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| **Lord Fairfax Community College** |
| ITN 101 Introduction to Network Concepts |
| Section 8H18, 3 credits,  2018/2019  Block 4  Rm. 0104A  M-F |
| VCCS Course Description:  ITN 101: Provides instruction in networking media, physical and logical topologies, common networking standards and popular networking protocols. Emphasizes the TCP/IP protocol suite and related IP addressing schemes, including CIDR. Includes selected topics in network implementation, support and LAN/WAN connectivity.  Lecture 3-4 hours per week. |
| Prerequisites: ITN 107 (CST-2 8623) and ITN 106 (CST-1 8622) |

* **Contact Information**

**Instructor: Thomas E. Sager - Technology Education – John Handley HS**

**Education/Background:**

B.A. - Temple University

VA teaching certification **–** Old Dominion University

CompTIA A+/Network+/iNet+ Certified

20 years of professional IT experience

**Office:** 0104A/B

**Hours:** Tuesdays 3:15-3:45

**Phone:** (540) 662-3472 Ext. 45163

**Email:** [sagert@wps.k12.va.us](mailto:sagert@wps.k12.va.us)

* **Student Learning Outcomes**

Upon Completion of this course, the student will be able to:

* Identify and describe network theory and the necessary practices to install, configure, and maintain network operations.
* Identify and describe network topologies, components, and protocols as they pertain to various network architectures.
* Describe and demonstrate network operations from which network monitoring and control or network management is exercised over a computer network.
* Identify and describe network security policies, procedures, and systems to protect networks from vulnerabilities, threats, and attacks.
* Describe and demonstrate troubleshooting tools, techniques, and methodology in the network environment.
* **Text/Materials/Media**

Managing and Troubleshooting PC’s 5th Ed., by Mike Meyers (ISBN-978-1-25-958952-2)

Some course material, graded exercises, and labs will be accessed via the internet.

**TestOut PC Pro 5.0.3 http://labsim.testout.com**

**All work that is turned in to the instructor must include First/Last name, Date, and Class period.** The following items are required daily for class:

* + - * + Chromebook
        + 3 ring binder
        + 3 hole punched notebook paper
        + Pen or Pencil
        + USB Thumb drive 16GB or > (strongly recommended)
        + Access to a Windows based PC outside of class (strongly recommended)
        + A POSITIVE ATTITUDE (Give 100%)
* **Procedures**

Instruction is facilitated following the textbook, lab activities, investigative research, and practical application of learned material.

* **Course Requirements**
* **Written assignments/special projects**
* Chapter homework, typed
* TBD, must be typed
* TBD, presented in Power point
* will cover CompTIA A+ objectives
* **Tests, Quizzes, and Exams**
* Tests are cumulative (module work), quizzes are per chapter (text book), one mid term and one final cumulative exam (CompTIA A+ objectives)
* **Labs**

Performed in class. They will cover CompTIA A+ objectives.

* **Attendance Policies and Requirements**

Students are expected to follow the attendance/tardy policies outlined in the student handbook. Regular attendance and timeliness are crucial to success in this course. Students who are absent are expected to use the instructor’s office hours to make up missed course work. Under special circumstances the student may make an appointment to make up missed work at other times outside of class.

* **Grading and Evaluation**
* **Homework: 10%**
* End of chapter key terms and multiple choice questions
* **Written Assignments/Special Projects: 15%**
* Will cover material studied in the chapter reading for that week.
* Word bank, multiple choice
* Assignments must be turned in on due date. You are encouraged to make corrections and re-submit for better grade.
* Late assignments are not eligible for re-submit. Missing assignments receive a 50%.
* **Labs: 25%**
* Will cover material studied and will be performed in class.
* Q&A, problem solving, and troubleshooting scenarios
* **Tests, Quizzes: 25%**
* Tests cover multiple chapters, quizzes cover single chapters
* Multiple choice, T/F, completion.
* **Mid Term and Final Exam: 15% of final grade**, cumulative multiple choice exam covering all CompTIA A+ objectives
* **Grading scale:**

