 2 and layer 3 of a network.	4. Review Questions	TBA
Week 8	Test 1/Midterm			TBA
Week 9	Network Hardware in Depth • Network Switches in Depth • Routers in Depth • Wireless Access Points in Depth • Network Interface Cards in Depth • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity		TBA

Week 10	Introduction to Network Security • Network Security Overview and Policies • Securing Physical Access to the Network • Securing Access to Network Data • Network Security Devices • Protecting a Network from Malware • Using an Attacker's Tools to Stop Network Attacks • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	**Foundational - IT Systems Components** 4. Properly use the Vocabulary associated with cybersecurity **Technical Core - Basic Networking** 6. Describe common network vulnerabilities. **Cybersecurity Ethics** 1.Explain how ethical foundations are applied to situations arising from the interconnected world. 2. Examine diverse ethical dilemmas. 3. Describe the role of cybersecurity in supporting and encouraging ethics, as well as where cybersecurity practices can cause ethical conflicts. **Network Technology and Protocols** 3. Identify and describe a variety of common network vulnerabilities. 6. Explain the weaknesses of WEP and which weaknesses have been addressed and how	1.Students are requited to write a paper about how ethics and morals are part of cyber/network security 2.Students are given an ethical dilemma and must write a paper on what they would do 3.Students look at laws andcustoms of other countires and write a paper about how they can cause issuses. 3.ReviewQuestion 6.Students watch a video on WEP and then using an Pineapple captures the WEP key of attest network	TBA
Week 11	Wide Area Networking and Cloud Computing • Wide Area Network Fundamentals • WAN Connection Methods • Remote Access Networking • Cloud Computing • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	Foundational - IT Systems Components 4. Properly use the Vocabulary associated with cybersecurity		TBA

Week 12	Network Operating System Fundamentals • Operating System Fundamentals • Client and Server Operating System Overview • Operating System Virtualization • Installing an OS • Chapter Summary • Key Terms • Review Questions • Critical Thinking	Foundational - IT Systems Components 4. Properly use the Vocabulary associated with cybersecurity Technical Core - Basic Networking 1.Describe the fundamental concepts, technologies, components and issues related to communications and data networks		TBA
Week 13	Network Management and Administration • Managing User and Group Accounts • Storage and File System Management • Working with Shared Files and Printers • Monitoring System Reliability and Performance • Backup and Fault Tolerance • Chapter Summary • Key Terms • Review Questions • Critical Thinking	Foundational - IT Systems Components 4. Properly use the Vocabulary associated with cybersecurity		TBA
Week 14	The Internet of Things (IoT) • Introduction to the Internet of Things • IoT Networking • Commercial and Industrial IoT Devices • DIY IoT • Chapter Summary • Key Terms • Review Questions • Packet Tracer Labs • Critical Thinking	Foundational - IT Systems Components 4. Properly use the Vocabulary associated with cybersecurity		TBA

Week 15	Troubleshooting and Support • Documenting Your Network • The Problem-Solving Process • Approaches to Network Troubleshooting • Making Use of Problem-Solving Resources • Network Troubleshooting Tools • Common Troubleshooting Situations • Disaster Recovery • Chapter Summary • Key Terms • Review Questions • Critical Thinking	Foundational - IT Systems Components 4. Properly use the Vocabulary associated with cybersecurity Technical Core - Basic Networking 1.Describe the fundamental concepts, technologies, components and issues related to communications and data networks Network Technology and Protocols 5. Demonstrate the use of multiple tools to analyze and troubleshoot a network.	5. Students work with several networking tools, Nmap, Wireshark, angry IP scanner and Cable testers	TBA
Week 16	Exam 2 and Final			

Method of Presentation

Lecture, Demonstration, Discussion, Research and Simulations

Method of Evaluation

The student is required to read and study the textbook material. Students are responsible for all discussion, assignments, and announcements posted on the course Web site. **No Late work will be accepted. No work may be emailed or dropped off all work must be submitted on D2L only**.

1. Homework. There will be review questions to complete at the end of each chapter. They are worth 20 points per chapter with a total of 13 chapters.

2. Case Projects. There will be a case project to complete at the end of each chapter. They are worth 30 points per chapter with a total of 13 chapters.

3. Exams. There will be two exams. All exams will be announced in advance. **There will be NO make-up exams**. If you miss an exam you must take the final.

4. In Class work. There will be in class work that is worth 100 points thru out the semester you may not make up any missed in class work. These will be unannounced.

Final grades for the course will be determined as follows:

2 Exams @ 125 points each	= 250
In Class Work @ 100 points	= 100
Case Projects @ 30 points each	= 390
Homework @ 20 points each	= 260
1,000 points possible	

900 – 1000 = A
800 – 899 = B
700 – 799 = C
600 – 699 = D
0 – 599 = E

Specific Course Requirements

Student Responsibilities: The student is required to read and study the textbook materials. Students are responsible for all discussions, assignments, and announcements made in class and posted on the course Web site. **Note:** All inquiries/questions should be directed to the instructor via email. There is a response time of 24 hours 8am Monday – 4pm Friday. A 48-hour response time 4pm Friday – 8am Monday. Both the instructor and students will observe this. **THE ONLY EMAIL ADDRESS THAT I WILL RESPOND TO IS THE VOLMAIL ACCOUNT THAT THE COLLEGE SET UP FOR YOU. I WILL NOT RESPOND TO HOTMAIL, YAHOO, GMAIL, OR ANY OTHER EMAIL ACCOUNTS.**

Students are to behave in a respectful manner while in the classroom. Respect should be given to the classroom instructor, classmates, and classroom activities. Students should not engage in activities that will distract from the learning environment. Therefore, the following conduct must be followed:

- Students are to give the instructor/presenter their full attention during presentations.
- Students should not be working on anything other than class material during class time.
- Students should not be surfing the Internet, checking e-mail, instant messaging, playing games, etc., during class time.
- Personal electronic device activity such as: cell phones, lap tops, PDA's, Ipods, etc., are not permitted in the classroom without prior permission.
- Software should not be disabled on classroom computers.
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If, during lab time, all assigned class work has been completed and submitted for grading, the students may engage in other school related activities while in the computer lab. However, under **NO** circumstances should a student be doing anything other than what the instructor is presenting during lectures.

If students engage in activities contrary to the above, the following procedures will be adhered to:

1. **First offense** – students will be warned and counted absent for the day.
2. **Second offense** – students will be asked to leave the classroom with no questions asked and will be counted absent for the day.
3. **Third offense** – students will be asked to leave the classroom, will be counted absent for the day, and will not be allowed back until they have met with the department chair. Students could, at this time, be subject to expulsion from the class.

Academic Dishonesty: Academic dishonesty will not be tolerated. If it is found that a student has been dishonest regarding academics, a zero will be given for said exercise, assignment, project, or test. In addition, academic dishonesty may result in expulsion, suspension, probation, or reprimand by the vice-president for administration. Please refer to Article IV, p. 34 of the John A Logan College's *Students Rights and Responsibilities: A Code of Conduct* publication.

Cell Phones: No talking, texting, or Internet use on cell phones will be permitted in the classroom. If your phone goes off in class, you will lose 25 points on your next exam, if Mark Rogers cell phone goes off in class everyone will get 25 points on the next exam. If you are expecting a phone call place your phone on vibrate, if it vibrates you will not lose the points, please go outside the classroom before you begin talking.

Tape recording of lectures: You may not tape record any part of the lectures without the written permission from the instructor.

Additional College Information and Resources

Please see the JALC Syllabus Attachment