A= 90-100

B= 80-89

C= 70-80

D= 60-69

F= 0-59

* **Late Policy:** All graded assignments will be assigned a numerical grade and will be entered into PowerSchool with “I” or “M” placed in the grade book for any incomplete or missing assignments. Students have a maximum of 5 (five) school days to make-up incomplete or missing work.  However, the period of time allowed to make-up work may be extended at the discretion of the principal working with the teacher. After 5 days, if work is not completed, the (I) or (M) will become a 0 (zero) grade. It is expected that students will make-up incomplete or missing assignments with no grade given.
* **Disability Accommodation Policy**

"Lord Fairfax Community College is committed to insuring that students with documented disabilities have the opportunity to take part in educational programs and services in accordance with the requirements of the Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act of 1973. Students seeking accommodations must make application with the Disability Coordinator in the Office of Student Success. Accommodations will be made in this class in accordance with the Accommodation Letter from the Disability Coordinator."

* **Academic Honesty**

The LFCC experience depends on the absolute integrity of the work completed by each student.  Students maintain a high standard of honor in their course work.  Academic honesty is essential to develop students’ full intellectual potential.  Academic dishonesty involves, but is not limited to one of the following: giving or receiving, offering or soliciting unauthorized assistance on any exam or assignment; plagiarism; and collusion.  Procedures cases of academic dishonesty are outlined in the LFCC 2017-18 Catalog and Student Handbook (page 251-253). LFCC’s Academic Honesty Policy will be enforced (see attachment).

Possible disciplinary action may include:

• Reprimand the student.

• Require that the work in question be done over.

• Assign a grade of zero on the work involved.

• Assign a grade of F for the course.

* **Student Conduct Policy**

**Classroom rules/Policies:**

* Respect each other
* Respect the classroom

Any additional rules and policies will be discussed during the first week of class. Contracts will be drawn up and signed by the student and instructor.

* **Other Information**

**Nature of the Course:**  
Integrating math, science and language arts skills with the technological skills, the curriculum ensures that each student makes a connection with the career pathway most suited to his or her individual abilities and aspirations.

* **Revisions/Updates to Syllabus**
* Will be posted on Blackboard / Google Classroom and announced in class.

Couse Calendar:

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| Subject Area | Resources: |
| Week 1 Introduction to Networking  Cabling and Connectors  Weeks 2-3 Networking Devices  Weeks 4 OSI and TCP Model and Network Protocols | Ch. 20  LabSim 6.1 - 6.4  OSI/TCP study guides |
| Weeks 5-7 Local Area Networking  TCP/IP (Transmission Control Protocol/ Internet Protocol) Including IPV4 and IPV6  Explain the basics of TCP/IP  Install and configure wired networks  Troubleshoot wired networks | Ch. 21  LabSim 6.5-6.7, 6.12 Network utilities |
| Weeks 8-10 Wireless Networking  Explain wireless networking components  Analyze and explain wireless networking standards  Install and configure wireless networks  Troubleshoot wireless networks | Ch. 22  LabSim 6.8, 6.9 |
| Weeks 11-15 The Internet  Explain how the Internet works  Connect to the Internet  Use Internet application protocols (focus on the 901 stuff)  Troubleshoot an Internet connection | Ch. 23  LabSim 6.10-6.14 |
| Weeks 14-16 Securing Computers/Networks  Explain the threats to your computers and data  Describe key security concepts and technologies  Explain how to protect computers from network threats | Ch.28  LabSims:  12.1 Best Practices (16pts)  12.2 Incident Response (12pts)  12.3 Physical Security (24pts)  12.4 Social Engineering (18pts)  12.5 BIOS/UEFI Security (22pts)  12.6 Malware Protection (20pts)  12.7 Authentication (44pts)  12.8 File Encryption (22pts)  12.9 Network Security (28pts)  12.10 Firewalls (26pts)  12.11 Proxy Servers (20pts)  12.12 VPN (20pts)  12.13 Security Troubleshooting (28pts) |
| Weeks 17-18 Review: Networking, OS, Security | Ch. 20, 21, 22, 23, 28 |